

"THE SALMON DANCE, ON ITS FIRST ARRIVAL"

Yil-me-hu

SPRING 2024



THE NISQUALLY
WATERSHED
SALMON
RECOVERY
NEWSLETTER

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Cover Photo: Colorful fish painted by Nisqually Watershed Festival attendees line the sidewalks of the Billy Frank Jr. Nisqually National Wildlife Refuge.

Photo Credit: Tristan Olson



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Yil-me-hu

Yil-me-hu, Nisqually word that means "the salmon dance, on its first arrival."

The first fish ceremony — The first fish caught in the spring was prepared in an earth pit stove, shared and eaten by members of the village. The bones, left intact, were returned to the river, pointing upstream. This display was symbolic. It meant that the villagers were respectful to the fish spirits and wished that, because the ceremony had been done correctly, many more fish would come up the stream during that year. A dance followed the ceremony called the "yil-me-hu," a Nisqually word that means "the salmon dance, on its first arrival."*

* Carpenter, Cecilia Svinth, Fort Nisqually: A Documented History of Indian and British Interaction. A Tahoma Research Publication. 1986. p13.

Nisqually Indian Tribe



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David Troutt
Director of Natural Resources
for Nisqually Indian Tribe

This year marks the golden jubilee of the landmark Boldt Decision, a legal ruling that reshaped indigenous fishing rights in the Pacific Northwest, and the creation of the Billy Frank Jr. Nisqually National Wildlife Refuge. This anniversary stands as a testament to the enduring significance of environmental stewardship and tribal sovereignty.

In 1974, Judge George Boldt delivered a groundbreaking decision that reaffirmed the treaty rights of Native American tribes in Washington State. The ruling recognized tribes' entitlement to 50% of the harvestable catch in their traditional fishing grounds, challenging decades of discriminatory policies that marginalized indigenous communities. It was the result of nearly a century of tribes acting to exercise their treaty rights secured in the Medicine Creek Treaty of 1854. The epicenter for much of the controversy and actions occurred in the Nisqually at Frank's Landing.

The Boldt Decision, stemming from the landmark case *United States v. Washington*, not only upheld tribal fishing rights, but also affirmed the tribes' inherent sovereignty and co-management role in natural resource preservation. This legal triumph ignited a resurgence of tribal sovereignty movements across the nation and throughout indigenous communities around the world and set a precedent for indigenous rights in resource management.

Nestled at the confluence of the Nisqually River and Puget Sound, the Billy Frank Jr. Nisqually National Wildlife Refuge stands as a beacon of environmental conservation and habitat restoration. Established in 1974, the same year as the Boldt Decision, the Refuge spans over 4,500 acres of diverse ecosystems crucial for regional biodiversity.

This ancestral wisdom, coupled with modern scientific approaches, has fostered a balance between human activity and ecological resilience within the refuge.

The Refuge serves as a vital sanctuary for migratory birds, salmon, and other wildlife, providing essential habitat that supports the Nisqually Indian Tribe's treaty rights. Through collaborative efforts between federal agencies, tribal nations, the Nisqually River Council and volunteers, the refuge has undergone extensive restoration to reclaim much of the historic extent of the estuary and is one of the largest efforts of its kind on the West Coast.

The Nisqually Tribe, in particular, has played a pivotal role in safeguarding the Refuge's ecological integrity, drawing upon traditional ecological knowledge to inform restoration practices and resource management strategies. This ancestral wisdom, coupled with modern scientific approaches, has fostered a balance between human activity and ecological resilience within the Refuge.

As we commemorate the 50th anniversaries of the Boldt Decision and the Refuge, it is imperative to reflect on the achievements of the past while rededicating ourselves to the challenges ahead. Climate change, habitat degradation, and social inequities continue to threaten our ecosystems and communities, demanding collective action and unwavering commitment to environmental justice.

In the spirit of collaboration and solidarity, let us heed the lessons of history and forge a path forward guided by principles of inclusivity, sustainability, and respect for indigenous sovereignty. By honoring the legacy of the Boldt Decision and embracing the stewardship ethos on full display in the Refuge, we can aspire to a future where nature thrives, cultures flourish, and generations yet unborn inherit a world teeming with life and possibility.

TRIBE USES RADIO TRACKING TO STUDY NISQUALLY CHINOOK



Photo Credit: Walker Duval

Rene Bracero, Harvest Program technician, holding a natural-origin male Chinook, August 2023.

By the end of summer the Nisqually River becomes pale and clouded from the fine rock dust (glacial till) released by the Nisqually Glacier. It has been that way since the glacier formed, and in that murky pale water Nisqually Chinook returned to spawn. Hidden by the glacial till, the Chinook returning to the Nisqually are difficult to study and so their exact movements, behaviors, challenges, and successes are still not well understood.

To provide information on the migration and spawning behavior of individual Chinook, the Nisqually Indian Tribe and the US Fish and Wildlife Service have been tracking the movements of adult Nisqually Chinook by fitting them with radio tags and then monitoring each tag's movements. Each radio tag is about the size of your pinky finger and transmits a radio signal containing each fish's unique identification code, current water temperature, and the fish's live or dead status. The tags are detected by both stationary and mobile radio receivers which 'listen' for each tag's unique signal. Stationary receivers are located at key points along the Nisqually River and two of its tributaries, Ohop Creek and the Mashel River. Mobile receivers are taken on surveys using boats and cars throughout the watershed. The main purpose of the stationary receivers is to record when a tagged Chinook moved into an area, while the main purpose of the mobile

receiver surveys is to record where a tagged Chinook was on the day of the survey.

