

Northwest Indian Fisheries Commission

# NWIFC News



Winter 2007/08

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# Bringing Focus

By Billy Frank Jr.  
NWIFC Chairman

It was a meeting long overdue.

Representatives of the 20 treaty Indian tribes in western Washington sat down in November for the first time in a public meeting with the entire Washington Fish and Wildlife Commission – the panel that sets policy for the state Department of Fish and Wildlife (WDFW).

As co-managers of the natural resources in western Washington, tribes talk frequently and work closely with WDFW staff. Over the years, tribes have met with individual and small groups of Fish and Wildlife commissioners, but had never met publicly with the full commission until now.

We asked for the meeting to build on the cooperative working relationship between the tribes, commission and the Department of Fish and Wildlife. Whether it's co-management of salmon, elk or shellfish, we work best when we work together.

We had some important issues to talk about at the meeting.

One was selective sport fisheries, which target adipose fin-clipped hatchery salmon and require non-clipped wild fish to be released. The tribes are not opposed to selective fisheries, but we are concerned about their possible impacts to wild salmon. We think that if you design a fishery around catching and releasing wild salmon, you need to be pretty darn sure you know how many of those released wild fish are going to die.

These fisheries are popular with sport anglers because they allow fishing in areas that would otherwise be closed due to highly mixed concentrations of hatchery and wild stocks.

Monitoring has revealed wildly differing impacts to released wild salmon. In one fishery, an average of seven or eight sub-legal-sized wild salmon were being hooked and released before anglers were able to land a hatchery salmon they could keep.



Billy Frank with Jerry Gutzwiler, chair of the state Fish and Wildlife Commission. Photo: T. Meyer

It was agreed that more monitoring is needed to effectively gauge the effects of these fisheries on the weak wild stocks we are all trying to protect. And that's an important point. We all want the same thing, whether Indian or non-Indian: healthy salmon populations that can support harvest.

We also agreed on the need to enhance the public transparency of the co-management process, especially in the process known as North of Falcon, in which tribal and non-tribal salmon fisheries in western Washington are developed each year.

We like having the public know what's going on during the salmon season setting process, and we are committed to sharing information. Fish and Wildlife commissioners indicated they want to take a more active role in the North of Falcon process, and we welcome their involvement.

Our joint meeting was held at the Squaxin Island Tribe's reservation and was open to the public. TVW was on hand to record the meeting, which can be viewed at [www.tvw.org](http://www.tvw.org). We think citizens who better understand fisheries management can engage more effectively in the public process.

We were encouraged by the meeting and heartened by the commitment of the Fish and Wildlife commissioners to continue improving our working relationship. For the sake of the fish and wildlife in western Washington, we intend to make sure these meetings keep happening.

## NWIFC News

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Lummi .....360-384-2210	Puyallup.....253-597-6200	Suquamish.....360-598-3311
Makah.....360-645-2205	Quileute .....360-374-6163	Swinomish.....360-466-3163
Muckleshoot.....253-939-3311	Quinault .....360-276-8211	Tulalip.....360-651-4000
	Sauk-Suiattle.....360-436-0132	Upper Skagit.....360-856-5501

**On The Cover:** Duane Jones, foreground, sorts Dungeness crab from Quileute tribal fishermen at the docks in LaPush. Those with soft shells are returned to the water. See story and photos on page 5. Photo: D. Preston

# Neah Bay Tug Rescues Ship in Storm



Left: The drifting *Kauai* battles 90-mph winds as the rescue tug *Gladiator* approaches. Photo: Brian Dedler, *Gladiator*. Right: Capt. Ron Palmer displays a string gun used to shoot a weighted line to vessels in emergencies. Photo: D. Preston

Ninety mile per hour winds blasted through the Strait of Juan de Fuca on the morning of Dec. 3 while the cargo ship *Kauai* – guided only by emergency steering – drifted toward possible grounding near Cape Flattery. A mayday call hustled the rescue tug *Gladiator* to action from its station in Neah Bay.

“Nobody wants to expose their crew and boat to conditions like that, but that’s our job and we go,” said *Gladiator* Capt. Ron Palmer. Forty foot waves had smashed windows in the wheelhouse of the 720-foot, Matson-owned *Kauai*, shorting out all the ship’s electronics.

“Visibility was less than a quarter mile and there was other ship traffic in the area,” said Palmer, 30-year towing vessel veteran who has worked for Crowley Inc., the tug’s owner, for seven years. The *Gladiator* became the eyes and ears

for the ailing *Kauai*, escorting it to a rendezvous with another tug near Port Angeles that eventually guided it to a Puget Sound port for repairs.

“Saving the *Kauai* has already paid for the tug program many times over if you use the example of the non-tanker ship, *New Carissa*, and how much that cost to clean up,” said Palmer. The *New Carissa* ran aground near Coos Bay, Ore., in 1999, spilling an estimated 100,000 gallons of fuel oil. “It’s so much cheaper to prevent it in the first place,” said Palmer.

The Makah Tribe knows prevention is the answer. “More than 8,000 ships a year come through the Strait of Juan de Fuca,” said Micah McCarty, tribal council member for the Makah Tribe. “It’s not just the oil tankers that threaten our resources. All the most recent spills have been non-tanker ships, including the 58,000-gallon

San Francisco Bay spill.”

Owners of oil tankers pay into a fund that helps provide the rescue tug in Neah Bay during the winter months at a cost of \$9,000 a day. This year, because of increasing fuel cost, the tug will depart in March instead of May.

“We need this tug here year-round. An accident can happen at any time, and the amount of ship traffic through here just continues to increase,” said McCarty. “Oil shipments to the Port of Vancouver, B.C., alone have gone up nearly a million tons in five years. All that vessel traffic is passing through the Strait of Juan de Fuca.”

