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Northwest Treaty Tribes

Protecting Natural Resources for Everyone

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Inside:

The Measuring Stick of Our Survival

by Ed Johnstone
NWIFC Chairman

My mentor Billy Frank Jr. always said salmon are the measuring stick of our survival.

He was referring to all of us. Salmon are the keystone that supports dozens of other species of fish and wildlife. Their survival, and ours, depends on clean, cool, flowing rivers and streams.

We had an opportunity to protect those waters with the Lorraine Loomis Act, proposed by Gov. Jay Inslee and named for NWIFC's former chairperson, who passed away last year. Lorraine knew protecting riparian habitat is essential to salmon recovery. She wanted nothing more than to ensure future generations of Washingtonians could experience what it means to have healthy salmon runs and the joy of salmon fishing.

We understand that the bill is not progressing in the state Legislature this year, but that doesn't mean the work stops. It can't.

We're already behind schedule. It's been 10 years since Billy said, "We are at a crossroads and we're running out of time."

The Lorraine Loomis Act was a starting point that sought to protect and grow trees in the riparian zones along salmon and steelhead streams. It also would have provided financial assistance to help landowners comply with the law. It would have included a regulatory backstop for those unwilling to comply.

Tribes have been pushing for legislation like this for years. But this isn't an "Indian bill." Numerous environmental groups as well as recreational and commercial fishing organizations have supported it because they understand we're all in this together. They have prioritized salmon restoration because they know how critical the situation is.

Tribes are bearing the burden of fixing a problem we didn't create.

Our hatcheries release more than 35 million salmon and steelhead every year and we have restored thousands of miles of habitat. But habitat destruction has run rampant, and the state has failed to do enough about it. Our people are hungry and there's no end in sight.

Climate change is a primary culprit. Temperatures in streams are the highest on record. After last summer's extreme heat wave, more than 2,500 chinook salmon died on the South Fork Nooksack River before they could reach the Lummi Nation's Skookum Creek Hatchery, because of lethal temperatures for salmon and low flows. Improved riparian conditions and channel complexity could have prevented this tragedy.

If the Lorraine Loomis Act passed this year, it would have helped prevent more such tragedies in the years to come. As it is, the number of temperature-impaired salmon stream segments in our *US v. Washington* case area has increased from 400 to 2,000 over the past few decades.

Getting trees in the ground is the first step toward protecting riparian habitat. It's a small step, but an important one that requires a long-term commitment. The treaty tribes are committed to this work. It's going to take at least 40 years before trees grow enough to protect our salmon streams. Additional habitat restoration is needed, and we need to build capacity and infrastructure to do the work – now.

Yes, there are those who oppose these critical efforts. Some in the agricultural industry seem to think creating riparian management zones puts the burden of salmon recovery on them. They claim it could harm their businesses. It's a short-sighted attitude given the fact that protecting streams, rivers and the environment is an investment in their future as well as ours. Also, failing to protect salmon habitat violates treaty tribes' federally protected right to harvest salmon.

We've already lost more than 90 percent of our salmon harvest. We aren't asking farmers to give up 90 percent of their livelihood. Planting trees won't put anyone out of business. It won't impede the economy, the environment or the Northwest way of life. Quite the opposite.

Fully functioning riparian habitats provide bank stability, shade, pollution control and the large woody debris salmon need to survive. The lack of these habitats eats away evermore at our precious way of life.

There is no more time to waste. The state needs to get serious about re-establishing riparian habitats – now.

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On the cover: Port Gamble S'Klallam Tribe fisherman Chad Sullivan talks with John Gresham, a Port Gamble S'Klallam tribal member and U.S. Coast Guard fish vessel examiner, about Sullivan's boat during a safety equipment check at Point Julia. *Photo: Tiffany Royal*

Clam garden brings history full circle at Kukutali

The Swinomish Indian Tribal Community is bringing back an Indigenous shellfish cultivation method that dates back at least 4,000 years and will bolster food sovereignty efforts.

The tribe is building a 200-foot-long clam garden at Kukutali Preserve. The garden will be a terraced swath of beach that will form behind a rock berm placed in the intertidal area. It is believed to be the first modern-day clam garden built in the United States.

Like other venues where families gather, it will offer a social and multigenerational experience. Families will harvest together here, elders will pass down teachings to young ones, and all hands will work together to tend the site.