For this research Chinook were captured, tagged, and released by Nisqually Indian Tribe Harvest Program staff at River Mile 13 near the Centralia City Light Yelm Hydroproject Powerhouse as part of the sampling effort used to estimate the number of Chinook reaching the spawning grounds. Chinook capture begins in early August and continues through November. In 2023, 64 adult Chinook were tagged and released over the four month sampling effort. The 64 tagged Chinook included a mixture of males and females of hatchery and natural (from parents that spawned in the river) origin. Radio tagging is useful because it generates a record of the migration patterns, survival, and spawning location and timing for each individual, enabling an evaluation of how the different groups of Chinook behave. This includes information on how a Chinook responds to environmental conditions like streamflow, temperature, and other elements. All of these factors can impact migration behavior, spawning behavior, survival, and eventually spawning success and how many offspring each Chinook produced. The initial results of the 2023 Chinook radio tagging study indicates that the tagging study will help tremendously to fill in critical information gaps about where and when Chinook spawn in the Nisqually River and how best enhance their success.



Photo Credit: Rene Bracero

Wildlife Enforcement Officer Kalela Reuben holding a natural-origin male Chinook, September 2023. This Chinook's carcass was found 88 days later, during a spawning ground survey.



Photo Credit: Rene Bracero

Walker Duval, Harvest Program biologist, holding a natural-origin female Chinook, October 2023. This Chinook's bright silver color indicates that she has recently entered freshwater and it may be several weeks before she's ready to spawn. This is a much later spawn timing than the Nisqually Hatchery Chinook run, which is typically finished spawning by the end of October.



Photo Credit: Walker Duval

Rene Bracero, Harvest Program technician, holding a hatchery-origin female Chinook, October 2023. This Chinook's dark color indicates that she is ready to spawn and has likely been in freshwater for at least several weeks.



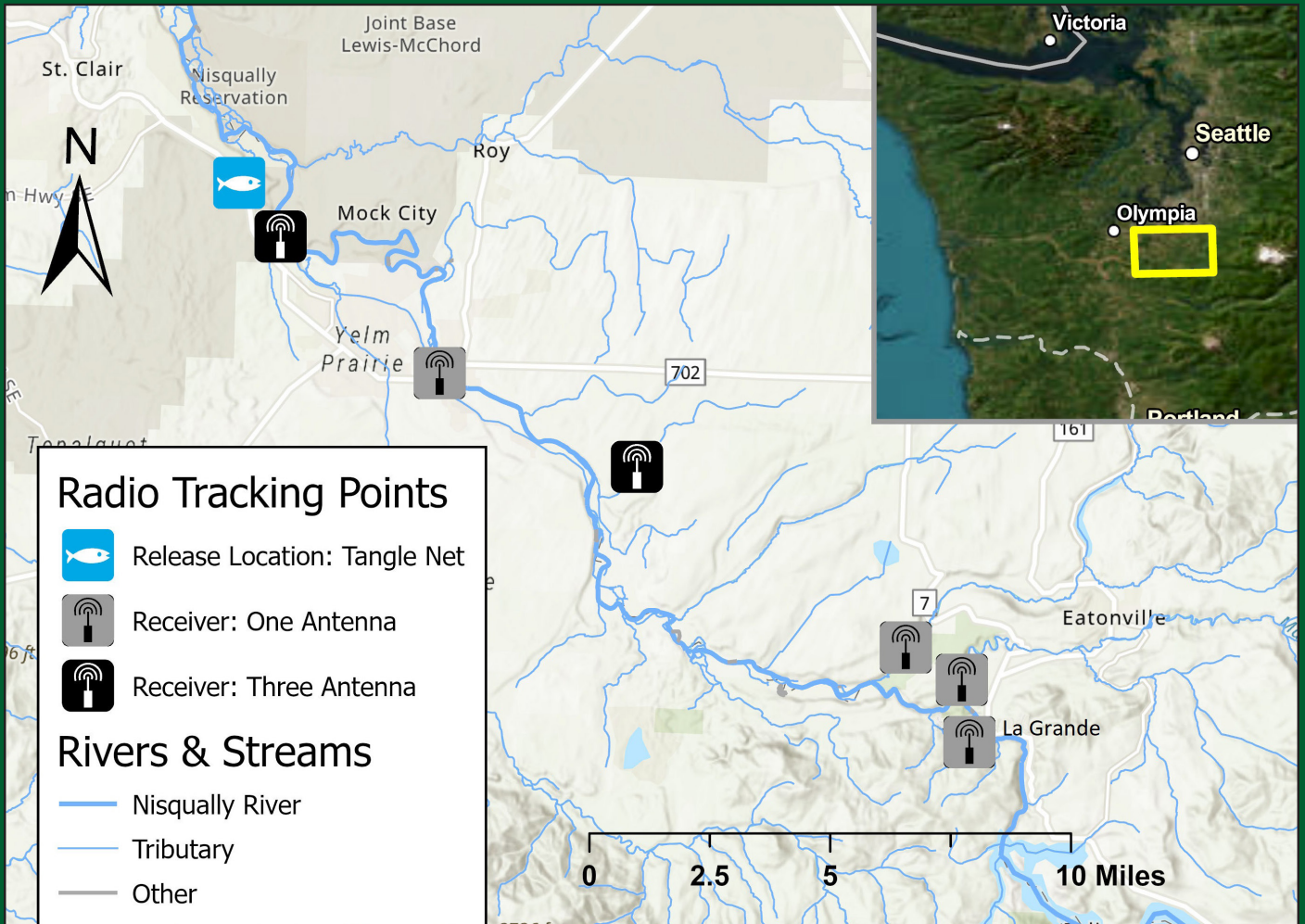
Photo Credit: Rene Bracero

Staff use a suture to attach a radio tag to the back of a Chinook.