Since 1999, the tugs stationed at Neah Bay have made 36 rescues. Two weeks after *Kauai*, in similar but less dire conditions, the tugs rescued a boat hauling 2.5 million gallons of fuel. – D. Preston

## Showing the Ropes

Makah tribal fisherman Mike Steeves and son Nicholas, 4, check their net for chinook on the Sooes River near its mouth in Neah Bay. Photo: D. Preston



# Consecutive Floods Threaten Chinook Returns to Hoh River

Chinook returns to Olympic Peninsula coastal rivers – already down significantly from recent years – took another hit from early December’s monster storm.

“Right before the storm, we had active spawning in the Quilayute River system, and the kind of flows we saw with this storm will certainly reduce egg survival because the high water scoured eggs out of the gravel,” said Roger Lien, fisheries biologist for Quileute Tribe.

Average flows this time of year on the Olympic Peninsula’s Hoh River are about 3,000 cubic feet per second (cfs). Flows of more than 60,000 cfs were recorded on Dec. 3.

“That storm hit two weeks after peak fall chinook spawning on the Hoh,” said Tyler Jurasin, fisheries biologist for the Hoh Tribe. “Most of the eggs were in the gravel. Salmon produce a lot of eggs, which helps chinook survive flood events. But the frequency and severity of these floods continues to increase and we’re concerned about how that affects survival.”

Flooding in late October 2003 diminished egg survival for spring/summer chinook, which spawn from mid-August through mid-October. “We considered that event when forecasting the 2007 return of spring/summer chinook,” Jurasin said. “Four-year-old chinook from the 2003 brood returned at the low numbers we predicted.”

Severe flooding also occurred in early November 2006. “The timing of that storm could reduce both spring and fall chinook egg survival,” Jurasin added. “The back-to-back flooding last year and this year poses a greater risk to future runs because consecutive broods were harmed.” The majority of chinook return as 4- and 5-year-olds.

Earlier in 2007, summer chinook returns to the Sol Duc River also were sparse. “We forecast a low return this year and that was pretty much the case for summer chinook on the Sol Duc,” said Lien. In early December, the Quileute Tribe was still conducting fall chinook spawning surveys on the Sol Duc, Bogachiel, Calawah and Dickey Rivers. “We’re seeing some late spawning activity, but these runs were also expected to be lower,” said Lien.



A few days before a December storm, a spawned-out chinook floats in Lake Creek, which flows from Lake Pleasant to the Sol Duc River. Tribal fish biologists are concerned about the effects of consecutive years of flooding on future chinook returns. Photo: D. Preston

– D. Preston

## Tribe Charges 5 in Unauthorized Hunt

Five Makah tribal members arrested for participating in an unauthorized gray whale hunt Sept. 8 pleaded not guilty in tribal court in December. Their case will go to trial Jan 22. That trial will be followed by a March 18 trial in U.S. District Court in Tacoma.

In tribal court, the five men were charged with violating the tribe’s Gray Whale Management Plan, violating state and federal laws, and reckless endangerment in relation to the firing of large caliber rifles on the water. If convicted, the men could have their treaty rights revoked for up to three years, be imprisoned for up to a year and pay a fine of \$5,000.

The federal court charged the men with conspiracy to kill, and harassing and killing a whale – violations of the Marine Mammal Protection Act (MMPA). They are also charged with violating the federal Whaling Convention Act. All the charges are misdemeanors. Each carries a maximum fine of \$100,000 and a year jail term.

The Makah Tribal council denounced the men’s unauthorized hunt and pressed the tribal court case forward. 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 MMPA. The ruling contradicts language in the act that specifically states that is it 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. The Makah Tribal council is continuing the process of obtaining the waiver after assuring the U.S. congressional delegation and federal agencies that they are cooperating fully with the investigation and bringing charges in tribal court.

– D. Preston

# Coastal Crabbers Undeterred by Severe Storms

Despite spotty early conditions for soft shell crab, coastal tribal crab fishermen landed 1.7 million pounds of crab prior to a harsh early December storm.

“The farther north up the coast fishermen went, the more sorting for soft shells that had to be done,” said Joe Schumacker, fisheries operations section manager for the Quinault Indian Nation. Dungeness crabs shed their old shell (a process called molting) and grow a new one about 12 times by age 2, and then approximately once a year through age 6. While the new shell is hardening, there is much less meat on the crab and it’s mushy.



Soft shell Dungeness crab must be returned to the water.

“We still had around 1 million pounds landed in November,” said Schumacker. “December didn’t start out too well, however. Fishermen

lost a lot of crab gear in the December storm. Some are applying for small business loans to get more gear.”

Quileute tribal fishermen had to wait longer to fish as a large portion of the crab was still soft. “But once they could get out and crab conditions had improved, the guys did well,” said Kris Northcut, fisheries biologist for the Quileute Tribe. “Now it’s just a matter of how many fishable days they get.”

Inconsistent crab abundance in the Neah Bay area makes crab fishing less significant for the Makah Tribe. The Hoh Tribe plans to participate in the future.



Above: Gary Martin, Quinault Indian Nation crew member for the *Anna Lovisa*, prepares crab pots in Taholah. Left: A pile of Dungeness crab sits in a tote in LaPush after being unloaded from a Quileute tribal boat. Photos: D. Preston

The Dungeness crab fishery is one of the economic pillars for coastal tribal fishermen as well as one of the most dangerous. Most of the money is made in November and December when weather conditions can be the worst.

The state commercial crab season nets an average of 9.5 million pounds a year, with highs of more than 25 million pounds in the 2004-2005 season. Quileute and Quinault tribal fishermen had record landings in 2005 at 1.4 million and 2.7 million pounds respectively.