"It's a way of community building and bringing the people together and having a purpose, because when you're out there working, everybody has a role," said Swinomish Sen. Alana Quintasket. "Everybody has a responsibility."

The tribe has been learning about clam garden construction and management from first nations that have successfully restored gardens in British Columbia.

Tidal action carries sediment away through the rocks while leaving nutrients behind. Shellfish harvest "fluffs up the beach," stirring up those nutrients, said Tom Sewid of the Mamalilikulla First Nation, which maintains clam gardens in its territory on the central coast of north Vancouver Island.

The result: Clam gardens grow four times more clams, according to Gulf Islands National Park Reserve.

Decomposing shells that accumulate in clam gardens also contribute to a healthier environment for living bivalves.

"Clam gardens have a high concentration of shell fragments, also known as shell hash, that can help bivalves survive increasingly acidic ocean conditions," said Courtney Greiner, marine ecologist with the Swinomish Fisheries Department.

Clam gardens support other sea creatures as well, such as sea cucumbers, octopi and other species that live on the rocks. That means more traditional foods for the community.

Swinomish received funding for the clam garden from the National Oceanic and Atmospheric Administration's Saltonstall-Kennedy Competitive Grants Program and from the Northwest Climate Adaptation Science Center.

"We are thankful to receive this funding that will enable us to continue to work with the land and the water as we restore our ancient practices," said Swinomish Chairman Steve Edwards.

Top: Swinomish tribal members help tend to a clam garden during a 2019 visit to Russell Island in Fulford Sound, B.C. *Photo: Swinomish Tribe*. Above: Joe Williams, a Swinomish tribal member, explains how a clam garden works during a visit to Kukutali Preserve. *Photo: Richard Walker*

The tribe and Washington State Parks and Recreation Commission jointly purchased the upland area of Kiket Island in 2010 and it is now being co-managed as Kukutali Preserve. The tidelands are still owned by the tribe.

After a community process, Kukutali Preserve was selected as the clam garden site – rocks were expected to arrive in spring.

"We started with a general list of areas on the reservation where a clam garden could be supported, eliminating areas either because of water quality or it was within a culturally sensitive area or the substrate wouldn't support it," Greiner said.

From there, Swinomish staff assessed 15 possible locations on the reservation using criteria identified by a technical advisory board composed of Swinomish tribal members, first nation knowledge holders and clam garden researchers. The top sites were presented to the community and a site on Kiket Island was the final choice.

"We heard a lot of stories about how elders and families would spend days or weeks living on the beach at Kiket Island," Greiner said. "It was a place where they would gather and tell stories and dig clams and have a meal together." – *Richard Walker*

Above: USGS hydrological technicians Andy Cripps and Fred Reed collect flood flow measurements off the Weaver Creek bridge during a recent heavy rains in the Skokomish watershed. Below: Skokomish Tribe environmental biologist Julian Sammons reads the river stage height from a gage in a Skokomish River tributary under Highway 101. *Photos: Tiffany Royal*

Skokomish, USGS partner on stream gages

> "The volume of these floodwaters has been unknown and these data will help the tribe, residents, local, state and federal agencies make better decisions about river management."
>
> *Seth Book*
> Environmental Protection Agency grant coordinator
> Skokomish Tribe

The Skokomish Tribe wants to better understand the flooding of the Skokomish River – the same river responsible for viral videos showing salmon crossing the road when the river floods.

The tribe has partnered with the U.S. Geological Survey (USGS) to install three new stream gages that will measure the amount of water flowing from the Skokomish watershed, under the bridges on Highway 101 and onto the tribe's reservation.

"Gages are critical to flood management in the Skokomish River basin," said Seth Book, the tribe's Environmental Protection Agency grant coordinator. "These new gages will provide information about the volume of water flowing downstream at different points in the lower valley, as well as help determine flood timing."

To do this, routine flow measurements are needed to create a flow rating curve that correlates the height of the river with its volume of water, Book said.

"USGS are the experts in this field and have the equipment and software to do this," he said.

Data from these new gages will give the tribe and others more accurate information about the behavior of the river, such as where the floodwaters are going and how much water is coming out of the watershed.

