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Culvert Ruling Benefits Salmon, Everyone

By Billy Frank Jr.
NWIFC Chairman

Salmon and everyone who lives in the state of Washington are the biggest beneficiaries of the recent federal court ruling requiring the state to fix fish-blocking culverts under its highways. Judge Ricardo Martinez’s summary judgment in the culvert case was clear. The tribes’ treaty-reserved right to harvest salmon also includes the right to have those salmon protected so they are available for harvest, not only by the tribes, but all citizens.

We are pleased that the state has returned to the negotiating table to work out an effective remedy to fix the culverts that can be put into action quickly. More than 1,100 state-owned culverts under highways are blocking more than 2,300 miles of good instream salmon habitat, according to the state’s estimates.

When we fix those culverts, we can expect to see more than 200,000 additional adult salmon returning to Western Washington. Those fish will be harvested by everyone, both Indian and non-Indian.

The tribes did not want to file this suit. We were forced by the state’s refusal to follow and enforce its own laws aimed at protecting salmon habitat. We’ve seen salmon runs plummet over the past 30 years, despite the best intentions of the state to protect habitat. Every year, more culverts will fail, and if we don’t fix them at a faster rate than they fail, the problem will only get worse.

We simply could not wait the 100 years that the state estimated it would take to fix the culverts. That would have spelled the end of the salmon.

In the past two decades, we’ve ratcheted down harvest to the point where we can no longer make up for lost natural salmon production by further reducing catches. We’ve also reformed hatchery practices so that these programs are now effectively contributing to the recovery of wild salmon.

What we haven’t done during the past 20 years is tackle the biggest reason for declining wild salmon runs: lost and degraded habitat.

This case puts the spotlight on salmon habitat, right where it belongs. Without good habitat, and access to that habitat, there will be no salmon recovery.

While there is a financial cost to fix the culverts, there is a much higher cost to be paid by future generations if repairs are delayed.

I hope this legal victory for the treaty tribes will continue to help build the political will we need to bring back the salmon and make sure they have a home when they get here. I know that fixing the culverts will only add to the success of ongoing salmon recovery efforts.

Cooperation has long been the key to natural resource management in Washington. We look forward to sitting down together with the state to develop a comprehensive plan for fixing the culverts that can be put into action quickly. The salmon can’t wait much longer.

NWIFC News

NWIFC News is published quarterly on behalf of the treaty Indian tribes in Western Washington by the Northwest Indian Fisheries Commission, 6730 Martin Way E., Olympia, WA 98516. Free subscriptions are available. Articles in NWIFC News may be reprinted. For more information: NWIFC Information Services in Olympia: (360) 438-1180; Mount Vernon: (360) 424-8226; Kingston: (360) 297-6546; or Forks: (360) 374-5501. Visit the NWIFC Web site at www.nwifc.org.

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On The Cover: A nearly mature bald eagle rides the air currents of the Pacific coast near LaPush. After years of declining numbers, eagle populations have rebounded following a ban on the pesticide DDT, and were recently removed from the Endangered Species list. Their wing span can be more than 7 feet and they are covered with at least 7,000 feathers. Photo: D. Preston
Judge Rules In Favor Of Tribes On Culverts

Co-managers to work on solutions to existing culverts

In a landmark treaty rights ruling last month, federal Judge Ricardo Martinez ruled that state culverts that block fish and diminish salmon runs violate Indian treaty fishing rights. The tribes and state are now sitting down together to develop a comprehensive remedy for repairing the culverts quickly.

In his ruling, Judge Martinez wrote: “… this Court finds that the Treaties do impose a duty upon the State to refrain from building or maintaining culverts in such a manner as to block the passage of fish upstream or down, to or from the Tribes’ usual and accustomed fishing places. This is not a broad ‘environmental servitude’ or the imposition of an affirmative duty to take all possible steps to protect fish runs as the State protests, but rather a narrow directive to refrain from impeding fish runs in one specific manner. The tribes have presented sufficient facts regarding the number of blocked culverts to justify a declaratory judgment regarding the State’s duty to refrain from such activity. This duty arises directly from the right of taking fish that was assured to the Tribes in the Treaties, and is necessary to fulfill the promises made to the Tribes regarding the extent of that right.”

In Western Washington alone, more than 1,100 culverts owned by the state Department of Transportation (DOT) and Department of Natural Resources block more than 750 miles of salmon stream and 2.5 million square meters of habitat.

In 1995, DOT and the Washington Department of Fish and Wildlife told the Legislature that culvert correction was “one of the most cost-effective habitat restoration strategies available,” and that “[t]he benefit/cost ratio increases as the number of culverts repaired per year increases.”

It was estimated that repairing the fish-blocking culverts on the state’s timetable could take as long as 100 years, but by then, few, if any salmon would be left.

Makah Tribal Council Condemns Unauthorized Whale Hunt

Five Makah tribal members were arrested Sept. 8 by the U.S. Coast Guard after an unauthorized gray whale hunt in the waters east of Neah Bay. The men later were turned over to tribal police where they posted bail and await appearance in tribal court as well as possible federal charges.