Photo Credit: Rene Bracero

Craig Smith, Harvest Program Manager, holding a natural-origin male Chinook, November 2023. From this side it is easy to see the tag attached to the back of the Chinook, just below the dorsal fin.



Map Credit: Jed Moore

Map highlights the location of where the fish were tagged, as well as the location of the receivers throughout the watershed. Receivers with one antenna are helpful in identifying presence/absence of tagged Chinook, whereas having three antennas can help staff determine the direction of travel.

The music of cackling geese rings out as they rise in trailing lines, under the watchful eye of a bald eagle perched atop a cottonwood tree. In a watery marsh, ducks spin, bob, and slurp, finding meals amid the cattails and winter grasses. Shorebirds scatter across the salty mudflats at low tide, probing with slender bills for hidden worms and clams. In the riverside woods, flocks of songbirds flit together along bark and branches, searching for insects, while deer slip through the brush. A visitor to Billy Frank Jr. Nisqually National Wildlife Refuge today sees a mosaic of habitats, from wetland to forest, a landscape rich in wildlife. But just fifty years ago, this place looked very different: much of it was diked farmland. Yet it was a hotly contested landscape people fought hard to protect.

For countless generations the Nisqually Delta was a bountiful source of food and materials for the Nisqually people. The Medicine Creek Treaty of 1854 restricted the Nisqually people to a fraction of their original homeland, taking the delta for settlement. When Alson Brown bought 2,000 acres of land in the valley in 1904, he completed a five-mile dike to exclude the tide from the core of the estuary, replacing wildlife with cattle. After he lost the farm to creditors, it was sold to other farmers.

But by the 1950s, the Port of Olympia was eyeing the Delta as an option for a deepwater port. The Port of Tacoma explored the idea seriously in the 1960s. A competing concept was turning the Delta into a landfill for Pierce and King County's garbage. The Washington State Game Department (now called the Washington Department of Fish and Wildlife) fought development by purchasing tidal land. Despite

battling the Game Department over treaty rights, the Nisqually Indian Tribe allied with them to protect the Delta. Adversaries became allies. Citizens came together to press for the protection of the area. The U.S. Fish and Wildlife Service (Service) worked with non-governmental organizations like the Nisqually Delta Association and the Audubon Society's local chapters, as well as with the Nisqually Indian Tribe and Washington State, seeking long-term conservation. The result was the establishment in 1974 of the Nisqually National Wildlife Refuge, created as a sanctuary for migratory birds as well as "...for the development, advancement, management, conservation, and protection of fish and wildlife resources."

This shared success resulted in the largest protected area for wildlife in Puget Sound, a critical stopover for migrating waterfowl and shorebirds. It became a destination for visitors seeking connection with nature, offering trails popular with photographers and birdwatchers and providing education programs for students.

For decades, the Refuge was managed without major landscape changes. But the heart of the estuary was still diked. An audacious plan to restore the original estuary was proposed, and the Nisqually Indian Tribe and Ducks Unlimited became close

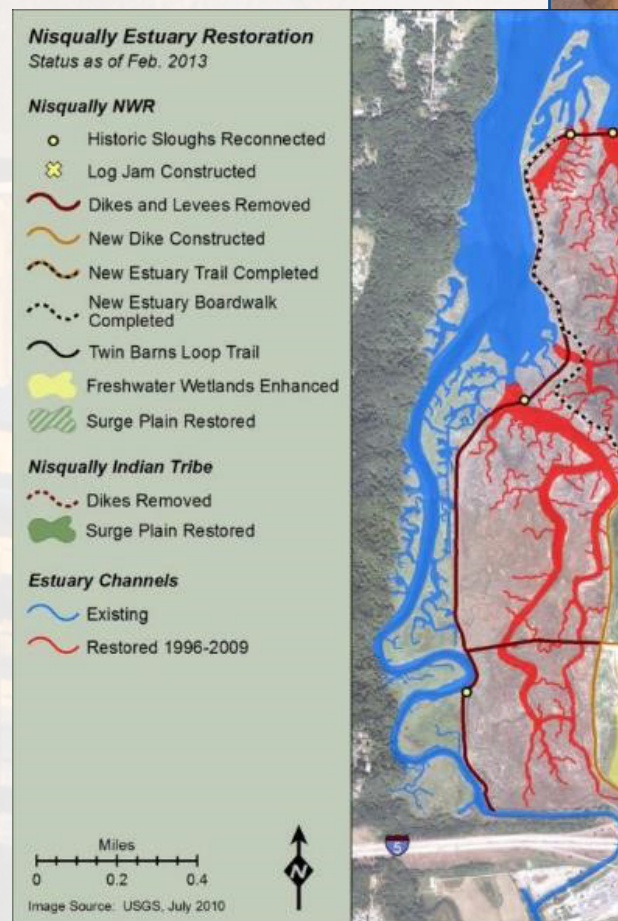
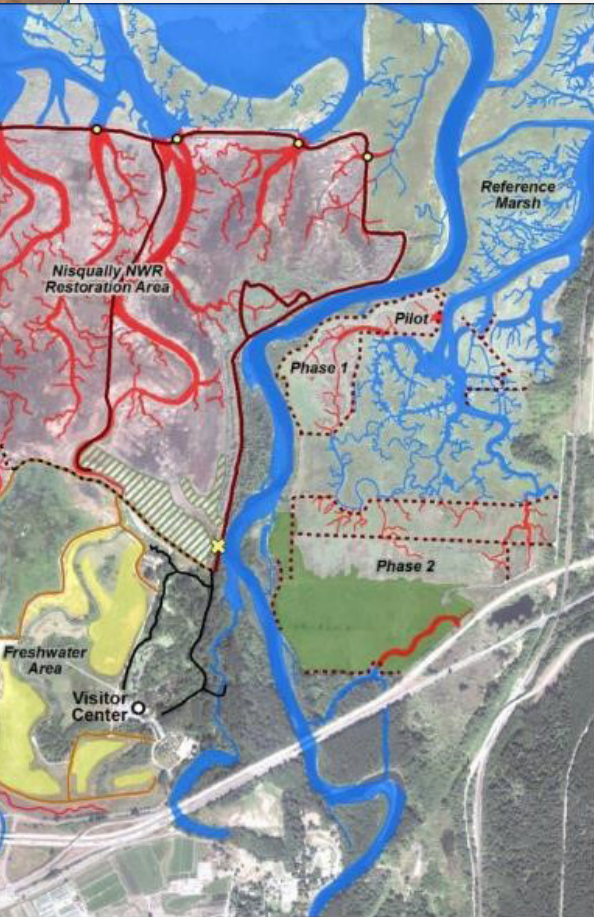