USGS already is monitoring flows at six stations throughout the Skokomish watershed. This information is available online and is used for several purposes, including Tacoma Power's hydroelectric dam operations, and flood and emergency management.

"The volume of these floodwaters has been unknown and these data will help the tribe, residents, local, state and federal agencies make better decisions about river management," Book said. – *Tiffany Royal*

Tribe tests brownfields sites for safety

The Port Gamble S'Klallam Tribe has been digging deep to make its reservation safer for the community.

In its latest effort to identify and remove contaminated soils from the reservation, the tribe tested five areas as part of its brownfields program in fall 2021.

Brownfields sites are perceived to be polluted or contaminated based on history of use but are not confirmed until tested. If they test clean, they're removed from the cleanup list. If contamination is found, a cleanup plan and reuse plan is developed for the site, which can allow the land to be used in the future.

This is part of the tribe's long-term effort to clean the reservation to make it safer for the community, especially areas where the tribe often harvests fish and shellfish, said Josh Carter, the tribe's environmental scientist.

"We suspected many sites were contaminated," he said. "Once we get the data back from the lab, we will be able to determine if our suspicions were correct."

Sites tested on the reservation included Point Julia, the tribe's old wastewater treatment plant, the beach area known as "the bars," and the reservation's archery range.

Sampling work included pile-driving a 3-inch plastic tube into the ground at the tribe's old wastewater treatment plant to retrieve groundwater samples, as well as gently digging several shallow holes at Point Julia for soil samples. The tribe also had Point Julia scanned with ground-penetrating radar to look for anything unusual such as oil drums.

"I want our beach to be safe," said Laura Price, the tribe's tribal historic preservation officer who oversaw some of the dirt moving, making sure sensitive areas weren't disturbed while also supporting the sampling work. "We're looking for contaminants that would affect not just this generation but future generations."

Since 2009, the tribe has been investigating Point Julia for possible areas of contamination, including taking soil and water samples for analysis. The tribe also removed derelict boats, trailers, barges and fishing gear, the tribe's old fishing dock, creosote piers and boat launch. Elders were interviewed to better understand how the land was used previously.

The 2021 round of testing looked for heavy metals, such as cadmium, lead, mercury, copper and arsenic, and byproducts of petroleum use, such as polycyclic aromatic hydrocarbons (PAHs). Testing also looked for dioxins, which are persistent contaminants that do not break down over time, and asbestos, which are present in concrete manufactured prior to the late 1980s.

Longer term plans include sampling the entire reservation for dioxins, looking for hot spots, Carter said. But soil sample testing is expensive, so it depends on funding.

The next steps for the tribe are to create assessment reports and cleanup action plans for each site, based on the data from this last round of soil sampling, and finding federal funding to enact the plans.

– Tiffany Royal

Left: Port Gamble S'Klallam Tribe natural resources staff members Josh Carter and Megan Rohrssen look at a groundwater soil sample as Stantec geologist Aaron Wisher looks on. Right: Wisher takes a soil sample from Point Julia to be tested for contaminants. *Photos: Tiffany Royal*

Tribe earns federal conservation award

The Nisqually Tribe and partners earned an honor from the federal Environment Protection Agency (EPA) for a project to restore and protect the Nisqually River's largest tributary for generations to come.

The project's aim is to acquire property to restore the Mashel River's water quality and quantity, protect surrounding shoreline and timberlands, and benefit steelhead and chinook salmon in the federally designated critical habitat.

"I was always taught by mother and father the importance of water," said Nisqually Tribe Chairman Willie Frank III. "We have to do whatever we can to protect our watershed and we can't do it alone. Projects like these where we are working with state, federal and local nonprofit partners show what can be done when we work together."

So far, the project has acquired about 4,000 acres managed by the Nisqually Community Forest. Several partners manage its natural resources.

While the project is ongoing, in January the EPA recognized its accomplishments with an award to the tribe and partners including the Nisqually River Council, Nisqually Community Forest and Nisqually Land Trust. The groups coordinate with the state Department of Ecology to buy and manage properties.

Each state submitted only one project for consideration for the George F. Ames Performance and Innovation in the State Revolving Fund Creating Environmental Success (PISCES) Award. Only five projects nationwide were selected for Exceptional status, including Nisqually's project, the designated submission for Washington state.