“The Makah Tribal Council denounces the actions of those who took it upon themselves to hunt a whale without the authority from the Makah Tribal Council or the Makah Whaling Commission. Their action was a blatant violation of our law and they will be prosecuted to the fullest extent of the law,” the Makah council said in a Sept. 10 statement.

Tribal representatives traveled to Washington, D.C., to assure the state’s congressional delegation and federal agencies that they were cooperating fully with National Marine Fisheries Service in their investigation of the incident and will also file charges against the men in tribal court.

The tribe legally harvested a single gray whale in 1999 under a federally approved whale harvest plan. In 2002, a federal court ruled that the tribe had to obtain an exemption from the Marine Mammal Protection Act (MMPA).

The ruling contradicts language in the act that specifically states that it is not meant to abrogate any Indian treaty. The Makah Tribe’s right to whale was reserved in the 1855 Treaty of Neah Bay.

The gray whale was removed from the Endangered Species list in 1994. Their populations are near historic highs. Since 1998, the Makah Tribe has received three five-year quotas from the International Whaling Commission to harvest up to five gray whales a year. The tribe was in the final stages of obtaining a waiver from the MMPA when the unauthorized hunt occurred.

“There are those who say this process should be halted or delayed now, but the unlawful actions of a few should have no bearing on this process and there is no indication that’s the case,” said Micah McCarty, Makah tribal council member. “Our treaty right does not change because of the actions of a few tribal members.”

“The Makah Tribe is a sovereign nation,” said Billy Frank Jr., chairman of the Northwest Indian Fisheries Commission. “Treaty Indian tribes in Western Washington fully support the Makah in their efforts to exercise their treaty-reserved right to whale.”

“This waiver process is painfully convoluted and time-consuming. At best, we’ll have a waiver by 2010, but we’re going to persevere,” McCarty said. “We are a law-abiding people and we will not tolerate lawless conduct by any of our members. This incident should not be used to defame the governing body of a treaty tribe.”

Lower Elwha Klallam Tribe Geographic Information System analyst Randall McCoy observes old culverts in the Salt Creek drainage. Photo: T. Royal
Juvenile coho salmon are disappearing before they can migrate out of deep South Puget Sound, according to results of a three-year acoustic tracking study by the Squaxin Island Tribe. Only six of 175 young wild and hatchery coho fitted with acoustic tags were tracked beyond the Tacoma Narrows Bridge.

“That is an incredibly high dropoff,” said Scott Steltzner, fisheries research biologist for the tribe. “Three to 4 percent of all South Puget Sound coho survive their entire three-year life cycle. We know that some juvenile salmon die along the way, but there shouldn’t be this drastic of a drop so soon.”

In addition to tagging hatchery coho from the tribe’s net pen facility in Peale Passage, the tribe tagged and released wild coho from Mill Creek in Mason County. Fifteen receivers arranged between the Tacoma Narrows Bridge and Oakland Bay near Shelton tracked the tagged coho as they left deep South Puget Sound.

The study shows that fish disappear quickly as they swim north toward the narrows. Most of the tagged coho were detected by receivers near their release point, but only 25 made it halfway to the bridge.

The low number of coho surviving the relatively short journey points to an imbalance in the local ecosystem.

“We know that a lot of coho aren’t making it very far, but we don’t know why,” Steltzner said. Possible causes could include a lack of food for the young fish or an overabundance of predators.

“If there aren’t enough fish for the coho to eat, or there are too many fish that eat coho, they aren’t going to have much of a chance,” he added.

The Squaxin Island Tribe also tracks coho populations using smolt traps and spawning surveys. Smolt traps are devices that allow the tribe to safely capture and count juvenile salmon as they migrate downstream to sea. Spawning surveys are conducted to count returning adult salmon.

“We get a good look at these salmon at both ends of their lives, but what happens in the middle is still a mystery,” Steltzner said.

“If we’re seeing this many coho die so soon, Puget Sound is definitely not working the way it should,” said Andy Whitener, natural resources director for the Squaxin Island Tribe.

“You can’t assume that this kind of drastic die-off is natural. This data shows the urgent need to find out why these fish are dying and how Puget Sound is ailing.”

– E. O’Connell

Top: Will Henderson, enhancement manager, watches as juvenile coho salmon are loaded onto a barge that will take them to the tribe’s net pen facility in Peale Passage.
Above: Joe Peters, harvest management biologist for the Squaxin Island Tribe, measures a juvenile coho out-migrating from Goldsborough Creek in Shelton.
Left: A close-up of the acoustic tag inserted in the fish. Photos: E. O’Connell
Skokomish River Estuary

After 60 Years, The Tides Flow Again

The huge earth-moving machines on the Skokomish tidelands in mid-September seemed out of place for an estuary restoration project. But by using them to remove a mile-long 60-year-old earthen dike, it is expected this 108-acre parcel will soon look like it should – islands of sediment that are flooded during tidal surges, creating good natural fish habitat.

Work on the project began in earnest this summer to restore the Skokomish River’s estuary by removing nearly 5,000 linear feet of dikes. The project is located just west of the river’s mouth, within the tribe’s reservation boundaries.