– D. Preston

## Generations

Cecilia Pell Bob, Squaxin Island Tribe, kneels next to a drying rack of cockles in the early 20th century. The Squaxin Island Tribe has always depended on intertidal shellfish, including cockles. Deep South Sound is one of the most abundant shellfish growing areas in the region.

Photo: Squaxin Island Tribe.



# Meat Salvage Returns Elk to Tribal Tables

Many North Sound tribes traditionally relied on elk meat for sustenance. But these days, there are fewer hunting opportunities because of diminishing quality habitat and declining elk populations.

Without sufficient harvest opportunities to feed their members, tribes turn to meat salvage. The proximity of the Upper Skagit Tribe's reservation to Highway 20 puts the tribe in a prime location to retrieve animals that have been struck by vehicles. Each year, the tribe recovers three to five elk that have been killed on the road.

In September, members of the Upper Skagit Tribe recovered a seven-point elk that was struck by a vehicle along Highway 20. The animal was towed from the bank of the Skagit River and shared with the Swinomish Tribe.

"We do what we have to do, because we don't have access to enough animals," said Scott Schuyler, policy representative for the Upper Skagit Tribe. "We're making good use of this traditional meat, which would otherwise go to waste. We share the salvaged elk with the other Point Elliott tribes." In addition to Upper Skagit and Swinomish, the Point Elliott Treaty tribes are Lummi, Muckleshoot, Nooksack, Sauk-Suiattle, Stillaguamish, Suquamish and Tulalip.

"When the tribes signed treaties with the U.S. government, ceding the land that is now western Washington, we reserved the right to hunt on open and unclaimed land," said Todd Wilbur, chairman of the inter-tribal hunting committee of the Northwest Indian Fisheries Commission and a member of the Swinomish Tribe. "Now, we don't have any place to hunt because the habitat has been fragmented by development."

Tribes have spent close to 1 million dollars and thousands of hours toward reviving the Nooksack elk herd in the North Cascades Mountains. The herd had dwindled during the past 20 years from 1,700 animals to about 300.



Above: Scott Schuyler, policy representative for the Upper Skagit Tribe, butchers an elk. Photo: K. Neumeyer. Below: An elk is recovered after being struck by a vehicle on Highway 20. Photo: Scott Schuyler, Upper Skagit Tribe

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

"We've shown that we're willing to make great sacrifices for the future of the resource," Wilbur said. "Giving up hunting the Nooksack herd for the past 10 years was a huge blow to us, but we made that sacrifice."

As a result of the restoration efforts, the Nooksack herd rebounded to about 600 animals. Last fall, Point Elliott tribes shared permits to harvest 15 bull elk. In 2006, tribal hunters in western Washington harvested 319 elk, while non-tribal hunters harvested 7,191.

"Elk are as important to our culture as salmon," Schuyler said. "The meat also is an important source of protein that helps our communities stretch tight food budgets." — K. Neumeyer



# Stillaguamish Tribe Puts Beavers to Work

The Stillaguamish Tribe is using large woody debris and some beavers to enhance salmon habitat in Fortson Creek along the North Fork Stillaguamish River.

A few years ago, the tribe realigned Fortson Creek, reconnecting it to former side channel habitat and opening up over a quarter mile of rearing and spawning habitat. “The channel primarily was reconnected for coho salmon, but we are hoping chinook juveniles may use it as refuge during winter overflows and summer low flows over the coming years,” said Pat Stevenson, environmental coordinator for the tribe.

Puget Sound chinook are listed as “threatened” under the federal Endangered Species Act and frequent the mainstem near Fortson. A very small percentage of Stillaguamish chinook rear in the river before heading out to sea. Connecting channels such as Fortson may increase that over time.

Fortson Creek already was used by chum and pink salmon, and is one

of the most productive coho sites on the North Fork Stillaguamish. Prior to the restoration work, the creek flowed directly from a series of wetlands through an old millpond before entering the North Fork Stillaguamish River.

To realign Fortson Creek with the side channel, the tribe used large woody debris and native rocks to create a natural appearing logjam to redirect water back into the side channel.

In 2007, the city of Arlington asked the Stillaguamish Tribe for help relocating problem

beavers that were clogging culverts and flooding areas within the city limits. The tribe helped move the beavers to the newly enhanced Fortson Ponds, where the dam-building mammals can create additional wooded resting and rearing places for juvenile salmon.

“We would like to continue relocating problem beavers in order to take advantage of the free restoration help they provide,” said Jennifer Sevigny, wildlife biologist for the Stillaguamish Tribe.

– K. Neumeyer



A relocated beaver swims in a new home after being trapped in Arlington and moved to Fortson Ponds. *Photo: Scott Black, city of Arlington*

## Cat's Eye View

A bobcat kit poses for a photo in some roadside brush in Neah Bay. From one to six bobcat kittens are born to a female in the spring. They begin hunting at 5 months old and are evicted from their mother's territory around 8 to 11 months old. Males can weigh up to 28 pounds and females up to 18 pounds. The average lifespan is 12 to 13 years and their diet consists mostly of rabbits, but they also will eat rodents, birds and bats. *Photo: D. Preston*



# Tribes Remove Barriers to Fish Passage

## Coho Return to Upper Skagit Reservation



Above: Ryan O'Connor, intern for the Upper Skagit Tribe, surveys Red Creek as it flows under the Helmick Road bridge. *Photo: K. Neumeyer.* Below right: The Lower Elwha Klallam Tribe's restoration crew replaces a 4-foot-wide perched culvert with a 40-foot-long and 14-foot-wide bridge. *Photo: Lower Elwha Klallam Tribe.*

Coho salmon returned to the Upper Skagit Tribe's reservation waters for the first time in 50 years, to the excitement of tribal members and planners.

"I had to check with the hatchery guys, to make sure they didn't put them there to mess with me," joked Todd Woodard, environmental specialist for the Upper Skagit Tribe.