"This is a fascinating project. We hope we can share this across the country as a model and see it replicated elsewhere in the country," said Andrew Sawyers, EPA director of the Office of Wastewater Management, which oversees the Clean Water State Revolving Fund that helped fund the project.

An EPA model showed that 40-year rotations of timber harvest result in reduced water available for streamflow during the critical summer rearing period for salmon. This negatively affects habitat due to high rates of water evaporation from trees and soils in younger forests and less woody debris and duff-layer material to hold water in the drier months.

> "We have to do whatever we can to protect our watershed and we can't do it alone. Projects like these where we are working with state, federal and local nonprofit partners show what can be done when we work together."
>
> *Willie Frank*
> Chairman
> Nisqually Tribe

"As development in the Nisqually River watershed has added more wells that are not counted against minimum flows, we have had to think outside the box about ways to protect it and be able to hand it off in good health to our kids and grandkids," said Nisqually Tribe natural resources director David Troutt.

Acquired properties would be managed with the long-term health and abundance of the region at the forefront, said Chris Ellings, Nisqually salmon recovery program manager.

"Profit isn't driving management. It's the ecosystem, it's local economies," he said. "We become managers ourselves in the woods. That's the route we've taken."

Modeling found that increasing the presence of older trees, which suck up less water, could help the river gain water in the crucial, low-flow summer months, Ellings said.

It's an endeavor that will take time, he said. In the meantime, he said the tribe and its partners will take any measures it can to bolster the health of the ecosystem, including protecting culturally important plants such as huckleberry and beargrass found there.

"This is taking the long perspective," Ellings said. "Trees have to get 60 to 80 years old before the dynamic shifts from being thirsty trees to less thirsty trees to where we see measurable gains in streamflow. That's part of the story – to reverse 200 years of degradation, it'll take another 100 years. We're going to start now." – *Trevor Pyle*

The Busy Wild Creek watershed, shown here in a drone photo, is part of an innovative forestry management partnership that earned the Nisqually Tribe a prestigious award. *Photo: Nisqually Tribe*

Property along Skookum Inlet has been acquired by the Squaxin Island Tribe from the forestry company Port Blakely. *Photo: Theresa Henderson, Squaxin Island Tribe*

Reclaiming ancient land, shoreline, tidelands

For generations, the people of the Squaxin Island Tribe lived near the waters of the seven southernmost inlets of the Salish Sea – rich environments where ancestors fished, harvested, worshipped and lived their lives.

Now, through a transaction with the forestry company Port Blakely, the tribe once again has access to more than 1,000 acres of ancestral lands including tidelands and shoreline.

"We are honored and grateful to reclaim these lands and for the return of the shoreline. The Squaxin people lived and stewarded this very land and waterway for thousands of years before it was taken from us in the mid to late 1800s," said Squaxin Island Tribal Chair Kris Peters. "It is honorable of the leadership at Port Blakely to recognize this injustice and offer this land to come back to us.

"These beautiful and bountiful tidelands and beaches will be something all Squaxins can enjoy. It will undoubtedly be a place to reconnect with our ancestors in ceremony, harvest and other tribal gatherings. My spirit is singing today. Hawadubš cələp, thank you!"

The agreement between the tribe and Port Blakely was announced in December. The tribe agreed to purchase about 875 acres of upland working forest from Port Blakely for an undisclosed price; in a separate agreement, Port Blakely returned the adjacent two miles of waterfront and 125 acres of tidelands. The latter agreement restores the tribe's access to Puget Sound and nearby shellfish beds, a natural resource that has been central to the tribe for thousands of years for sustenance, economic and ceremonial purposes.

"Not only have we regained access to 125 acres of tidelands and beaches for ceremonial and harvest, we now have roughly 875 acres of upland working forest resources to manage for our community," said Joseph Peters, Squaxin Island Tribe natural resources policy representative. "These forest resources will provide our Squaxin gatherers with berries, bark, roots, medicine and spiritual connection with the watershed."

"The aquatic creatures that sustain us and give us life offer much more than mere physical nourishment; they provide spiritual sustenance as well," the Squaxin Island Heritage Committee said in a statement on the Squaxin Island Museum website.

The tribe and Port Blakely have built a relationship over the years, with the tribe purchasing small parcels of land before this recent larger agreement.

