

The many benefits of the Fishers Expo

by Jeremy FiveCrows
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Nearly 100 people attended this year's Columbia River Indian Fishers Expo in Hood River. The event, hosted by CRITFC, takes place every other year.

The expo provides Indian fishers with information, resources, and training that will help them improve river safety, fish quality, and equipment maintenance.

This year's Expo was made possible by generous donations from the Nez Perce Land Buy-back Program, Yakama Nation Housing Authority, Columbia River Fishers Memorial Task Force, Ocean Beauty Seafoods, Pacific Seafood, Two Rivers Fish Company, and Foods in Season.

The Expo schedule was filled with workshops, panels, and presentations. A panel of farmers markets from Hood River and Bellingham, Washington, discussed ways tribal fishers can access farmers markets, and how to best prepare or process their catch for market sales.

CRITFC harvest biologist Stuart Ellis gave a well-attended presentation on the fall fishery and what fishers can expect from it. A safety panel discussed ways to improve boating and river safety.

A variety of vendors, organizations, and specialists set up booths for the Expo trade show. This included vendors selling fishing gear, marketing products, and fish pro-



Courtesy Jeremy FiveCrows/CRITFC

River safety was a central theme to the Fishers Expo. Two youth at the Corps of Engineers booth learned about the danger of cold water, and how muscles cramp and seize up when exposed to it. They tried to pick up as many of the washers and bolts in the tray of ice water they could before the cold rendered their hands unable to grab them. The demonstration taught the importance of wearing a life jacket to stay afloat because even the strongest swimmer will eventually lose muscle control in the cold water of the Columbia River.

cessing equipment.

The Yakama Nation Housing Authority, Nez Perce Land Buy-back Program, and Columbia River Fishers Memorial provided attendees with information and materials.

Instructors gave presentations on fiberglass repair, engine maintenance, and boat design. Attendees also got to tour the CRITFC Enforcement mobile response center trailer that was parked on site.

CRITFC, the Yakama Nation Housing Authority, and the Native American Youth and Family Asso-

ciation coordinated to gather information about the housing situation and needs from attendees.

The results of that questionnaire will be compiled to help determine ways to proceed to address the tribal river housing crisis.

The Expo concluded with fishers getting the opportunity to meet and share their concerns with tribal elected officials. Representatives from each tribes' Fish and Wildlife committees met with their constituents for question and answer sessions.

Tribes worry about fall runs due to fires

The forest fires that have raged in the Columbia River Gorge are unlikely to disturb adult coho salmon right now. But Northwest tribal fishers are worried about what will happen in the fall.

Tribes are particularly concerned with a distinct group of coho salmon that spawn on the Oregon side of the Gorge, especially those that use the tributaries of the Columbia and Sandy rivers. Numbers wise, they say the fires are not going to decimate all

Columbia coho. But for this small population of threatened fish, it's a major upset.

Seth White, a watershed ecologist for Northwest tribes, said spawning time and fall rains could be a deadly match-up this autumn.

"Because what's going to happen is that rain is going to bring down a lot of the ash and the sediments and the woody debris and a lot of the other things that have gotten into the stream from the

fire," White said.

These fish may use nearby streams for decades while the affected watersheds recover—that's what happened after Mt. St. Helens. White said some streams could take up to 50 years to recover.

The tribes are also concerned that several of their traditional fishing sites were under evacuation or close watch. And some tribal fishers were putting down their nets to fight the fires.

Smoke stops steelhead count at Bonneville

In addition to hatchery closures, there was an unexpected consequence of wildfires and smoke impacting the region: Only "essential" workers were allowed to be on the job at Bonneville Dam, and that does not include the fish counters.

Consequently, as Columbia River

fish managers and anglers were desperately trying to monitor critically low runs of B-run steelhead, the fish counts have been days behind. Bonneville is the first dam the fish negotiate as they migrate from the ocean up the Columbia and Snake rivers.

Hatcheries have been impacted too. Oregon's Department of Fish and Wildlife had to evacuate the 26 employees at the three hatchery facilities in Cascade Locks as a result of the Columbia River Gorge blaze.

The Bonneville, Oxbow and Cascade hatcheries are home to some six million fish.

Ocean numbers yet another warning sign for salmon

The numbers of young salmon caught off the Oregon and Washington state coasts during an annual federal survey cruise this summer were among the lowest recorded in the past 20 years.

In fact, numbers were low across nearly all the species researchers regularly catch or observe—from birds like the common murre to forage fish like anchovies and smelt.

Months ahead of schedule, as a kind of heads up, West Coast researchers, project managers and program directors decided to send out a memo in mid-August detailing their initial findings—data that would usually be combined with other information and put out on a webpage at the end of the year.

The data is preliminary, but researchers say it is clear many young coho and Chinook salmon didn't survive the migration from freshwater streams and rivers to the ocean this year, while poor ocean conditions could impact salmon returns to the Columbia River for the next few years.

Brian Burke, of the National Oceanic and Atmospheric Administration's estuarine and

ocean ecology program and one of the authors of the memo, says the numbers need to be taken with a grain of salt. One research boat at one point in time can't cover all the habitat, nor can researchers know for certain that where they drop a net is where the fish are present. But, he said, "it was clear that there were not many fish out there."