The fish traveled to Red Creek on their own, swimming under a bridge built in the summer of 2006 to replace three stacked culverts with a 12-foot drop. The culverts had blocked salmon access to habitat since the 1950s.

The bridge was constructed during improvements to Helmick Road, which leads to the reservation near Sedro-Woolley. The bridge addition opened up about a mile and a half of coho access upstream through the reservation.

This fall, tribal staffers counted as many as 11 fish at a time in Red Creek and

marked four redds (salmon egg nests) above the bridge.

The return of coho was the result of four years of restoration work. While crucial, the removal of the fish-blocking culverts was only one step toward returning salmon to Red Creek. The habitat above also had to be improved.

Large woody debris and rootwads were placed in the creek and native species were planted to stabilize the banks and create resting places for salmon. Other elements included improving channel connectivity and restoring riparian habitat downstream of the reservation.

"If you remove a barrier to fish passage, and there's suitable habitat above, the fish will use it," Woodard said. He was pleased to find coho taking cover beneath the woody debris that was placed there for that purpose. "That's a place fish want to hang out," he said. "It's the direct result of the work we did."

— K. Neumeyer

## Lower Elwha Klallam Tribe Opens Salt Creek Watershed

The Lower Elwha Klallam Tribe and Clallam Conservation District (CCD) reopened parts of the Salt Creek watershed to salmon by removing several fish-blocking culverts.

The tribe and CCD spent last fall replacing two barriers within the Salt Creek watershed, a 25-square mile area that has 50 miles of potentially accessible salmon habitat. For decades, culverts prevented chum, coho and winter steelhead from accessing a large portion of the watershed.

The tribe worked with the Woodard family on Nordstrom Creek, one of four major tributaries to Salt Creek. Tribal staff replaced a 4-foot-wide perched culvert with a 40-foot-long, 14-foot-wide bridge.

Staff also installed weirs in the creek to prevent water from eroding the streambed. Weirs help trap gravel upstream and form pools downstream, both of which are important for proper fish habitat.

Culverts block fish from swimming upstream to spawn. They also accelerate stream velocity, which can scour salmon eggs from their nests. Bridges allow the water to flow more slowly and naturally downstream.

"After a comprehensive assessment of salmon and salmon habitat in the Salt Creek watershed in 2004, fish passage barriers were identified as the top priority for restoration,"

said Mike McHenry, the tribe's habitat program manager. "Half the historically accessible streams

were blocked by culverts."

In the past three years, the tribe and partners have removed 16 fish-blocking culverts. An average of 1,500 to 5,000 salmon have returned to the watershed.

**'Half the historically accessible streams were blocked by culverts.'**

— Mike McHenry

Lower Elwha Klallam Tribe  
Habitat Program Manager



# Nisqually Tribe Helps Estuary

The Nisqually Tribe is planting more than 18,000 trees and shrubs near a newly restored estuary at the mouth of the Nisqually River.

Forty-five acres of existing pasture will be restored over two years with 24 acres planted by this winter. The new forest will contribute to the 140 acres of estuarine habitat that the Nisqually Tribe restored over the past decade. The tribe restored the estuary by removing miles of dikes surrounding an old cattle ranch, allowing it to be inundated by the tide.

“We’re planting on a section of the old ranch that won’t be covered by the tides,” said Jesse Barham, a salmon recovery biologist for the tribe. “In the past, there was likely a forest that covered this area all the way to the saltwater influence, so we’re bringing that back.”

The newly restored estuary is giving juvenile salmon from throughout Puget Sound a place to feed and grow before they migrate to the open ocean. The restored forest of Oregon ash, willow, cottonwood, western red cedar, Sitka spruce, crabapple and other species will provide shade and nutrients for the estuary. Shade helps prevent high water temperatures, which can be harmful to salmon. Trees over time contribute large woody debris that builds logjams.

“Juvenile salmon use logjams as hiding places from predators, and as a place to find food,” said Jeanette Dorner, salmon recovery program manager for the tribe. “The health of the river and of the estuary depends on there being healthy nearby forests.”

Already, meadow grasses in the restored estuary are being replaced by plants that thrive in saltier water. “We aren’t waiting for the forest to re-establish itself on its own,” Barham said. “By planting trees there now, the forest can get a jump-start.”

– E. O’Connell



Paul Gibson Jr., Nisqually Tribe, plants an alder tree near the Nisqually estuary. Restoring the forest helps improve juvenile salmon habitat. Photo: E. O’Connell

## Neighbors Pool Resources for Nisqually Watershed

Four neighboring watershed organizations are chipping in nearly \$1 million toward 700 acres of restoration at the Nisqually National Wildlife Refuge.

“Juvenile salmon from all across South Sound use the Nisqually estuary, so restoring it means healthier salmon populations for all of our watersheds,” said Amy Hatch-Winecka, salmon recovery coordinator for the Deschutes and Kennedy/Goldsborough watersheds. Fish using the estuary include Nisqually River chinook and steelhead, both listed as “threatened” under the federal Endangered Species Act.

A quarter of the tagged juvenile salmon sampled during a four-year study of juvenile fish in the Nisqually estuary were from other watersheds in the Sound, including the Puyallup, Minter Creek on Key Peninsula, and the Deschutes River.

Levees around 700 acres of former estuary will be torn down, allowing the tide to inundate the Nisqually National Wildlife Refuge, which was once a cattle ranch. This restoration is in addition to a 140-acre project by the Nisqually Tribe.

Five South Sound watershed groups are tasked with organizing salmon recovery projects within their own boundaries. Funding for the neighboring watershed groups comes from the Salmon Recovery Funding Board (SRF Board). The SRF

Board process allows local communities to nominate and rank their own salmon restoration projects.