"Both Port Blakely and our family owners recognize the cultural significance of this land to the Squaxin Island Tribe, land they were unfairly forced to surrender more than 150 years ago," said Mike Warjone, president of Port Blakely US Forestry.

"We are grateful for the relationships we've built with the tribal council and hope this agreement allows them to build a legacy for generations to come. We hope other landowners will look for ways to work together with tribal communities to honor the heritage of the original stewards of the land."

– Trevor Pyle

Tulalip hatchery receives system upgrades

Hatcheries, like the salmon they rear, need a lot of cool, clean water.

The Tulalip Tribes' Bernie Kai-Kai Gobin Hatchery will soon have a water reuse system that will quadruple the amount of water available for hatching and rearing chinook, coho and chum salmon.

The hatchery draws its water from the east and west forks of Tulalip Creek and five wells. The water reuse system will recirculate water after filtering it through two large drum filters that remove suspended solids, treating it with ultraviolet light and oxygenating it before returning it to the ponds and raceways.

The reuse system will increase the amount of water available from approximately 3,000 to 12,000 gallons per minute, similar to the one at the Muckleshoot Tribe's Keta Creek Hatchery, said Mike Crewson, the Tulalip Tribes' salmon enhancement scientist.

"More water means the hatchery will be able to increase the number of chinook it hatches and rears by more than 80 percent – from 2.4 to 4.4 million fish," Crewson said.

The hatchery also is expanding 12 of its 20 raceways. The channels, which are used for rearing fish, will be deeper and wider and supplied by the reuse system plus four new wells recently connected to the hatchery, in addition to an existing hatchery well.

All told, the project cost is approximately $4.2 million and will be completed in April, Crewson said.

More fish means the hatchery will be more of an attraction to cormorants, mergansers and otters that have been known to alight on the hatchery for a captive meal. All raceways will get screened lids with lightweight aluminum frames and pneumatic closers, similar to a screen door, using a Washington Department of Fish and Wildlife design called "flyswatters." The lids will protect rearing fish from predation while enabling feeding, Crewson said.

Construction workers with Chinook Enterprises work on the expansion of a raceway at the Bernie Kai-Kai Gobin Hatchery on the Tulalip Reservation. *Photo: Richard Walker*

The hatchery is named for Bernie Kai-Kai Gobin (1930-2009), who started the Tulalip Tribes' first hatchery in the 1970s to make sure salmon is available for current and future generations.

"One of the biggest reasons for the hatchery is so if someone says they want to fish, there's fish that he can catch out there — like his dad did, like his grandfather did, and like his grandfather's grandfather did," said Jesse Rude, assistant hatchery manager and one of Gobin's grandsons. "That's who we are and that's what we do." – *Richard Walker*

One Million Fish

The Suquamish Tribe's *R/V Challacum* receives a load of juvenile coho salmon from a Washington Department of Fish and Wildlife (WDFW) fish transfer truck at Pier 91 in Seattle.

A record-setting 1 million juvenile coho salmon are now calling Elliott Bay home – until the summer.

About 340,000 fish were spawned at Muckleshoot's Keta Creek Hatchery and the rest were spawned at Soos Creek, a WDFW hatchery. In late February and early March, the fish were transfered to the Elliott Bay net pens where they will acclimate until late May or early June when they are released.

This net pen transfer is part of the decades-long partnership between the Suquamish and Muckleshoot tribes and WDFW. Last year, the net pen program doubled in size, increasing fishing opportunities for everyone. *Photo: Tiffany Royal*

Increased numbers of steelhead return to Elwha watershed

Greater numbers of winter steelhead have been making their way beyond where the former Elwha and Glines Canyon dams used to sit in the Elwha River for more than 100 years.

The Lower Elwha Klallam Tribe, using sonar technology, has estimated that nearly 2,300 adult winter steelhead returned to the river in 2021, an increase of roughly 300 from the previous year. This is the largest amount since monitoring started in 2013.

Visual surveys of redds (salmon egg nests) tell scientists what areas salmon are using in the watershed. In 2020, 153 redds were counted, most of them between the two former dam sites. Additional redds were found above Glines Canyon, about 13 miles from the mouth. In 2021, 197 redds were observed.