In addition, 3,000 linear feet of raised concrete walkway has been installed, allowing tribal members to access harvesting and ceremonial areas through a forested wetland complex. The elevated walkway will allow the tides to flow freely within the estuary.

The dike system, built in the early 1940s, has prevented the delta from receiving a natural tidal flow, severely affecting the health of the estuary and eliminating important juvenile salmon rearing habitat.

“Removal of the dikes will enable nutrients to flow through the area and allow for a more natural restoration of the property, as well as benefit finfish and shellfish,” said Keith Dublanica, the Skokomish Tribe’s senior lands planner. “The tribe wants to see the river flow again through the delta.”

This project is the first part of a multi-phase effort to restore more than 300 acres of the estuary to its historic conditions, including the restoration of nearby Nalley Island next year.

– T. Royal

Above: Tribal members Tom Strong and Kris Miller observe the tide flooding the Skokomish River estuary for the first time in 60 years. Just hours earlier, the area looked like a field of grass with scattered ponds throughout.

Left: Excavators spent two days removing the earthen dikes in sections within the estuary to allow the tides to flood the area.

Photos: T. Royal

Paddle to Lummi

Canoe families from all over the Northwest traveled to the Lummi Nation this summer for the annual Intertribal Canoe Journey. The paddlers gathered in a flotilla of about 80 canoes, waiting to be invited ashore in the spirit of the tl’aneq’ (potlatch). Thousands of visitors celebrated the arrival of the canoes, followed by a weeklong potlatch – a tradition of ceremonial gift-giving – at Lummi’s Stommmish Grounds. This was Lummi’s first potlatch since 1937. The annual Canoe Journey was revived in 1989 with the Paddle to Seattle.

Photo: K. Neumeyer
Elwha Studies Lamprey Behavior

The lamprey, an eel-like fish with leech-like habits, has a role important to the marine environment.

The Lower Elwha Klallam Tribe fisheries staff will be exploring that role next year with a lamprey study on the North Olympic Peninsula.

The tribe recently received a $74,000 grant from the U.S. Fish and Wildlife Service (USFWS) for the study. The project will look at lamprey’s distribution, migration patterns, genetics and habitat preferences in the lower Elwha River and watersheds along the Strait of Juan de Fuca.

“Lamprey were once as abundant as salmon in the Elwha River but they suffered the same environmental pressures during the past 100 years,” said Larry Ward, the Lower Elwha Klallam Tribe’s fisheries biologist. “The lamprey is a traditional food for the tribe. Its role in the marine ecosystem is valuable.”

Not only is lamprey an important food for salmon, it also is preferred by sea lions and seals. This helps reduce predator pressure of marine mammals on salmon, Ward said.

Because the juveniles are filter feeders, lampreys help preserve water quality for other species.

To help complete the two-year project, the tribe will collaborate with USFWS, the Siletz Tribe in Oregon, U.S. Geological Survey, students from Peninsula College and local groups, such as StreamKeepers and the North Olympic Salmon Coalition.

This study is part of the overall management plan for the restoration of the river’s ecosystem.

Two hydroelectric dams built on the river in the early 1900s – the 108-foot Elwha Dam and 210-foot Glines Canyon Dam – are expected to be removed within the next 10 years. The dams have radically changed the characteristics of the river, impeding its rich habitat.

– T. Royal

Lamprey have a mouth that clings to other fish. *Photo: D. Preston*

Lamprey Fast Facts

- Three types of lamprey reside in the region: Pacific (*Lampetra tridentate*), river (*Lampetra ayresi*) and western brook (*Lampetra richardsoni*).
- A lamprey has no true fins, jaws or bones. It can grow up to 30 inches in length and weigh more than a pound.
- The lamprey is very smooth and slimy to the touch. Its mouth is adapted for clinging and sucking.
- Lamprey reside from Baja California to the Bering Sea.
- Like a salmon, the Pacific and river lamprey are anadromous – they are born in freshwater streams, migrate to the ocean, and return to fresh water as adults to spawn. Western brook lamprey spend their entire lives in freshwater.

Squaxin Island Tribe, City Of Shelton Develop Water Plan

The Squaxin Island Tribe and the city of Shelton are joining together to protect stream flows while planning for the city’s growth.

The city and the tribe plan to jointly monitor water resources and develop a groundwater model to provide a scientific basis for future decisions on how water is used.

“The objective is to find a way to safeguard streamwater for an abundant fishery while accommodating population growth and economic development,” said City Commissioner Dawn Pannell.

The joint monitoring and studying of south Mason County’s groundwater will include partnering with Mason County staff.

County Commissioner Lynda Ring-Erickson said she welcomes this agreement and the opportunity to work together.

“The work should be a platform on how water is used throughout Mason County,” she said.

A portion of winter rainfall infiltrates into the ground and provides drinking water and summer stream flow. Wells and streams are interconnected – when water is withdrawn from wells, there is less water in nearby streams.

A groundwater model will be used to identify where and how to take water from wells with as little impact as possible on stream flows. The model will provide a nearly real-time assessment of the impact of city use on stream flows.

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Water isn’t a static resource; its availability changes day to day and year to year,” said John Konovsky, environmental program manager for the Squaxin Island Tribe. “To manage water for mutual benefit, we need to continually look at what is going on.”