Each watershed group is donating a significant amount toward the restoration project:

- The Deschutes River watershed, \$300,000
- Kennedy Creek/Goldsborough watershed, \$262,000
- Puyallup River watershed, \$200,000
- West Sound Watersheds Council (Key Peninsula), \$165,000.

“Not only did the Nisqually watershed group step forward to help this estuary restoration become a reality, but the four other South Sound watershed groups are also contributing in a very significant way,” said Jean Takekawa, refuge manager at the Nisqually National Wildlife Refuge. “They recognized this greater good. This is an example of how we can all reach across our boundaries to restore Puget Sound.”

The Nisqually watershed organization is also putting \$1.5 million of SRF Board allocations toward the restoration. “Typically, these local watershed groups fund projects within their own watersheds,” said Jeanette Dorner, salmon recovery program manager for the Nisqually Tribe. “But we have decided that pooling our resources here makes the most sense.”

– E. O’Connell

# Broodstock Support Hatchery Efforts

## *Tribes Rescue Early Native South Fork Nooksack Chinook*

Sixteen yearling salmon in an aquarium at the state's Kendall Creek Hatchery could be the salvation of South Fork Nooksack River chinook.

The Lummi Nation and Nooksack Tribe, working with the state Department of Fish and Wildlife (WDFW) and National Oceanic and Atmospheric Administration (NOAA), have developed a plan to rescue the population, which is at risk of becoming extinct.

South Fork native chinook enter the river in May and June and spawn during August and September. These early-timed chinook once supported tribal ceremonial and subsistence fisheries during the spring months when there were no other salmon in the Nooksack. When returns of early chinook declined in the 1970s, the tribes closed the river fishery during the spring months, but the population failed to rebound.

"Recovery needs immediate, intensive hatchery intervention, because abundances are low and habitat conditions are degraded," said Bob Kelly, policy director for the Nooksack

Tribe. But efforts to capture adult South Fork chinook to use for hatchery broodstock proved difficult.



A juvenile South Fork Nooksack chinook swims in an aquarium at the Kendall Creek Hatchery. *Photo: K. Neumeyer*

"The partners in the recovery plan decided that extreme action was required to save the unique genetic characteristics of the South Fork chinook," said Merle Jefferson, Lummi Natural Resources Department director.

Last year, Lummi crews collected 25 adult chinook in the watershed, but DNA analysis found only four to be true South Fork chinook. To make

up for this unsuccessful broodstock collection, field crews scoured the South Fork for juveniles readying to migrate to sea. About 100 juveniles were taken to the Skookum Creek Hatchery for genetic analysis. Sixteen were identified as South Fork natives and were transferred to the aquarium at Kendall Creek Hatchery, where they will grow to maturity. These fish will never be released to the wild. Once mature, they will be transferred back to Skookum Creek Hatchery to spawn a new generation to release into the river. – *K. Neumeyer*

## *Program Casts Safety Net for Chum Salmon in Chico Creek*

Chico Creek is home to Kitsap County's biggest salmon run, but it's threatened by its location – snug between two rapidly urbanizing areas.



Suquamish hatchery manager Mike Huff and NWIFC fish pathologist Marcia House gather samples from chum in Chico Creek.

*Photo: T. Royal*

Within the last 20 years, Chico Creek has seen an average of 30,000 chum a year return to the creek. The Suquamish Tribe wants to make sure it stays that way by establishing a broodstock of the existing run. "If Chico Creek chum are wiped out by a major event, such as flooding or development, we'll have salmon that are genetically close to today's stock and ready to reintroduce into the creek," said Mike Huff, Grovers Creek hatchery manager.

Starting in 2010, staff will collect eggs from salmon egg nests, called redds, in Chico Creek. The eggs will be taken to the tribe's Cowling Creek Hatchery for incubation, then released into Grovers Creek, establishing a new Chico Creek-based stock. As part of the project, the tribe is first studying the health history of the run to determine if the fish are susceptible to diseases.

Chico Creek produces a large number of salmon naturally because of the mostly undisturbed quality habitat in and around its headwater region, and includes one of the largest watersheds with relatively intact habitat in Kitsap County, Huff said.

Heavy flooding, like the event in December 2007, is an example of what can affect a watershed's salmon return. This year, while eggs in the lower reaches of the creek were probably scoured out from their nests, thousands of chum made it into the upper watershed to a more protected spawning area, said Jon Oleyar, a Suquamish Tribe fisheries biologist.

– *T. Royal*



# Tracking Skagit River Chum

The Skagit River System Cooperative (SRSC) and the Upper Skagit Tribe are working with biologists at Seattle City Light and the Washington Department of Fish and Wildlife (WDFW) to track the movements of chum salmon that spawn downstream of three hydroelectric dams.

In recent years, chum have become increasingly important to tribal commercial fisheries. To effectively manage chum fisheries, the tribes and WDFW need an accurate count of the fish that return to spawn in the Skagit River. The current method that biologists use to count spawning chum is based on studies done in the 1970s. Since then, the distribution of chum spawning has changed, largely due to changes in the way the dams release water. These changes mean that biologists are unsure how accurate their counts of spawning chum are.

“Imagine trying to run a business and not being sure how much money you have in the bank,” said Jake

Musslewhite, SRSC field biologist. SRSC is a the natural resources arm of the Swinomish and Sauk-Suiattle tribes.

Seattle City Light, which operates the dams on the Skagit River, needs the data on chum movement to determine how much water to release from its dams during salmon spawning season.

Last fall, Musslewhite and a team of technicians beach-seined chum along a stretch of the Skagit River. The salmon were measured, jaw-tagged, gillplate-punched and implanted with an acoustic transmitter the size of a Chapstick.

The acoustic tags send signals to receivers throughout the Skagit basin that record the salmon’s movements. The other tags externally identify the fish as ones that have been tagged and counted.