The tribe, in partnership with Trout Unlimited, Olympic National Park, National Oceanic and Atmospheric Administration and private contractors, recently released the results of their 2020 and 2021 winter steelhead spawner surveys and sonar monitoring data.

While the number of redds found in between the two former dam sites were low compared to previous years, the number of redds found above the former Glines Canyon dam area was high, suggesting that fish are continuing to recolonize the upper watershed habitats, said Mike McHenry, the tribe's habitat program manager.

The area just below and beyond Glines Canyon is within Olympic National Park and preserved from any development, lending the area to pristine salmon habitat.

The distribution of redds throughout the watershed also has increased. This is a positive sign for recolonization, McHenry said, because spawning winter steelhead are spreading out in the watershed and will likely continue as the river restoration process continues. However, scientists suggested expanding survey efforts beyond the middle and upper areas of the mainstem to learn more about the distribution of the redds.

Since 2011, the tribe and partners have been documenting annually where steelhead are spawning in the river between February and July, counting redds by hiking up the Elwha River from the mouth to just beyond the former Glines Canyon dam site.

The tribe uses sonar to determine the number of adult salmon returning to the Elwha River. Annually, from late January to the end of the run's entry into the watershed in June, two sonar cameras are set up in the river to monitor the returning fish.

Sonar systems have been used since the 1960s to count fish migration, and with improved accuracy over time, sonar can now provide data that show direction of travel and length of fish.

In addition to sonar monitoring, the tribe has been determining species composition with tangle nets to establish the origin of fish returning to the river. – *Tiffany Royal*

Top: A spawned-out male steelhead. Left: Surveyors walk along the mainstem of the Elwha River in the old Aldwell reservoir basin during the 2020 winter steelhead survey season.
Photos: John McMillan

Planting underway at 'River's Edge Reveg'

Now that a hefty 10,000-year setback levee has been built along the Dungeness River, it's time to get the new floodplain filled with native vegetation.

In 2021, the Jamestown S'Klallam Tribe constructed a new setback levee to replace the harmful 1964 U.S. Army Corps of Engineers dike that butted against the river, restricting river flow and damaging salmon habitat. The old levee is expected to be removed this summer.

The tribe will spend the next two years planting 35,000 native plants throughout the 56-acre floodplain in a project dubbed "River's Edge Reveg." This reconnected area will evolve into healthy salmon habitat while protecting nearby properties and the Dungeness community from flooding, said Hilton Turnbull, the tribe's habitat biologist.

The plants will create a floodplain forest that will encourage the development of salmon habitat and keep non-native plants from establishing while stabilizing soils and hindering riverbank erosion, he said. As trees age and fall into the river, they will provide refuge for juvenile and adult salmon, stabilize river channels and provide side-channel habitat that fish need to grow and reproduce.

New vegetation includes native species such as serviceberry, Grand fir, cottonwood and Douglas fir. The tribe also is planting coastal redwood and giant sequoia to help establish southern conifer species in an attempt to make floodplain revegetation projects more resilient in the face of a changing climate, Turnbull said. Those trees are nursery stock grown in Olympia and were cloned from some of the largest specimens in northern California and southern Oregon.

The River's Edge project overall is a three-pronged effort, Turnbull said: To increase Dungeness salmon productivity by reconnecting lost floodplain, to conserve farmland and to restore the river to a more natural state.

It's only taken two years from when the tribe purchased the 65 acres of land in 2020, constructed the 5,000-foot-long setback levee in 2021 and initiated the vegetation planting in early 2022, which is extremely quick for such a large-scale project, he said.

"It's a good fit for everyone," Turnbull said. "We were able to accomplish three really great things at once with this work."

The planting effort is in partnership with the local Washington Conservation Corps crew, the North Olympic Salmon Coalition and Clallam County Conservation District. The tribe is overseeing the maintenance and long-term stewardship of the property.

– Tiffany Royal

Top: Jamestown S'Klallam Tribe natural resources technician Steve Irish talks with habitat biologist Hilton Turnbull about planting sites on the newly developed floodplain along the Dungeness River. Above: Washington Conservation Corps crew member Natalie Pence plants a native shrub in the new floodplain. *Photos: Tiffany Royal*

Salmon, habitat thriving in Elwha tributary

Staff from the Lower Elwha Klallam Tribe, Clallam Conservation District and local volunteers planted native vegetation in February along the new floodplain of Little River, a tributary to the Elwha River.