Photo Credit: WA Historical Society

Alson Brown, former owner and farmer, tending the fields of what is now known as the Billy Frank Jr. Nisqually National Wildlife Refuge.

RATES 50 YEARS

partners with the Service in this huge effort. Leading with a pilot project, the Tribe removed a dike around a 9-acre area on the east side of the Nisqually River in 1996, the first of a series of increasingly large dike removals that led up to the culmination: removal of the Brown Farm Dike in 2009 to allow saltwater to reclaim 762 acres.



After a century of blockage, the tide found its way back into the original channels, re-connecting over 21 miles of channels and sloughs, offering prime areas for migrating salmon and birds to feast and fatten. 200 acres are managed as freshwater habitat, supporting waterfowl in winter and songbirds in summer. The longest elevated

boardwalk in the state, the Nisqually Estuary Boardwalk, replaced the old dike trail, allowing thousands of visitors each year to enjoy viewing wildlife in the Delta. Cooperative agreements between the Service, the Tribe, and the State continue to reap benefits for wildlife and for visitors.

The Refuge was renamed in 2015 to honor Billy Frank, Jr., who exemplified leadership and the importance of working together to protect natural resources. The Medicine Creek Treaty National Memorial was established at the same time, commemorating the location where the federal government signed a treaty with the original land managers of the region. Wildlife continues



Photo Credit: Unknown

Heavy machinery removing the Brown Farm dike in 2009.



Photo Credit: John Whitehead

Canada geese enjoying freshwater wetland habitat at the Refuge.



Photo Credit: Unknown

Billy Frank Jr. at the Treaty Tree, the site where the signing of the Medicine Creek Treaty took place in 1854.

to thrive here, even as the human population grows in the surrounding area. 380,000 people now visit annually, drawn as people have always been by the abundant wildlife and the ever-changing views shaped by season and tide.

THE BOLDT DECISION: CELEBRATING 50 YEARS OF CO-MANAGEMENT



Photo Credit: Northwest Indian Fisheries Commission

After his retirement in 1984, local tribes, including Nisqually, invited Judge Boldt to tour their reservations. From the left: Dorian Sanchez, Billy Frank Jr., Judge George Boldt, and George Kalama.

February 2024 marks 50 years since Judge George Boldt issued the landmark decision in the Indian fishing rights case, *United States vs. Washington*. Judge Boldt's decision has had far reaching implications and forever changed the course of salmon management, setting the stage for all the work we do to recover and manage Nisqually salmon. The most important elements of the 'Boldt Decision' includes precedent setting rulings on Treaty Interpretation, Fishing Rights, and Self-Regulation.

Treaty Interpretation

Boldt's decision is based on two bedrock legal principles established by multiple U.S. Supreme Court decisions:

1) Indian treaties are agreements negotiated between sovereign powers and are, in essence, contracts between these sovereigns. For the United States they were ratified by the U.S. Senate, as with other treaties, and are the supreme law of the land; they continue in force unless explicitly modified by Congress or Executive Order.

2) The words, expressions, and basic elements of Indian treaties must be interpreted as the Indians themselves would have understood them.

Fishing Rights

The purpose of the *U.S. vs. Washington* case was to establish for all time the meaning of the following phrase, taken from the Treaty of Medicine Creek of 1854:

"The right of taking fish, at all their usual and accustomed grounds and stations, is further

secured to said Indians in common with the citizens of the Territory. . . ."

Legal challenges to Indian fishing rights had been raised by the states of Washington and Oregon and its citizens beginning in the 1880's and continuing ever since. As a result, before the Boldt trial and decision there had been multiple U.S. Supreme Court decisions touching on one or more aspects of treaty fishing rights and the treaty language. For Judge Boldt, these decisions were precedents that guided his analysis and decision.