Shelton is the largest water supplier in Mason County and one of the largest in deep South Sound. Goldsborough, Johns and Mill creeks – each significant fish-bearing streams near Shelton – will be included in the study.

– E. O’Connell
Spot shrimp are an elusive bunch that live 250 feet below the surface, making it hard for biologists to study them.

But with a three-year shrimp-tagging project under way in Elliott Bay, the Suquamish Tribe is trying to unveil the mysteries of the wily crustaceans.

Since June 2006, tribal staff have been capturing, tagging and releasing up to 3,000 shrimp a year. Biologists hope the tagged shrimp will be harvested in tribal, commercial and sport fisheries, from which they will collect information on shrimp growth and migration patterns over time.

“Spot shrimp are susceptible to overharvest,” said Paul Williams, the Suquamish Tribe’s shellfish biologist. “Shrimp pots can potentially lure all the shrimp in the surrounding area from their hiding places, so we have to set quotas low enough to prevent that. The problem is, right now, we can’t estimate the population size and we don’t fully understand their life history so all we can do is set quotas on past catch performance. That can be risky. Catch can be good but then suddenly plummet faster than we can react.”

Managers are cautious in setting spot shrimp quotas. In most areas, catch seems to be steady and the populations healthy. But they’ve disappeared from Port Townsend Bay – possibly replaced by other shrimp species – and catch has drastically declined in other areas.

“We don’t want to wait until more areas are lost before we figure out their life history,” Williams said. “That’s the history of fisheries management worldwide – fish ’til they’re gone and then try to figure out what happened.”

Biologists know little about how long spot shrimp live in Puget Sound, whether they survive after spawning and how fast they grow.

“This tagging study will fill in some of the gaps in our knowledge,” Williams said. “We’ll also be able use the techniques to estimate the shrimp population size in an area.”

Spot shrimp are big, tasty, fresh and wild – far superior to their imported, frozen farmed cousins. With shorter spot shrimp seasons due to their increasing popularity, and an ever increasing human population, the need to focus on management improvements is widely agreed upon.

Fishermen harvesting tagged shrimp are asked to call the number on the tag to provide general information about the shrimp. There is also a reward.

The shrimp study started in June 2006 and will continue through 2009.

– T. Royal
Pink salmon are smaller and less popular among diners than sockeye and chinook, but they are an important part of a tribal fisherman’s livelihood, because they are so numerous. The fish also provide a huge fishery for non-Indian sport fishermen.

Pinks have a shorter life cycle than other salmon and return to spawn after two years, primarily in odd-numbered years.

With huge runs typically in some Puget Sound tributaries, state and tribal co-managers structure pink fisheries to minimize impacts on other species such as chinook, which return to spawn about the same time. Puget Sound chinook are listed as “threatened” under the federal Endangered Species Act.

This year, unusually high pink returns were expected in Central Sound, but many evaded fishermen as the fish headed to their home rivers. In the Puyallup watershed, the enormous run of pinks that reached the White River became trapped below a diversion dam, unable to continue upstream.

Low pink returns were expected to the Skagit River, but the actual numbers were even lower. Still, in North Sound, pink fisheries helped some fishermen make it through a season in which high-value Fraser River sockeye returns were poorer than ever.

The following stories highlight some of the challenges tribal fishermen and resource managers faced with the pink salmon runs this season.

Pink Fast Facts

- The traditional name for pink salmon in the Lushootseed language is hedu.
- Scientific name: Oncorhynchus gorbuscha
- Common names: Humpy, humpback salmon.
- Males develop humped backs, hooked jaws and reddish-yellow sides when spawning. Females are more greenish.
- Pinks begin their downstream movement almost immediately after emergence from the gravel, moving quickly to nearshore areas. After about 18 months at sea, pinks return to spawn.

Pink salmon crowd below a dam on the White River.

A lack of trucks recently caused a huge backup of pink salmon on the White River. There weren’t enough trucks available to transport the historically large run of pink salmon from a fish trap below a diversion dam on the river near Buckley.

Fish need to be collected from the trap and trucked above the impassable Mud Mountain Dam. The risk of a massive die-off increased daily as the pink salmon – along with coho and chinook salmon – crowded below the dam.

Crowded conditions can deplete the oxygen in the water, or the fish can simply run out of energy and die before they can be moved.

“Salmon only have so much energy,” said Russ Ladley, resource protection manager for the Puyallup Tribe. “If they are delayed too long, salmon will not have enough reserves and could die before they spawn.”

Normally, two tanker trucks transport fish above Mud Mountain Dam, but this year’s historic pink run overwhelmed the system.

“It’s unfortunate because the really good spawning habitat is high in the watershed, above all the development and urbanization,” Ladley said.

For the third straight pink spawning cycle, an abnormally large run has returned to spawn in the Puyallup watershed. In 2003 almost 250,000 pinks returned; in 2005 more than 600,000 pinks came back to spawn. The tribe expects an even larger return this year.

“We could see close to a million pink salmon return to the watershed, including more than 100,000 to the White,” Ladley said.

“We saw the earliest pink ever in the river this year. When you see pinks in June – a month early – you know you’re in for a big run.”