On the spawning grounds, technicians from WDFW and the tribes counted spawning chum and checked dead, spawned-out fish for tags. This data will be used to update the way that biologists on the Skagit count chum salmon.

– K. Neumeyer

Skagit River System Cooperative field biologist Jake Musslewhite (top) and technician Jade Luckhurst fit a chum with an acoustic tag. *Photo: K. Neumeyer*



## Afternoon Glide

A Great Blue Heron takes flight in search of an afternoon meal near the mouth of the Sooes River in Neah Bay. Blue herons can have a wingspan reaching nearly 80 inches, and are the largest herons in North America. They eat mice as well as fish, and females can lay two to six eggs. About 10,000 herons live along the Pacific Coast between Washington and Alaska.

*Photo: D. Preston*

# Tribes Monitor Geoduck Harvest Areas

## Puyallup Tribe Watches Red Tide

The Puyallup Tribe of Indians is doubling monitoring efforts to avoid a repeat of last winter when tribal geoduck harvesters lost three months of their season due to a persistent red tide closure. The tribe is paying for the additional geoduck sampling.

A red tide is a large accumulation of toxic algae that is poisonous to humans. It is more common in the summer because it is connected to excess nutrients feeding algae in warm water. Last winter's was the first recorded three-month red tide geoduck closure during the winter in South Puget Sound.

"This had a huge impact on our geoduck fishers," said Dave Winfrey, shellfish biologist for the tribe. "Winter is almost always a good time for our tribal geoduck diggers. The tribal harvesters depend on a consistently open season so they can ensure a product to their buyers."

Confounding the situation, some shellfish species in the same areas as the infected geoducks did not show evidence of red tide. "We looked for clams and mussels in the same areas where we found red-tide-infected geoduck, but those species weren't impacted," Winfrey said.

## Suquamish Tribe Evaluates Potential Harvest Areas

The east side of Puget Sound between Everett and Seattle has been viewed for years as a lost opportunity for tribal shellfish harvesters. Rich beds of geoducks worth millions line the coast, but urban uplands and uncertainty about past contamination leave commercial geoduck harvest in a kind of classification limbo – neither prohibited nor approved.

That could change for one stretch of the coast if work by the Suquamish Tribe and the state Department of Health can show that geoducks are safe to eat and that the waters meet the strict standards for shellfish growing area certification.

Work is focused on the 7.5-mile stretch of shoreline near Richman Beach between Point Wells and Meadow Point. The site was chosen because studies indicated it wasn't impacted by wastewater outfalls south of Seattle and north of Edmonds. It

also will be unaffected by the future King County Brightwater outfall off Point Wells.

The first phase of the project was to determine whether the geoducks contained unsafe levels of contaminants. In the spring of 2006, the tribe collected and analyzed tissues from 60 geoducks from 20 sites at Richman Beach for a variety of pollutants, including arsenic, lead and mercury. The tribe is encouraged by the preliminary results from the tissue analysis.

"We've found that when detected, the concentration of contaminants were mostly below levels considered safe for human consumption, even when those levels are based on very conservative assumptions," said Tom Ostrom, the tribe's environmental biologist.



John E. Keating (left) and his father, John M. Keating Jr., Puyallup Tribe, pull aboard a load of geoduck clams off Maury Island. *Photo: E. O'Connell*

The red tide algae form cysts that lie at the bottom of the sound. The cysts could have been resuspended in the water column when tribal harvesters dug for the clams. Geoduck clams are relatively large animals with feeding behavior that slows down when food is scarce. Without active feeding, toxins may persist in the geoducks long after the bloom has ended.

– E. O'Connell



Tom Ostrom, environmental biologist for the Suquamish Tribe, observes geoduck samples. *Photo: T. Royal*

The next steps will be extensive water quality monitoring and a sanitary survey of the shoreline.

– T. Royal

# Tulalips, State Work Together at Wallace Hatchery for 100 years

In 1907, when the state built the Wallace River Hatchery on the Skykomish River, members of the Tulalip Tribes canoed up the Snohomish River, bringing wild salmon eggs to the new facility.

A century later, the tribes and state still work together to release hatchery salmon into Puget Sound, but now, eggs are collected at the Wallace River Hatchery and trucked to Tulalip's Bernie Kai Kai Gobin Hatchery for fertilization. Eggs from hatchery fish are mixed with those from wild stock caught at nearby Sunset Falls, to ensure certain traits are passed on that could improve the chances of survival.

"Many salmon behaviors are genetic responses to environmental cues. For example, migration behavior and homing, avoiding predators and finding food – these are genetically inherited adaptations to the local natural environments that the fish evolved in," said Mike Crewson, Tulalip Tribes fisheries enhancement biologist. "Our goal is to create fish that are as close as possible to their better surviving wild counterparts. We incorporate the genetics of wild fish to improve fish health and instincts, which increases survival of hatchery fish after release."

When possible, hatchery conditions also mimic those in the natural environment.

"We must continue to help hatchery salmon survive harsher environments, minimize wild salmon harvest through regulation and monitoring, and increase wild salmon runs through habitat protection and restoration," said Mel Sheldon, chairman of the Tulalip Tribes.

One hundred years after the joint tribal-state hatchery program was created, environmental factors such as growth, climate change and vanishing habitat have drastically reduced salmon populations.

"If we didn't have hatchery programs managed by the federal, state and tribal governments, we wouldn't have fish for anyone to harvest," said Daryl Williams, Tulalip's environmental liaison.

"Relying on hatchery-raised fish won't remove chinook from the federal Endangered Species List," Williams added. "We believe that a continued push to improve habitat and the natural production that depends on it is really the only way to achieve salmon recovery."



Dennis Hegnes, fish culturist for Tulalip Tribes, spawns chinook at the state's Wallace River Hatchery.