The tribe spent the past few years restoring the salmon habitat in Little River by installing logjams and boulders that provide natural features salmon need to survive, slowing water velocity and creating pools for salmon to rest, spawn and feed.

Little River is one of the first streams that salmon and other fish recolonized after swimming past the old Elwha Dam following its removal in 2013. The dam blocked fish passage for nearly 100 years.

Since 2013, Puget Sound chinook, steelhead, coho, pink salmon and bull trout have been seen spawning in Little River. *Photos: Tiffany Royal*

Early signs of success at Barnaby Slough

Coho return to spawn shortly after restoration completed

Above: Visitors walk across a new bridge at Barnaby Slough, the site of a former state fish hatchery that was removed as part of a habitat restoration project on Barnaby Reach. Left: Trumpeter swans drift in the still water. *Photos: Richard Walker*

Neighbors had been cautious about the habitat restoration work that was to be done at the site of a former state hatchery at Barnaby Slough: the excavation, the removal of structures and pipes, the decommissioning of utilities and wells.

But during a January site visit, the 40 or so present were brought to applause by the news that spawning coho salmon have returned to the backwater that was formerly cut off from the Skagit River mainstem by the hatchery's dikes.

The public got its first look at the completed phase one of the Barnaby Reach restoration project, which is managed by the Skagit River System Cooperative (SRSC) and funded by the state Salmon Recovery Funding Board, National Oceanographic and Atmospheric Administration, and Seattle City Light.

Project partners also include Washington Department of Fish and Wildlife, and The Nature Conservancy.

SRSC is the natural resources extension of the Swinomish and Sauk-Suiattle tribes. From July to December 2021, SRSC oversaw the removal of the former state hatchery's water-control structures, buildings, abandoned wells, road fill, three dikes and an enclosed rearing pond.

The intent of the project was to restore fish access to floodplain habitat, considered to be one of the biggest needs for salmon recovery in the Skagit River watershed.

> "We are very pleased with the result of the phase one construction project, which has opened up Barnaby Slough for fish passage, and we have observed adult salmon in Barnaby Slough after project construction."
>
> *Devin Smith*
> Habitat restoration director
> Skagit River System Cooperative

In January, trumpeter swans drifted in Barnaby Slough and a bald eagle perched on a snag above a large beaver lodge. Water from the Skagit River mainstem backed into the slough and flowed downstream to other sloughs in the watershed. Snow-capped peaks were mirrored in the glassy water. There were no structures or dikes to interrupt the flow or view of any of it. Hundreds of recently planted seedlings are taking root and will someday shade the nearshore.

All told, 26 acres of fish habitat have been restored. There are plans to plant thousands more cedars, firs and other native plants over 40-60 acres, said Brenda Clifton, SRSC restoration botanist.

"We are very pleased with the result of the phase one construction project, which

Squaxin Island tribal member Cecilia Pell Bob dry smokes cockles in this archival photo. *Photo: Squaxin Island Tribe*

Slough: Early success at former state hatchery site

has opened up Barnaby Slough for fish passage, and we have observed adult salmon in Barnaby Slough after project construction," said Devin Smith, SRSC habitat restoration director, who managed the project.

"But more importantly, we have embarked on a detailed monitoring program that will include scientific studies of the fish benefits of the project as well as potential changes in flow conditions within the Skagit River and floodplain," he said. "This was ongoing before the recent construction project and will take a few more years but will produce a lot of valuable information."

Restoration work could take place in the future elsewhere on Barnaby Reach, which extends from the mouth of Illabot Creek downstream to the Sauk River near the town of Rockport, Smith said. Planning and design work on phase two is funded.

"The phase two project would remove infrastructure in the Harrison Pond complex and divert a portion of Illabot Creek through the Harrison complex to increase off-channel habitat within the Skagit River floodplain to benefit chinook salmon and other species," Smith said. "It is on hold because it will require a lot of discussion and communication with stakeholders, which has been difficult during COVID. We're hopeful that we can pick that work up again perhaps in the spring or summer."