The tribe tracks the salmon as they move through the salmon trap on the White River and counts them throughout the watershed during spawning surveys.

“The more we know about where salmon spawn, the better job we can do protecting their habitat and making sure there are strong populations in the future,” Ladley said. “Salmon need healthy habitat to survive and we need good information to protect and restore habitat. This run is entirely wild, so it deserves our best effort for protection.”

– E. O’Connell
Atop the 58-foot-long fishing boat Admiral, Suquamish fisherman Ray Forsman scans Bainbridge Island’s shoreline for a sign, any sign, of pink salmon.

It was expected to be a big year for pinks, with biologists predicting a return of nearly 3 million to Puget Sound. To gauge the return through Central Sound, the Suquamish Tribe conducted a test fishery in August. But with the exception of a one-time catch of 16,000 pinks, Forsman had a difficult time finding them during what was the expected height of the run.

“The algae are hiding the fish,” he said in frustration while studying the water’s surface. Puget Sound waters are typically clear but the past few years, Forsman found thick algae clouding the waters. “Finding pinks in algae-infested waters is a challenge. It’s not just this year; it’s been happening more and more the past few years.”

Despite the limited success of the test fishery, a larger than normal number of pinks returned to the Puyallup watershed through Central Sound.

“The tribe has never conducted a test fishery for pinks in this area, so this was exciting, especially with the expected high run,” said Jay Zischke, Suquamish marine fish program manager. “Our main question: where could we fish effectively without interfering with chinook that run at the same time as the pink salmon?”

“We won’t know for sure until the end of September how many pinks have returned to spawn,” Zischke said. “My suspicion is that the run was smaller than we predicted, and again, perhaps because of poor ocean survival.”

– Ray Forsman, Fisherman, Suquamish Tribe

Pinks Elude Central Sound Test Fishery

Pink salmon returns to British Columbia’s Fraser River were lower than anticipated, but still large enough to provide some harvest opportunity.

The fishery saved the season for some North Sound tribal fishermen who were unable to fish for sockeye because of devastatingly low returns to the Fraser. (See related story, page 10.)

About 10 million pinks headed back to Fraser River this year – fewer than the 19 million forecast, although enough to meet escapement.

Unlike sockeye, pinks are small and fetch a low price per pound, so plentiful numbers are required to make fishing for them worthwhile.

“Fishing isn’t lucrative anymore,” said Cliff Cultee, a fisherman and member of the Lummi Natural Resources Commission. “Younger people see that and aren’t expecting to make a living at fishing.”

– K. Neumeyer

North Sound Tribes Depend On Pinks
Fraser Sockeye Too Few To Fish

Sockeye, seen here on the spawning grounds in British Columbia, are a high-value fish important to the livelihoods of tribal fishermen. Returns were devastatingly low this year to North Sound rivers. Photo: NWIFC file

Tribes in Western Washington with treaty fishing rights for Fraser River sockeye were hit hard when returns came in far lower than expected.

Because sockeye command a high price per pound, tribal fishermen rely heavily on the income. But without a sockeye fishery, some tribal members wondered how much longer they’d be able to support themselves as fishermen.

There were no Fraser sockeye fisheries for the Swinomish, Nooksack, Lummi, Suquamish, Port Gamble S’Klallam, Jamestown S’Klallam, Lower Elwha Klallam, Tulalip and Makah tribes.

“Catches and prices overall are way down, putting our 4,500 Lummi tribal members at an economic disadvantage,” said Cliff Cultee, a fisherman and member of the Lummi Natural Resources Commission. “No one is making close to what they earned in the 1980s and the early ’90s.”

Poor ocean survival due to warm water temperatures and lack of food supply are likely the main causes of the low sockeye returns.

“All the Fraser sockeye runs came in low,” said Lorraine Loomis, the tribal representative on the Fraser River Panel of the Pacific Salmon Commission and fisheries manager for the Swinomish Tribe. “None of the 4-year-olds came back. Never in my history have I ever seen every run down. It’s depressing.”

Fraser River fisheries are managed under the Pacific Salmon Treaty between the United States and Canada. The forecast had been for more than 6 million sockeye to return from the Pacific Ocean, but test fisheries showed only 1.6 million. Keeping directed sockeye fisheries closed was necessary to enable enough fish to make it to the spawning grounds.

– K. Neumeyer

Baker Sockeye Take Time To Reach Dam

Baker River sockeye take longer than researchers expected before heading upriver to spawn, according to a study by the Upper Skagit Tribe.

Tribal technicians tagged sockeye at various points in their journey upstream to the Upper Baker River fish trap at the foot of Baker Dam. Fish are collected in the trap, then trucked over the dam to Baker Lake. Researchers had expected the fish to reach the trap within a day’s time.

“We thought that fish entering the Baker River from the Skagit would just keep moving, but they milled around in front of the trap for 10 to 12 days,” said Jon-Paul Shannahan, a natural resource biologist for the Upper Skagit Tribe.

For decades, two dams in the Baker River have made natural migration to spawning grounds impossible for the sockeye. The fish are transferred by truck from the trap below Upper Baker Dam to the lake or artificial beaches for spawning.