*Photo: K. Neumeyer*

## Cooperation Eases Project Impacts on Tribal Hatchery

Typically in the fall, the sounds at Grovers Creek Hatchery consist of the slosh of adult salmon being pulled from hatchery ponds, the beep of a metal detector locating a coded wire tag in a fish snout and the shouts of hatchery volunteers recording fish measurements.

But last summer and fall, Suquamish tribal staff dealt with the effects of road construction a few hundred yards away from the hatchery. All summer long, huge trucks brought in load after load of fill dirt and heavy equipment to improve the intersections of Miller Bay Road and Gunderson and Indianola roads.

While the construction noise wasn't an issue, the tribe was concerned about possible effects of vibration on 3 million salmon eggs being collected and incubated at the hatchery. Salmon eggs are in their most sensitive state during early incubation.

With cooperation and communication between the tribe, Kitsap County and contractor Stan Palmer Construction, the tribe was able to resolve the issues.

"We appreciate the contractor and county staff efforts to work with us to make sure we had a successful egg-take," said Jay Zischke, the tribe's marine fish program manager. "We collected 3 million chinook salmon eggs, which is normal, and most importantly, these eggs are developing normally."

The county provided the tribe with a vibration meter to monitor construction impacts, which never reached a critical stage. The project contractor also rearranged its pile-driving schedule to complete work prior to having eggs in the hatchery, said Douglas Palmer, Stan Palmer project superintendent.

The water flow in Grovers Creek has been improved as a result of the project. The stream once channeled through a culvert under the road, which was replaced with a bridge. In addition, to mitigate for wetlands that were taken up by the road expansion, five acres of land bordering the west side of Grovers Creek were purchased.

– T. Royal

– K. Neumeyer

# Tribe Tracks Bull Trout Migration

The Puyallup Tribe of Indians is radio tagging a handful of bull trout to learn more about the population of fish that inhabits the entire watershed.

“We don’t know a lot about how these fish live,” said Russ Ladley, resource protection manager for the Puyallup Tribe. The small population of bull trout on the Puyallup River, listed as “threatened” under the federal Endangered Species Act, are difficult to track because they don’t migrate in large numbers like salmon.

Over the summer, tribal staff attached small radio tags to about a dozen bull trout caught at the Buckley Diversion Dam fish trap on the White River, a tributary to the Puyallup. Tribal staff followed the fish with a radio telemetry device, tracking their movements.

“We can follow them for about a year after they are tagged,” said Ladley. “Bull trout have a varied life cycle that is not as straightforward as other salmon species. By tracking them in their habitat, we can pick up on the details that might end up being vital in restoring them.”

Bull trout are members of the Pacific salmon family and, like salmon, can migrate to saltwater. They need extremely cold water to spawn and grow, meaning most are found high in the



Eric Marks, biologist for the Puyallup Tribe of Indians, tracks a radio-tagged bull trout in the upper White River watershed. *Photo: E. O’Connell*

mountains. Bull trout live much longer than any other species, with average life spans up to 12 years.

From the data the tribe has already collected, through other fish-tracking efforts, there appears to be a main population of bull trout that stays in the icy upper reaches of the Puyallup and White Rivers, near the rivers’ glacial sources. The tribe also has tracked a population that migrates down from the upper reaches to the lower sections of the Puyallup watershed. Yet another smaller population, Ladley theorizes, migrates out to Puget Sound and lives there for up to four years before returning to spawn in freshwater.

– E. O’Connell



## Red Rockfish Ready

A load of mostly shorttraker and rougheye rockfish is unloaded in LaPush. Rockfish species such as these are important to tribal coastal economies. Rockfish can live for a long time; some species for more than 100 years. Each of these species is listed when sold as part of tribal, state and federal efforts to track all species caught.

*Photo: D. Preston*

# Blast Opens Habitat on Skagit River

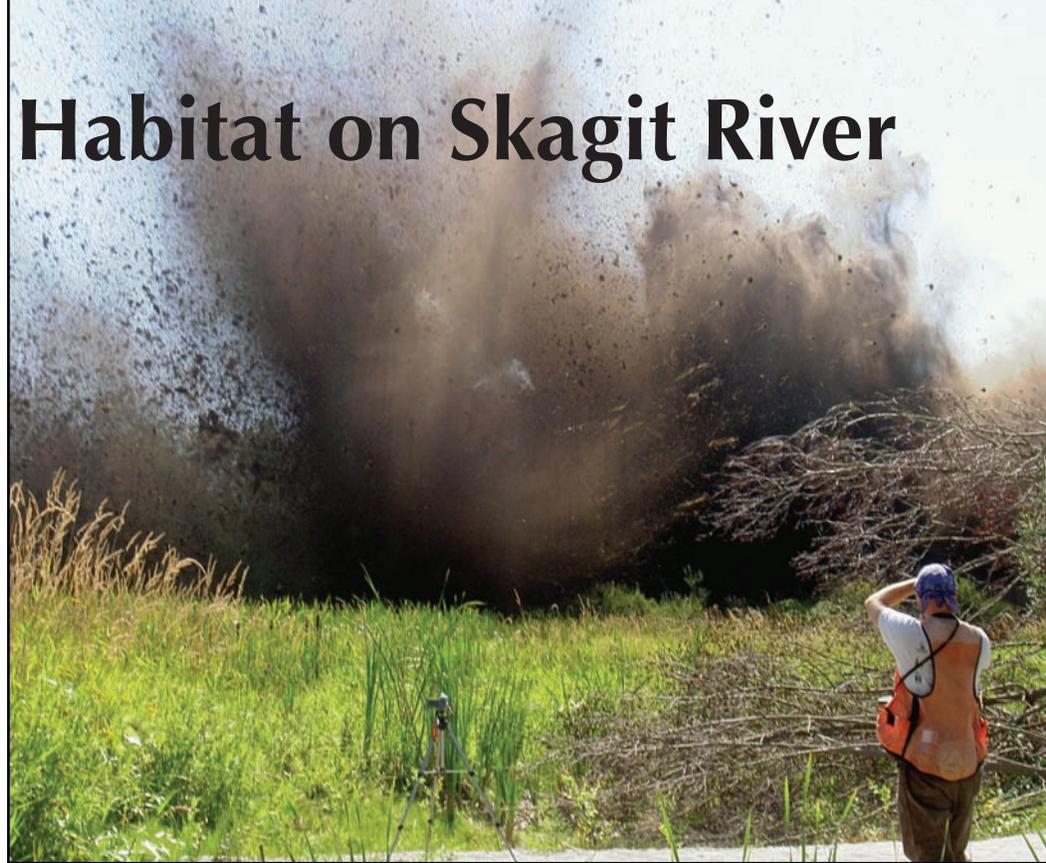
The Skagit River System Cooperative (SRSC), along with the state Department of Fish and Wildlife, blasted 1,000 feet of a dike on Milltown Island with explosives, finishing a project to improve water flow connectivity through the delta.