Boldt's decision was lengthy and included a comprehensive analysis of treaty fishing rights. He knew whatever he decided would be appealed by the losing party, and he wanted to make sure that his analysis was sound. The initial decision and subsequent implementing decisions have been gathered in three lengthy volumes, but here is a summary of the key parts:

1) The treaties clearly reserved Indian tribes fishing rights that they already possessed: the right to fish not just on the newly created reservations, but at all traditional sites (usual and accustomed, or U&A, areas). The Boldt Decision recognized initial U&A areas and established a process for expansion of U&A areas in future proceedings.

2) These fishing rights had not been changed or diminished by Congressional or Executive actions, including the creation of the State of Washington. Therefore, they were the law of the land and the State of Washington was bound by them.

3) The language “in common with” would have been understood at treaty times as “shared equally,” that is, a 50/50 division of the harvestable fish between treaty fishing and non-Indian fishing interests, as represented by the State of Washington. Fishing rights included both salmon and steelhead, the latter then managed by the state for sport harvest only.

4) The treaties implied that tribes had the right to manage their own fisheries as they saw fit, subject only to the needs to conserve the salmon and steelhead. Boldt set out certain standards for self-regulation, including having professional fish managers, a legal code to establish fishing regulations and law enforcement, and an enrollment system to determine who was actually eligible to fish under tribal authority.

The fourth component was critically important as it led directly to Congress, through the Bureau of Indian Affairs (BIA), providing funding for the tribes, including Nisqually, to establish and operate these essential treaty rights programs. It took a few years, but by 1977 the Nisqually Tribe had established these programs.

Self-Regulation

The self-regulation part of the Boldt Decision, as it was implemented, led directly to how fisheries, and all natural resources, are managed today,

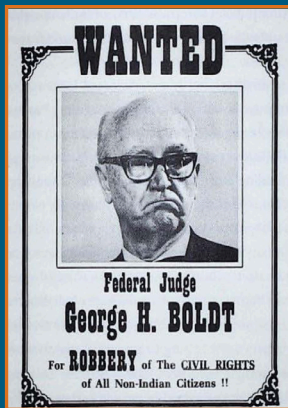


Photo Credit: Unknown

Though Judge Boldt's landmark decision created equal sharing of resources, as well as developed co-management between the State and the Tribes, it was not a decision supported by all.

especially in the Nisqually watershed. Over the years, each tribe developed its own watershed-based fish management department. Thus, the tribes themselves, through their scientists and biologists, became technical experts on fisheries matters. Washington State was no longer the only source of expertise. Since the decision, the two entities have continued to work together in cooperative management, or co-management.

Self-regulation also led to the current watershed approach to natural resources management. Fifty years ago, the State of Washington managed virtually nothing by watershed and had no mandate whatsoever to make sure salmon returned to the Nisqually River, or any other specific watershed.

As a result of the Boldt Decision, all this has changed. Indian Tribes are closely linked to their traditional homelands and watersheds, and were insisting on management decisions based on meeting the needs of individual watersheds. The Nisqually watershed was at the forefront of this approach, beginning with the adoption of the Nisqually River Management Plan in 1987.

Over a decade later, the Washington State Legislature would authorize the development of salmon recovery plans, mandating they be developed watershed by watershed. The Tribe was selected as the Lead Entity for salmon recovery for the Nisqually watershed and they continue to develop, implement, and adaptively manage these plans for not only the salmon, but to protect the Tribe's treaty rights. It's these successes that you get to read about in each year's edition of the Yil Me Hu!



Photo Credit: Debbie Preston

Department of Natural Resources Harvest Program working together with Nisqually fishers to manage the fishery as described in the self-regulation element of the decision.

NISQUALLY TRIBE IMPLEMENTS SELECTIVE FISHERY

The Nisqually Indian Tribe expanded tribal fishing time on the river this fall using traditional fishing gear along with recovery bags to increase hatchery harvest and protect natural origin (fish that were born in the river not in the hatchery) salmon.

The fishery followed a three-year study that revealed the combination of drift gillnets and recovery bags helped fishers selectively harvest hatchery Chinook, with limited impact on natural origin fish in need of recovery.

The gillnets are selective by mesh size, allowing non-target species to pass through. All captured Chinook were checked for the fin clips by fishers and coded wire tags by staff used to distinguish hatchery fish. The Chinook determined to be of natural origin are held in the water in a recovery bag, vital biological data collected, with the natural origin salmon being released at the end of the fishing day.

The study found that using this method in the Nisqually River had a mortality rate well under 10%. Research indicates that this rate is lower than that of other selective gear types.

“We were surprised by the results the first year,” said Nisqually Harvest Program Manager, Craig Smith.

This year, the tribe opened a selective fishery using this gear in three freshwater sites below the Clear Creek Hatchery. Carefully monitored, fishers drifted for no more than five minutes and held natural origin chinook until the end of the fishing day in recovery bags. The fishery was open for seven days across August and September—a sign of how the fishers’ traditional knowledge and dedication to the fishery’s guidelines led to more time on the water.

“The fishers are happy to be there. Until this fishery, some fishers have not been on the water as late as September in 10+ years,” Smith said.

Years of study and care by staff preceded the fishery. Set on exploring effective harvest gear that would be accepted by fishers while aligning with long-term goals to protect the resource, the tribe also tested cedar weirs, which were found useful in a smaller stream, but difficult to implement in a river, and tangle nets, which were unpopular because they scooped up non-target fish.