The tagging study also evaluated the best spots for harvesting sockeye, which was something of a challenge this season, with returns falling far short of the forecast of 12,000 fish.

“We’ll be lucky if 3,000 fish return,” Shannahan said.

Because the run did not meet escapement needs for natural spawning, the tribe did not harvest any sockeye. It’s a hardship for the tribe to go without a sockeye fishery, said Scott Schuyler, policy representative for the Upper Skagit Tribe.

“We’ve hardly had any sockeye for the last 20 years,” he said.

– K. Neumeyer

Upper Skagit technician Darryl Schuyler tags sockeye to see how long fish take to reach the Upper Baker River fish trap. Photo: Upper Skagit Tribe
More than 6,000 chinook are expected to return to the White River this year – the highest number since the 1940s – due mostly to favorable ocean conditions and successful tribal enhancement programs.

“I’d like to say that these chinook are turning the corner to recovery, but most of the fish coming back aren’t the result of natural spawning,” said Russ Ladley, resource protection manager for the Puyallup Tribe.

White River chinook are part of the Puget Sound stock listed as “threatened” under the federal Endangered Species Act.

About one-fourth of the White River chinook returning this year descend directly from naturally spawning parents. Most of the returning fish were produced at the Muckleshoot hatchery, and released from there or Puyallup acclimation ponds high in the watershed.

Twenty years ago, White River chinook were near extinction. In 1986, only six chinook returned.

With the establishment of the Muckleshoot Tribe’s hatchery in 1989, the chinook run began to rebuild slowly. Every winter, the Puyallup Tribe transfers as many as 800,000 juvenile chinook from the Muckleshoot hatchery on the White River to the acclimation ponds. About 400,000 additional chinook are released directly from the hatchery.

“There aren’t a lot of wild chinook returning, but this is still a success,” Ladley said.

“The original purpose of these enhancement projects was to save White River chinook from disappearing altogether and for now, we’ve done that,” he added. “These fish face a lot of obstacles throughout their life cycle, including altered rearing habitat, elevated water temperature and pollutants.”

“Hatchery intervention will continue to be essential for rebuilding the White River spring chinook stock,” said Richard Johnson, White River hatchery manager for Muckleshoot.

Stillaguamish Program Supplements Wild Chinook

On a sunny August morning, natural resource staff members from the Stillaguamish Tribe waded chest deep into the North Fork Stillaguamish River, pulling nets to catch wild chinook salmon.

They carefully sorted through their nets, tossing back suckerfish and most of the male chinook salmon.

“We already have enough bucks,” said Kip Killebrew, tribal enhancement biologist. The tribe’s goal was to capture 70 male salmon (bucks) and 65 females (hens) to use for hatchery broodstock.

While not a replacement for wild runs, hatchery production is one of the keys to restoring ailing salmon populations. In the North Fork Stillaguamish, as many as half of the returning chinook salmon are hatchery fish. Every year, natural resource staff members from the Stillaguamish Tribe, assisted by volunteer groups, capture broodstock to ensure sustainable runs may be harvested in the future.

“The tribe began its wild stock supplementation program in 1980,” said Tribal Chair Shawn Yanity. “Our goal is to have a functioning ecosystem that can support wild runs on its own. Our hatchery chinook are indistinguishable from their wild-spawned cousins in both timing and size at migration.”

The tribe marks hatchery fish with coded wire tags and clips adipose fins so researchers and fishermen can tell the difference. The coded wire tags enable Killebrew to examine hatchery fish that return to the North Fork to learn about where they’ve been since their release and how long it took them to come back.
For the past several summers, Makah tribal member Polly McCarty has shared the natural rhythms of Neah Bay with visitors from all over the world, as a natural resources interpreter perched on the lookout of Cape Flattery.

Cape Flattery occupies the most northwest point in the lower 48 states. This draws thousands of visitors each year just to say they have been there. The Makah Tribe, however, hopes to enrich their visit with descriptions of the cultural and natural resources visitors are seeing.

“There are things I learned from my elders and ancestors that I’ve gotten to experience for myself being out here so many hours each day,” McCarty said.

“For instance, when there was a tropical storm hitting Hawaii, I noticed the sea lions weren’t out on the rocks and the seabirds were quiet and not active at all,” she said. “I knew about the tropical storm from TV, but my ancestors knew about it from watching the animals and birds.”

McCarty helps visitors identify seabirds, points out sea lions on rocks and talks about the cultural significance of Tatoosh Island, which is visible from Cape Flattery.

This is the seventh summer the Makah Cultural and Research Center (MCRC), in partnership with Olympic Coast Marine Sanctuary, has provided tribal members as interpreters at the Cape Flattery trail seven days a week. “We want to have one-on-one interaction with visitors about our natural resources, history and culture,” said Janine Bowechop, MCRC director. “It’s so much better than having a third party re-interpret our culture.”

One such interaction was a bus shuttle to the Cape Flattery trailhead during recent road construction, paid for by the construction company. Tribal member Greig Arnold saw an opportunity to further educate visitors by having knowledgeable Makah bus drivers take them on the 20-minute ride. More than 200 people used the shuttle every day.