– Richard Walker

A stream flows from Barnaby Slough to a pond complex that is habitat for chinook salmon and other species. *Photo: Richard Walker*

SRSC, Navy team up to restore stream

Young chinook acclimate in pocket estuaries

Swinomish Chairman Steve Edwards tells NAS Whidbey Island commanding officer Capt. Eric Hanks he appreciates the collaboration that led to the restoration of Crescent Harbor Creek. *Photo: Richard Walker*

Crescent Harbor Creek whooshed over rocks and gurgled mid-channel as it meandered to the lagoon at the harbor, and Josephine Jefferson of the Swinomish Indian Tribal Community pointed out what people were hearing was the sound of life.

"The sound of the water you hear is a blessing," said Jefferson, Swinomish's historic preservation officer. "Water is life. It helps set the table when the tide goes out."

The creek wasn't always like this. More than a century ago it was made into a straight, deep ditch to drain the watershed for agricultural uses. It was devoid of plants and trees that helped keep water temperatures cool and supported the food web.

The U.S. Navy acquired the site and made it part of Naval Air Station (NAS) Whidbey Island in 1941. In 2021, the Navy and Skagit River System Cooperative (SRSC) partnered to restore a quarter-mile length of stream. SRSC is the natural resources arm of the Swinomish and Sauk-Suiattle tribes.

Juvenile chinook are expected to immediately begin using the restored creek, where they will acclimate and mature before heading out to big water.

"Every restoration project, regardless of size, is an important piece of the overall puzzle," said Swinomish Chairman Steve Edwards.

"You look at all the small pieces, and at the end of the day, it's one big project. Every little step you take makes a difference. That's success, because you're moving in the right direction."

SRSC and the Navy have partnered since 2009 on restoration work in the Crescent Harbor salt marsh, a 206-acre pocket estuary within the boundaries of the Naval Air Station. Stream restoration was done in September, October and November last year.

The project restored 1,400 feet of stream along its historic alignment, increased the channel length within the project area by 40 percent, constructed 12 pools, installed 68 log structures and streambed gravel along the length of the restored stream, and planted 4 acres along the banks of the restored stream with 2,200 tree and shrub species.

The project was funded by the state Salmon Recovery Funding Board, the Pacific Salmon Fund and the Navy, and managed by SRSC and NAS Whidbey Island.

Cultural resource investigation and monitoring was performed in coordination with the Swinomish Indian Tribal Community and the Stillaguamish Tribe of Indians. Swinomish will continue to monitor the site, Jefferson said.

"The presence of cultural resources is a high probability anywhere near the water," she said.

The Crescent Harbor salt marsh is one of the largest historic pocket estuaries on Whidbey Island.

Nearly 80 percent of Whidbey Basin pocket estuaries are inaccessible to juvenile salmon or have been greatly altered from their historic conditions, said Eric Mickelson, restoration ecologist and SRSC project manager.

Restoration of the Crescent Harbor salt marsh was eased by the fact it has one owner – the Navy – while almost all the other pocket estuary sites on the island have dozens of surrounding landowners, making restoration more challenging.

"It's great to see our relationship growing and our communities coming together," Edwards said. "We need that."

– Richard Walker

Inspections help keep fishermen safe

Clockwise from top, U.S. Coast Guard fish vessel examiner Robert Cuddeback inspects the boats of Port Gamble S'Klallam Tribe fishermen Matt Oliver, Charlie Trevathan and Scott Fulton to make sure they are meeting federal safety equipment requirements.

The Coast Guard's fishing vessel safety office held a boat safety inspection event for Port Gamble S'Klallam tribal members in March on Point Julia. Boats were inspected for federally required safety equipment, such as navigation lights, fire extinguishers, life vests and distress signal equipment.

The event helped tribal fishermen make sure they can keep fishing in the event of a random boat check by the Coast Guard or tribal enforcement. If a boat owner does not have all the required items on board, they must stop fishing until the safety requirements are met.

More information can be found at *fishsafewest.info. Photos: Tiffany Royal*

A different kind of Northwestern visit

Bill St. Jean, Nisqually Tribe salmon enhancement program manager, feeds salmon as students look on during a visit to Kalama Creek Hatchery.

The students were from Northwestern University's Medill School of Journalism. Their visit included opportunities to meet and learn from members of several South Sound, Strait of Juan de Fuca and Coastal tribes. *Photo: Trevor Pyle*