This year’s fishery observed the same low mortality rate found during the study. Smith said the fishery is a useful tool, and a stirring reminder of the tribes’ thousands of years of fishing experience can be drawn on to support present and future treaty fishing.

“It’s pretty cool, it’s pretty promising and the Nisqually River is a perfect place for it,” he said.

Adapted from article written by the Northwest Indian Fisheries Commission.



Photo Credit: Debbie Preston

Willie Squally and son, Junior, showing off their catch from the selective fishery.



Photo Credit: Craig Smith

Mike Sanders releases the first fish of the season.

PARTNERS TO USE LOW-TECH APPROACH FOR ENHANCING OHOP CREEK

Ohop Creek is one of the largest tributaries of the Nisqually River and critical habitat for multiple species of salmon. Much of the creek was ditched over 100 years ago to drain wetlands to promote agriculture and livestock. Due to the significance of Ohop Creek for Endangered Species Act-listed Chinook salmon and steelhead trout, the creek and its surrounding valley have been a focus of salmon habitat conservation and restoration efforts for nearly 20 years. The large-scale restoration projects were implemented in three phases and consisted of removing Ohop Creek from its confinement in a ditch, putting it in a new, more natural meandering channel with engineered logjams for habitat diversity, as well as planting 160,000 native plants to recover the floodplain forest.

Partners have been closely tracking the recovery rate and evolution of the restoration area, and have come to the conclusion that Ohop could use a small boost to speed up the recovery process. It will take decades for the native trees that were planted to provide the type of characteristics that make up a productive salmon stream like abundant woody debris, shade, floodplain connectivity, and habitat diversity. So what's next? How do we continue to move the lower Ohop Valley in the right direction?

In order to help boost the recovery of the lower Ohop Creek and valley, the project team is developing supplementary restoration strategies that fit with how the system is evolving over time, until the lower Ohop can become a self-sustaining, healthy system. The project partners will begin to supplement the restoration project through a new grant awarded to the South Puget Sound Salmon Enhancement Group by the Salmon Recovery Funding Board. This project will use a low-tech approach to help increase the recovery rate of lower Ohop Creek.

The low-tech approaches the project team will use to boost Ohop Creek recovery includes Beaver dam analogs (BDAs) and post-assisted log structures (PALS). Ohop Creek is a beaver's paradise, with many functioning and blown out dams sprinkled

throughout the system already. Providing more structurally sound BDAs on which the beavers can build upon will ensure they last longer and keep benefiting the system. PALS are similar to log jams in their function, but require little to no engineering and can be built by hand. All of these structures will help to catch sediment to decrease incision, improve the quality and quantity of in-stream salmon habitat, and increase channel complexity. These structures will also provide more wood and debris catching locations, allowing us to plan for future adaptive

management techniques like dropping wood into the channel and letting it build up into jams naturally.

Wood for this project will be sourced from the forest thinning projects being done in the Nisqually Community Forest (NCF). This is an exciting element that will link our ecosystem based community forest management with instream salmon habitat restoration. Using the NCF as a source of wood for this

restoration project is a way to strengthen the connection between partners working to preserve land and salmon habitat and to keep the wood in the watershed! This will cut costs on materials and dramatically reduce transportation distances and the carbon footprint of the project. More information about the NCF, visit: nisquallycommunityforest.org.



Photo Credit: Kylie ODriscoll

BDAs and PALS are intended to mimic the function and look of real beaver dams, while also providing inspiration for beavers to add on to old dams and make new ones.



Photo Credit: Kylie ODriscoll

Creek-spanning beaver dams provide several benefits to a system, including trapping sediment and opportunities to catch wood before it floats downstream and out of the system.

KALAMA CREEK HATCHERY RENOVATION TO BENEFIT SALMON AND PEOPLE

The Kalama Creek Hatchery was built in 1978 to supplement Nisqually coho and Chinook salmon runs for tribal and non-tribal fisheries. For nearly 50 years the hatchery has contributed salmon to fisheries from Alaska to South Puget Sound, but with aging infrastructure, evolving management goals, climate change induced water scarcity, and advances in hatchery methods, it became clear that it was time to re-imagine the Kalama Creek Hatchery and embark on an ambitious renovation. The result of the hatchery renovation will be a state of the art facility that prioritizes 'quality' of salmon over mass production and enables cutting-edge hatchery research that will increase the resiliency of coho and Chinook hatchery and wild salmon for decades to come. This project is fully funded by a number of Federal and State grants costing over \$8 million dollars. The first phase of the project started in January 2023 and will be completed by early summer of 2024, with the second phase to be completed by the end of the year.

Much like renovating an old house, updating the electrical and plumbing systems are priorities. The 46-year-old hatchery was completely re-wired and re-plumbed to provide reliability into the future. Significant additional plumbing was installed in varying pipe sizes, ranging from two to 36 inches, facilitating the movement of both water and fish in water around the site. The water source for this facility is pumped from the spring fed Kalama Creek just down the hill from the Red Wind Casino. Though this cool, clear water provides up to 1,500 gallons per minute at this time, given climate change and other factors reducing spring flows, installing water reuse systems was an integral part of this project.

Water quality and quantity are absolutely critical for

operating a salmon hatchery and the Kalama Creek Hatchery renovation uses advanced technology to both recycle and clean the spring water. All the water will be pumped from the pumphouse through a mechanical filtration system to remove sediments and silt down to 50 micron (.05 millimeter in size). This filter system is built into a 40' cargo container imported all the way from Spain.