Next summer, the tribe plans guided canoe trips that will allow visitors to paddle alongside experienced guides.

“We’re also adding artist demonstrations at the museum,” Bowechop said. “Both activities will complement the museum tours and interpreters at Cape Flattery. The goal is to provide as much direct contact with visitors as possible, not just charge admission and never talk to them again.

“We’re trying to maximize the opportunities to tell our own story.”

– Janine Bowechop, MCRC Director, Makah Tribe
The Waatch River floodplain hosts a rich ecosystem, which the Makah Tribe strives to preserve. *Photo: D. Preston*

The diversity of ecosystems found on Makah tribal lands isn’t immediately evident, but a rich complement of interconnected natural worlds exists here. The Pacific Ocean intrudes on the Waatch River floodplain, creating a biological soup of life forms. Sand dunes shift and flow on the coast and old growth forests fill the skyline.

To protect these ecosystems, the Makah Tribe is vigorously attacking invasive weeds such as Scotch broom on the sand dunes, and yellow flag iris and tansy ragwort on the Waatch River floodplain. The Scotch broom can easily overwhelm the dunes, crowding out native plants.

“Because it’s an open area, it’s easy for weeds to invade,” said Jon Gallie, wildlife biologist and weed control coordinator for the Makah Tribe.

The Waatch River floodplain contains Pacific silverweed, which is still eaten today. The roots are cooked to remove the bitter taste, leaving a parsnip-like flavor. “We prepared silverweed for the Makah Diabetes luncheon recently,” said Makah tribal member Maria Pascua, language instructor for the Makah Cultural and Research Center.

The tribe’s weed management program includes monitoring and plans to prevent weed infestation before it starts, by planting a mix of native grasses and wildflower seeds. “We’re working with Rayonier Seed and will encourage timber companies to use it after logging to give competition to the weeds and benefit wildlife,” Gallie said. The tribe also is working with Clallam County to eliminate invasive weeds such as knotweed. Information to help landowners battle the invaders will be distributed in handouts and available on the Internet.

“We have to be vigilant about keeping weeds out of these ecologically rich areas,” Gallie said. “It would be hard to re-establish the native plant communities once they were lost.” – D. Preston

Rochelle Cooke, weed technician for Makah, removes Scotch broom from the dunes of Hobuck Beach between the Waatch and Sooes rivers – a rare place on the Olympic Peninsula where the river floodplain is close to dune ecology. *Photo: D. Preston*

The tribe worked with Clallam County this year to spray knotweed on the Sol Duc River, and in and around the city of Forks. Quileute crews continued work on the Dickey and Calawah rivers, and will attack a heavily infested Bogachiel River next year. “We know from the Dickey that it’s possible to get on top of the problem,” Geyer said.

Already, a herd of elk has been spending more time around the river than before, perhaps because of increased forage.

Knotweed removal also benefits elk by removing some of the cover used by predators such as cougars. – D. Preston

**Invasive Knotweed Attacked Around Quillayute**

The Quileute Tribe is protecting a sprawling Quillayute River system by attacking knotweed, an invasive non-native weed. Knotweed alters streamside habitat by replacing native trees and plants that contribute to water, fish and wildlife health.

This is the fifth year of the tribe’s knotweed eradication efforts in the tributaries to the Quillayute River. The tribe has seen progress on the Calawah and Sol Duc rivers, but other rivers are more difficult. “The Dickey and Bogachiel rivers are nightmares because they have floodplain areas where the river moves around, and there’s a lot of sandy soil where knotweed grows well,” said Frank Geyer, Timber/Fish/Wildlife biologist for the tribe. “The Sol Duc and Calawah are more confined and have less of the wide, sandy floodplains.”

Donna Penn, Quileute fisheries technician, sprays giant knotweed along the Calawah River. *Photo: D. Preston*
A farmer is working with the Swinomish Tribe to find ways for crops and salmon to co-exist.

When the Swinomish Channel was dredged in 1937, the spoils were used as landfill to create new farmland, at the expense of salmon habitat. In 2003, the Swinomish Tribe, with the Skagit River System Cooperative (SRSC), started installing self-regulating tide gates to restore the natural flow of water to the habitat. The tide gates give the Swinomish Tribe control over the amount of water that enters the channels.

“The tide gates are not as good as having an open channel, but it’s better than the undersized culverts we had,” said Todd Mitchell, Swinomish water resources manager. “The tide gates are flexible, so we can adjust the timing of the doors to allow the restored channels to reach a certain level without flooding the adjacent farmland. They allow water to flow in and out, providing habitat when the tide is in and facilitating drainage at low tide, especially during the rainy season.”

The concern from a farmer’s point of view is whether saltwater will interfere with the nearby crops. La Conner-area farmer Gail Thulen leases reservation land from the Swinomish Tribe. He is growing peas in rotation with potatoes and grain while the tribe monitors groundwater wells for saltwater intrusion.

So far the project goals are being achieved, said Steve Hinton, Restoration Director for SRSC. “We have seen only minor impacts from salt water.”

Berms around the slough act as a bathtub, keeping tidal water away from the crops. The water quality has improved dramatically, Mitchell said.