More data

As they continue to process additional data—salmons' blood samples, growth hormone levels and stomach contents—Burke said their understanding of why so many juveniles apparently died could shift.

"I think the big picture is sort of settled," he said. "It's refining the 'why' rather than the 'what.'"

It's possible that with a scarcity of usual prey like anchovies, smelt and herring, "predators may have been forced to feed at higher rates on salmon," the memo states. The memo also notes anomalies throughout the area surveyed: the biomass of northern copepods—salmon growth and survival is re-

lated to the abundance of these small crustaceans—has been low since 2014; the lowest levels of chlorophyll (a proxy for phytoplankton); changes in the jellyfish population.

Michael Tehan, assistant regional administrator for NOAA's Interior Columbia Basin Office and the recipient of the memo, said the heads up provides him and the agency's policymakers, fishery managers and those involved in habitat restoration work across the basin with "situational awareness."

"Many studies have focused on the (salmon's) freshwater phase, and there has been substantially less research on salmon during ocean residence," said David Huff, estuarine and ocean ecology program manager with NOAA and another author of the memo. But, he added, the success of practices in freshwater that touch on the size, timing and abundance of migrating salmon depends on the ocean environment.

For those involved in restoration work—or the entities that fund this work—the memo is a

Repeat Spawners



Photo courtesy Michelle Singer/OHSU School of Public Health.

Besides teams from Warm Springs at the Hood to Coast and Portland to Coast Relays, the Columbia River Inter-Tribal Fish Commission also had a team at Hood to Coast 2017. The team is the Repeat Spawners.

Fire forced early fish release

The Eagle Creek fire last week forced Oregon fish officials to release more than 600,000 hatchery salmon, some were dumped six months earlier than expected.

Oregon's Department of Fish and Wildlife had to evacuate the 26 employees at the three hatchery facilities in Cascade Locks as a result of the Columbia River Gorge blaze.

The Bonneville, Oxbow and Cascade hatcheries are home to some six million fish (mainly Coho and Chinook salmon). Bonneville's Hatchery is also the home of the

Sturgeon Viewing Interpretive Center.

The state was forced to either release hundreds of thousands of five to six-inch hatchery fish now or risk losing them altogether.

Tanner Creek, one of the water sources feeding a hatchery facility, was "literally engulfed in flames," said Ken Loffink of Fish and Wildlife. The intake pipes were clogged with ash and debris.

"Without that water, those fish were going to die."

Fall fisheries: 'poor steelhead return due to climate conditions'

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Modifying actions based on abundance is a responsible way to minimize human impacts on fish runs, however only fish harvest is managed this way. The tribes continue to advocate for management changes to all human activities in the basin that affect salmon.

"Curtailing harvest is never an easy decision but sometimes the only option tribal leaders have to protect fish during low run years," said Jaime A. Pinkham, CRITFC executive director.

This year's poor steelhead return was largely due to climatic conditions. As smolts, their outmigration involved navigating an inhospitable river and then enduring poor ocean conditions. This combination overwhelmed the fish's ability to handle them.

While we can't do much on a regional basis to combat global climate change, restoration work can help boost steelhead and salmon

numbers and survival enough to help them return in sustainable numbers. This shows the importance of addressing the salmon and steelhead's entire life cycle as is done in *Wya-Kan-Ush-Mi Wa-Kish-Wit* (Spirit of the Salmon), the tribes' salmon restoration plan.

The tribes have led one of the most successful salmon supplementation programs in the Columbia river basin, which is helping to restore wild fall chinook to the Snake River. In addition, the tribes are conducting steelhead kelt reconditioning programs, in the Yakima and Snake River basins, which are returning wild female steelhead to the rivers so that they can spawn a second time. The tribes are committed to conservation solutions including hatchery supplementation that can build up wild runs of salmon and steelhead and provide a better buffer for years when ocean and river conditions are poor.

reminder of the complexity of a salmon's life cycle.

"People expect there to be noticeable, sometimes dramatic responses when they do conservation activities," Tehan said. But the salmon are "a product of what happened when they migrated out to the ocean"—and what kind of ocean they entered.

Without the ability to distinguish between the different ways ocean, freshwater or estuary conditions impact salmon, it's hard to say where conservation or recovery efforts are succeeding or failing, he clarified. "Large salmon returns may be mistakenly presumed to be a result of successful freshwater mitigation practices when they are in fact a function of favorable ocean conditions."

"Similarly," he added, "the effects of successful freshwater recovery actions may be masked or overridden by poor ocean conditions, leading to unwarranted changes to recovery actions."

Something different

Between persistent, unusually warm surface temperatures and a

strong El Nino event, the ocean hasn't been normal for the last three years.

"When you look at the whole time series, the last three years really stand out as being something different," said Jennifer Fisher, a research assistant with Oregon State's Cooperative Institute for Marine Resources Studies, which works closely with NOAA. Her group goes out on shorter-range, biweekly trips to monitor ocean conditions. The May and June cruises Burke participates in, funded by the Bonneville Power Administration, primarily look at food availability and conditions when juvenile salmon first go out to the ocean.

Still, said Burke, "It's often not just what's happening in the ocean, but because the fish live in the river and they are coming out in different conditions each year"—at different sizes, with different fat reserves or parasites—"and all of these aspects of their biology differ from year to year ... we can't just look at the ocean and say survival was really low because of x, y, z."