Water will be recycled throughout the fish rearing process, from the first feeding room with circular fish tanks all the way to the large pond, where fish are kept right before they are released into Kalama Creek. In the large pond, up to 750 gallons per minute can be pumped through a new aeration system to strip out carbon dioxide and return oxygen to 95% saturation level. This reused water will be mixed into the top of the big pond along with first use water to enhance fish survival and overall health. Much like people, fish are healthier with exercise and the combination of reused water and first-use water will provide a significant flow through the pond allowing the fish to get nice and strong.

The most obvious upgrade is a brand new 6,000 sq. ft. building containing an office with kitchenette, a mechanical room, and a classroom! The classroom will provide an incredibly unique environment for all age groups to learn about salmon ecology and aquaculture. In addition to the classroom, four of the circular fish tanks have windows so students can observe juvenile salmon behavior. The classroom will truly make the Kalama Creek Hatchery not only a cutting edge facility for producing salmon, but also an incredible facility for educating the next generation of salmon biologists and managers.



Photo Credit: Debbie Preston

The hatchery holding pond has been upgraded to use recycled water.



Photo Credit: Debbie Preston

The new facility will offer classroom space for students to take part in salmon education.

NISQUALLY RIVER FOUNDATION TURNS 20!

An average day at the Nisqually River Foundation (NRF) is often hard to describe as our schedule revolves more around the seasons themselves than anything else. Spring may find you at the Nisqually River Council (NRC) learning about the 3-D modeling of forests. Summer could have you joining Executive Director Justin Hall on his way up the mountain to give a forest tour. Fall might have you hooking up a trailer headed to a student tree planting. The cold of Winter could see you at a staff meeting where everyone is complaining about how the ice on the roads won't let them do all the programming they have planned! Essentially, there's never a dull moment and when looking back at the past two decades of work that rings true in all the best of ways.

When the NRC was formed by the State Legislature in 1987, funding was provided through the Department of Ecology with the goal of bringing together the watershed's stakeholders around a shared vision of collaborative local conservation. Over a decade later faced with budget cuts, discontinued funding, and a changing landscape (literally in the case of rivers and wetlands), the Nisqually Indian Tribe secured a grant from the Washington State Department of Fish and Wildlife to bring staff back to the Council in 2003. A year later, in the hopes of securing long-term funding with the ability to apply for grants, fundraise, and contract with other organizations, the NRF officially formed on April 1st, 2004 with funding provided by the legislature through the Department of Ecology.

Now as a fully fledged non-profit organization, the Foundation worked to not only staff the Council, but implement programming throughout the region. Reflecting on 20 years with NRF, Hall had this to say, "The Foundation has been involved in many projects as the non-profit arm of the Nisqually River Council from participating in environmental education through the Nisqually River Education Project, salmon recovery, water planning, and the Nisqually Community Forest. However our greatest success is helping create a forum where ideas and projects can be discussed



Photo Credit: Tristan Olson

NRF Staff, from the left: Davy Clark, NREP Program Director, Julia Fregonara, NREP Water Quality Program Coordinator, Justin Hall, Executive Director, Alex Zinck, AmeriCorps Environmental Educator, Tristan Olson, NRC Program Coordinator.

and where the overall knowledge of issues in the Nisqually watershed is increased." This idea of connecting with our community has been a guiding principle of NRF for the entirety of its existence.

In 2008, when the Nisqually River Education Project (NREP) joined the Foundation, the mission scope truly expanded to what we see today with NRF working to foster a healthy watershed through building partnerships, engaging volunteers, and providing educational opportunities. It wasn't long before programs such as the Nisqually Stream Stewards, an adult conservation class, joined the ever-growing list of NRF programs, requiring more staff to work towards a better and more sustainable future in the watershed. "The Foundation has been so successful," Hall added, "because we have been fortunate to have incredible people who have worked for us and dedicated themselves to our mission."

From when it started 20 years ago with one employee and a budget of \$100,000 to where it is today, with five staff members and a budget of over \$1 million, "The future of the Nisqually River Foundation will be in maintaining the high quality of work that the Nisqually River Council is involved in and helping pull together projects that help the Council meet the goals it set forward in the Nisqually Watershed Stewardship Plan" said Hall. Celebrating 20 years is an achievement and though our work is never done, it is work worth doing every single day.

AN ANNUAL CELEBRATION OF THE WATERSHED



Photo Credit: Tristan Olson

The Nisqually Indian Tribe's Canoe Family performs for a crowd.

On the last Saturday of September, as Summer gives way to Fall, a celebration of community, culture, and history takes over Billy Frank Jr. Nisqually National Wildlife Refuge. This of course is the annual Nisqually Watershed Festival which brings with it an entire day of salmon, science, singing, and more! Now in its 34th year, the festival serves as a place to gather for all those who love the outdoors and wish to celebrate the unique wonders of the Nisqually Watershed.

This past year as staff, volunteers, and vendors hurried around setting up booths, tents, and food trucks a buzzing sense of excitement could be felt throughout the refuge grounds. Morning clouds gave way to rays of sunshine, smiling faces beamed across unfolding tables, and the smell of barbecuing salmon made more than a few glance at their watches with thoughts of lunch time. Just as the anticipation reached its crescendo, the sound of bagpipes and drums from the Olympia Highlanders reverberated through the Refuge announcing the beginning of the day. From that moment on singing, laughing, and conversations filled the air as over 1,100 attendees joined in the festivities!

