

Eel River 2016-2017 Fall Chinook Salmon Run Robust According to Report

The Eel River Recovery Project has just released its 2016-2017 Fall Chinook Salmon Assessment Report, with a total run estimate of 15,000 to 30,000 fish, which was double the 2015-2016 return. ERRP began Chinook monitoring in 2012 and salmon runs have oscillated between 10,000 and 50,000 fish annually, which is comparable to population levels measured by U.S. Fish and Wildlife Service from 1955-1958. Their current survey is indicating another strong run this year, but it is only the mid-point.

Eel River fall Chinook salmon historically began mass migrations from the estuary into the lower river in late August, but now they enter months later as a result of degraded habitat. There are almost no deep pools, water temperatures are too warm, and riffles are so shallow that the fish risk stranding as they migrate. In 2016, ERRP estimated that only about 2,000 to 3,000 early Chinook had been able to move up out of tide water and stage in freshwater for their migration before rains began in mid-October.

After heavy rain in early November 2016, ERRP received numerous reports from anglers who were catching and releasing numerous Chinook salmon as they migrated upstream. Shortly thereafter high densities of spawning salmon showed up in tributaries all over the Eel River watershed, and it was apparent that the second pulse of the salmon run was much larger than the first, on the order of 10,000-15,000 fish.



**Chinook salmon over redds on Black Oak Ranch in Tenmile Creek.
November 16, 2016.**

South Fork Eel River tributaries, such as Rattlesnake Creek and Tenmile Creek near Laytonville, had salmon on every riffle for miles. The Van Duzen River had thousands of spawners from Yager Creek in its lower reaches to Little Butte Creek above Bridgeville. Out in Round Valley, waves of fresh Chinook salmon spawned all over in the Middle Fork Eel and Black Butte rivers, where flocks of bald eagles fed for weeks on carcasses.

As rains continued in December, yet another wave of Chinook ascended to the spawning beds. Late run fish often enter smaller tributaries after the water table recharges so enough flow is maintained for egg survival. Widespread spawning was noted in tributaries of Bull Creek in Humboldt Redwoods State Park on the lower South Fork in December. Similarly, spawning in Van Duzen River tributaries like Grizzly Creek was very active and there was a high density of fish in some reaches. Middle Fork Eel tributaries Williams and Murphy creeks also had robust late runs.

Outlet Creek and its major tributary Long Valley Creek had active spawning for at least six weeks, with relatively high densities of spawning Chinook even in tributaries upstream of Willits into December. However, the upper Eel River Chinook run was not robust, with just 453 fish passing Van Arsdale Fish Station (VAFS) at the base of the Potter Valley Project, which is 140 miles upstream of the ocean.

At right: December spawning Chinook in Baechtel Creek above Willits. 12/2/16.



Real problems are apparent with regard to Chinook salmon production in Tomki Creek, which joins the main Eel River just downstream of VAFS. Only 61 live fish and carcasses were counted in 2016-2017, while this stream had a run of 3,500-5,000 Chinook salmon annually as recently as the 1985-88. Runs have also declined similarly in South Fork Eel River tributaries Salmon Creek near Miranda and Redwood Creek near Redway.

The reduction in spawning carrying capacity in tributaries exhibiting cumulative watershed effects problems is being offset by the recovery of hundreds of miles of main Eel River channels. Streams with extensive public land ownership in their headwaters have low sediment yield, fines from past floods has been washed to the ocean, and Chinook spawning gravels are excellent. Examples are the upper Eel, Middle Fork and Van Duzen River watersheds that have extensive U.S. Forest Service lands in their headwaters. Similarly, the upper South Fork Eel River has extensive Bureau of Land Management Wilderness Areas and its channel is in late recovery from past floods and serves as excellent spawning habitat downstream as far as Piercy.

Eel River Chinook salmon have co-evolved with huge natural forces such as earthquakes, flood events and landsliding that constantly changed habitat quality over thousands of years. While we think of salmon as homing with precision to the stream of their birth, they actually take cues from the environment and can change spawning locations as necessary. When salmon swim up to Salmon Creek during high flows and sense extremely high suspended sediment, they rely on genetic memory of similar events when natural forces disrupted habitat for decades or centuries. Just as they did then, they will follow their senses to functioning habitat and spawn in a different location, but with each generation checking as they pass by to see if Salmon Creek is switched on again.

At present the total Eel River fall Chinook population is in the tens of thousands and; therefore, not at all at risk of extinction. ERRP chronicled a decline of Eel River fall Chinook from 20,000-50,000 in 2012 to 10,000-15,000 in 2015. The rebound of the 2016-2017 run was a result of good previous years of juvenile recruitment, good ocean conditions and low ocean fishing pressure. The 2017-2018 Chinook run is expected to be as large or larger than 2016-2017 because of the same factors.

This year's run started slow again, but the number of Chinook surged with the rains and they were spawning all over the watershed by Thanksgiving. It is too early to tell what escapement will be, however, because as much as half the run may start their run in December and early January. To review a copy of the 2016-2017 fall Chinook assessment report, see www.EelRiverRecovery.org or follow ERRP on Facebook to see photos of recent surveys and fish.



Chinook salmon spawning in a Van Duzen River tributary on November 14, 2017. Photo by Eric Stockwell.