The tribe also is working with Thulen to grow sunflowers, which can be used to produce biodiesel. The tribe plans to sell the biodiesel at its gas station, and is considering converting its fishing fleet to the eco-friendly fuel, Hinton said. And the byproduct, sunflower cake, is valuable farm feed.

— K. Neumeyer

Generations

Members of the Sauk-Suiattle Tribe collected mountain goat wool from trees during springtime. In this photo taken around 1912, Susan Wawetkin Bedal is likely spinning that wool, or sheep’s wool, which she would have acquired from local herders. Also pictured are her daughters (from left) Lucy, Jean and Edith. Photo from the collection of Jean Bedal Fish and Edith Bedal.
Sometimes when Ramo Misanes and Toby Bill have been sitting quietly atop the rock formation between Three Fingers and Big Bear mountains, the goats come to them. Once, they looked over their shoulders to see three mountain goats climbing down from the rocks above them.

Another time, their co-worker, Sauk-Suiattle wildlife technician Erik Peterson, radioed from another location, telling them to look down. Directly beneath their perch were eight mountain goats bedding down to stay cool during the hottest part of the day.

Baby goats frolicked while the adult goats covered themselves with dirt to keep bugs away.

More often, the Sauk-Suiattle natural resource department employees look in the distance at meadows where snow has thawed on the mountains. With binoculars, they search for white specks that move.

The tribe has been surveying mountain goats in the Darrington area for the past three years to learn more about their productivity. Spring surveys are conducted in late May through early July – the time of year when kids are born. The aim is to estimate the number of young born each year and to identify whether juvenile mountain goats are dying in the first few months of their lives.

During the past 40 years, goat populations throughout much of Washington state plummeted. Theories abound about what caused this decline, but recent studies suggest that poor harvest management coupled with ease of hunter access may have had the greatest impact. Other factors include disease and predation. Although the Mount Baker herds to the north have rebounded in recent years, the population near Darrington has not changed. In addition to the mountaintop productivity surveys, the tribe has surveyed the population from helicopters and outfitted goats with Global Positioning System collars to track them via satellite.

For the past two years, the tribe’s ground surveys and helicopter counts have produced very similar age composition estimates for the Darrington herd, said Chris Danilson, wildlife program manager for the tribe.

Since 2004, researchers have counted between 50 and 100 goats in the Darrington area – about 25 percent of the historical numbers reported as recently as the 1960s.

“There is a strong cultural and historical tie between the Sauk-Suiattle Tribe and the mountain goat,” said tribal Chairwoman Janice Mabee. “It’s our totem animal and it sits atop the tribal crest. Our ancestors harvested mountain goats for food and collected wool for clothing. The diminishing goat population has left us without opportunities to use mountain goats for cultural and ceremonial purposes.”

In the 1990s, tribal members spearheaded efforts to obtain research grants to learn more about the shrinking goat populations and improve herd management. The efforts led to the development of the tribe’s wildlife program, which has provided training and work opportunities in field biology for tribal technicians such as Misanes and Bill.

His first time out on the mountain goat survey, Bill thought a five-mile hike sounded easy. Then he was handed a backpack full of gear and told to hike straight up. The effort was worth it, he realized after spending the day on top of the mountain, close to baby goats and the adults, which were bigger than he expected.

For Misanes, the surveys offered a chance to experience one of his tribal traditions. “I collected wool,” he said. “I’d never done that.”

– K. Neumeyer

Mountain goat populations in the Darrington area haven’t recovered from a decline starting 40 years ago. Photo: Sauk-Suiattle Tribe

Ramo Misanes, Sauk-Suiattle technician, looks for mountain goats near Darrington. Photo: K. Neumeyer

‘There is a strong cultural and historical tie between the Sauk-Suiattle Tribe and the mountain goat.’

– Janice Mabee, Tribal Chairwoman, Sauk-Suiattle Tribe

Sauk-Suiattle Follows Mountain Goats
Point Elliott Treaty tribes are harvesting bull elk from the Nooksack herd for the first time in a decade. Thirty permits were issued this season for tribal and state hunters to share, signaling a huge comeback for the long-suffering herd.

Scott Schuyler, policy representative for the Upper Skagit Tribe, harvested the first bull elk in late August, near the site of a historic tribal village in eastern Skagit County.

“This is 10 years in the making,” Schuyler said, while helping package elk meat for freezing. “It’s a really big deal for our tribe, because elk are so important to our culture.” The tribe will use the meat for subsistence and ceremonial purposes. Other parts of the animal, such as the hooves, may be used in tribal regalia.

In the 1990s, treaty and non-treaty hunters stopped hunting the Nooksack herd because its population was rapidly declining.

Now, as a result of restoration efforts by the tribes and the state of Washington, the herd numbers about 600, up from fewer than 350 in recent years. Twenty years ago, the herd numbered about 1,700 elk. Wildlife biologists determined that the herd now has an adequate bull-to-cow ratio to allow a hunt of 30 bull elk.

Tribal and state efforts to rebuild the herd have included relocating 98 elk from the Mount St. Helens area, projects to improve elk forage and a decade-long moratorium on hunting.

– K. Neumeyer