Families crowded around arts and craft booths where kids painted elaborate designs on wooden salmon while others painted real salmon to then print on t-shirts and posters. In the background of these booths, soft-tipped arrows flew at pictures of invasive species, non-profits from around the region connected with community members, and parents helped their kids climb inside FIN the Migrating Salmon! Not far from "Critter Corridor" the Refuge's education center was bursting with activity as kids and parents alike let their inner child out to hold

geckos, look at snakes, and examine giant bugs in the "Insect Extravaganza".

Speaking of bugs, this year's poster contest theme was "Insects of the Watershed" and the imaginative artwork of local students was put on display at the mainstage so that everyone could enjoy the butterflies, bumblebees, and other illustrations in between performances from the Nisqually Indian Tribe Canoe Family and an interactive play about salmon ecology! As festival goers lined up for bowls of chowder, plates of salmon, and other mouthwatering fairfood, the day's activities continued with trivia, local musicians, and nature walks alike!

It truly is a joy to be part of such an incredible community event and while there are too many moments to capture in such a short time (did we mention salmon and dogfish dissections?) we're grateful to be able to connect with our community and share our love for science, nature, and the history and people who make Nisqually all that it is. While 2023's festival has come and gone, we're already counting down the days till next year when we get to celebrate 35 years of sharing in the wonders of Nisqually with our community.

So remember to mark your calendars for Saturday September 28th, 2024 because just as the leaves brighten to bursting reds and oranges, just as the salmon swim and spawn along the mainstem and tributaries of the Nisqually River, so too does the Nisqually Watershed Festival announce the beginning of Fall! We can't wait to see you all again soon!



Photo Credit: Tristan Olson

Guests take "aim at invasives" with the US Fish & Wildlife Service's Fishing and Aquatic Conservation trailer.



Photo Credit: Tristan Olson

Luz Gaxiola interacts with the crowd during "The Life of a Salmon" clown show on the Mainstage."

NISQUALLY RIVER EDUCATION PROJECT UPDATE: STEWARDSHIP IS A COMMUNITY ACTIVITY!

Stewardship is a community activity. At the Nisqually River Education Project (NREP), we provide students from all over the Nisqually Watershed with service-learning projects that link Washington State learning standards with local environmental issues. Students come together to learn about the pressing environmental issues of our region while at the same time taking part in actions to create solutions. They meet the people leading the way towards salmon recovery, and students are asked to bring their own stories of stewardship back to their families and communities.

Each school year we work with thousands of students who take part in NREP programs to deepen their connection to the watershed. By partnering with local school districts, schools, and teachers, we ensure that student learning in the field supports their classroom learning. We prepare students for their time in the field by visiting their school prior to each field trip for hands-on classroom learning.

We work diligently to reduce barriers to participation. All of our programs are free. Additionally, by providing bus transportation funding and substitute teacher funding, we ensure that any teacher in the watershed can take part in the hands-on learning opportunities we provide.

This school year our efforts have been focused on five key stewardship activities:

1: Water Quality Monitoring: Each classroom adopts a water quality monitoring site near their school to help ensure a healthy watershed for salmon and other wildlife. Our educators teach students to conduct a variety of chemical tests to perform a “check-up” on their stream’s health.

2: Riparian Restoration: Partnering with Nisqually Land Trust, we bring students to vital salmon habitat restoration projects throughout the watershed. Students learn how to plant trees and shrubs and the importance of a healthy riparian corridor.

3: A Day at a Salmon Hatchery: This fully immersive day of service-learning gets students working side-by-side with hatchery employees. Students assist staff in all aspects of hatchery operations for the day.



Photo Credit: Kim Williams

Salmon Dissection at Cougar Mountain Middle School.



Photo Credit: Tristan Olson

Students from throughout South Puget Sound attend Student GREEN Congress at The Evergreen State College.

4: Nearshore Investigations: Students visit the beautiful shorelines of Puget Sound to learn about the incredible diversity of life found where land and water meet.

5: Salmon Viewing: While exploring McLane Creek Nature Trail, students have the opportunity to see spawning chum salmon, collect data about their spawning behaviors, and learn about their incredible migrations.

The learning that happens during these trips broadens students’ vision of what the natural world is and how much they are a part of it. These students’ words are the best at capturing the meaning that they draw from their time in the field with us. Below are just some of the stories, thoughts, and comments students have shared with us this school year:

After planting a Douglas fir tree a student ran up and demanded that we come look at his tree. He explained “I am going to come back to this tree every year to check on it. Even when I’m all grown up, I’ll be back every year to see it become part of the forest”.

When finishing up a day of planting trees and shrubs in the Ohop Valley we asked students to reflect on the experience of participating in riparian restoration by summarizing how they felt in one word. One student shared that it made them feel “Powerful”.

After finishing up a salmon dissection, we packed up our tools and headed out of the school. As we left the school we heard a student loudly exclaim “I LOVE Salmon!” with so much enthusiasm that it echoed through the hallway.

Nisqually Indian Tribe



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(360) 438-8715
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Do you love the outdoors? Do you want to learn more about Pacific Northwest ecology? Are you interested in joining local environmental organizations, but don't know where to start?

If you answered yes to any of these questions, then **Nisqually Stream Stewards** may be just the place for you! Come join our **free** monthly conservation education class and learn about the Nisqually Watershed with local professionals. Our goal is to help interested citizens gain the skills necessary to become caretakers of the watershed, while building a sense of community. Join today!