Demolition began in 2006 and work continued last summer to restore tidal and riverine functions to 310 acres of the island on the South Fork Skagit River. The project opened 1,500 feet of new channel habitat.

Milltown Island was diked and converted to farmland about 100 years ago. Before the dikes were constructed, the island was vegetated with a variety of estuarine plants. Cut off from tidal influences, part of the island became a wetland field dominated by reed canary grass. Surveys found that it had fewer tidal channels than undiked marshes elsewhere in the Skagit delta, largely due to the isolation created by the dikes.

“The contrast between the diked and undiked portions strongly suggested that there was potential for significant restoration of tidal channel and estuarine shrub habitat,” said Steve Hinton, director of restoration for the Skagit River System Cooperative, the natural resources arm of the Swinomish and Sauk-Suiattle tribes.

But getting excavators and other



Carefully detonated explosives open up new channel habitat on the South Fork Skagit River. *Photo: Skagit River System Cooperative*

heavy equipment to the dikes was next to impossible, because the area was isolated, soggy and heavily vegetated. The best option for demolition was to carefully detonate explosives. The blasts were time-staggered and limited in size to reduce potential harm to nearby fish.

Next year, the SRSC plans to burn

the area, to help control and suppress invasive reed canary grass. Planting of Osier dogwood, MacKenzie willow, Pacific willow, twinberry, Nootka rose and crabbles also will contribute to the new habitat.

– K. Neumeyer

## Fish for a buck!

After spawning out the male and female adult chinook at Grovers Creek Hatchery in the fall, the Suquamish tribal staff allows the public to take the carcasses off its hands for a dollar a fish.

“It helps us get rid of the fish, which we have no use for after we’ve spawned them,” said Mike Huff, the tribe’s Grovers Creek Hatchery manager. “This way the fish aren’t wasted. And those that aren’t purchased, we take them to a local farmer who uses them as compost.” Some hatcheries will bury the carcasses, or put them upstream to provide nutrients to the habitat, but Grovers doesn’t have that capacity, Huff said.

People have been flocking to the hatchery for longer than Huff can remember to get the dollar deal. It’s not unusual for a family to load up the backseat with coolers overflowing with the spawned fish. About 4,000 chinook came back to the hatchery in early fall and about 6,000 chum were expected to return in November. Rarely are the fish thrown away as the tribe has a good recycling program in place, Huff said. The money made from the sales goes into a “carcass account,” he added, for hatchery supplies and lunch for staff and all the volunteers, like the Kitsap Poggie Club members, who spend their fall mornings catching the wily fish to spawn.

– T. Royal



Residents from all over the region come to Grovers Creek Hatchery each fall to purchase chinook carcasses for \$1.

*Photo: T. Royal*

# Fungus Helps Water Quality

Cleaning up water pollution could be as easy as growing oyster mushrooms in your backyard. In a partnership with the Jamestown S'Klallam Tribe, the Battelle Pacific Northwest National Laboratories has cultivated fungus and native plants along a Sequim stream to see whether it will help prevent the movement of bacteria from upland sources into coastal waters.

"If using this mushroom technique works, it would be very cost-effective for removing fecal coliform and excess nutrients from the water," said Hansi Hals, the tribe's environmental planning and program coordinator.

Keeping Sequim Bay and the rest of the Dungeness watershed clean is important for the tribe, Hals said, because it is the tribe's primary area for harvesting its treaty-reserved natural resources, such as shellfish and salmon. Harvesting in

Sequim Bay has been closed for the past few years because of the high pollution levels.

In 2006, tribal and Battelle staff constructed a biofiltration garden in the path of a small stream that flows through pasture land. Thirty species of native plants and a mulch of woodchips were installed in half of the garden. In the other side, the same native plants and woodchips were added, plus several types of fungi, including oyster mushrooms and stropharia.

As fungus grows in soil, it breaks down and digests organic materials, such as dead wood and garden waste, and in the process, breaks down contaminants in the soil as well. Some species are also natural predators of bacteria. They actively destroy bacteria such as fecal coliform that can otherwise contaminate water, said Susan Thomas, a senior research scientist with Battelle. The laboratory has succeeded before with similar work.



Above: Hansi Hals (left) of Jamestown S'Klallam Tribe and Dana Woodruff of Battelle Laboratories observe mushrooms in a stream on a Sequim farm.

Left: Researchers hope mushrooms such as these will help remove pollutants from freshwater streams before the water reaches the coast. *Photos: T. Royal*

The creek is split into two small channels at the site, each flowing through a pond and emptying into a coastal wetland. Water samples are collected monthly and tested for bacteria to determine how well pollutants are filtered from the water. The study continues through January 2008.

– T. Royal