

What's Up With the South Fork Chinook This Year?

Published in the Trinity Journal December 12, 2018

On November 19th, I joined the US Forest Service and the Watershed Research and Training Center team effort on the South Fork Trinity River to survey for fish redds, the aquatic nests where salmon lay their eggs.

This team has been assigned to survey a 5-mile stretch (or "reach") of the South Fork Trinity River by kayak once a week between October 15 - December 15. Multiple fish surveys happen each year by reach along the Trinity River and its tributaries critical for fish habitat. The coordinating agencies that collect this data share their results for a final report at the end of each year to track trends in salmon populations. Redd counts help inform agencies in a variety of ways on how to implement future management strategies to benefit salmon, recreational and commercial fishing, and river habitat. Agencies involved in redd surveys include US Fish and Wildlife Service with participation from CA Department of Fish and Wildlife, Yurok Tribal Fisheries, Hoopa Valley Tribal Fisheries, and the US Forest Service.

Leaving early in the morning to get on the river in the middle of November is not an appealing idea, especially when we can see our breath. Thankfully, it turned sunny as we kayaked down the assigned reach, looking for redds in the riffles. Riffles are the ideal spawning grounds for redds and are found in shallow and sometimes broad sections in the river, where the water tumbles over protruding gravel and adds oxygen to the water. Riffles also provide protection and food sources for fish. A fine place to leave your nest of young ones over the winter.

Fall Chinook salmon migrate upstream every year from the ocean between August and October, dig their redds in gravel beds and deposit their eggs in November and December. Embryonic development occurs over the winter in the gravel beds and fry (recently hatched fish) emerge from March through May.

Since I don't make a habit of getting on the river between November and March, I've never personally identified a redd before now. The first thing to look for is gravel that's been scoured clean in a riffle zone. From afar it will appear the river bottom is much lighter with an area roughly sized 3 x 6 feet and often described as a teardrop shape. The size of the gravel and rocks has to be just right too. Ideal gravel and rock size would be approximately 8mm thick (think four stacked nickels) to about 5 inches thick. The final ticket to identifying a redd is the deeper impression in the gravel on the upstream side, and the pile up of gravel just below it.

I learned two important things about the South Fork and why it is critical to study:

1. Salmon spawning on the South Fork are wild as opposed to the mainstem Trinity River which has hatchery fish. It is the wild barometer of the Trinity River watershed.
2. With no dam on the South Fork, we can note the natural unimpeded flows whereas the main stem of the Trinity River is guaranteed a base flow through critical months.

Our day spent on this reach of the South Fork only procured five new redds, with only five sightings of live Chinook. This is a grim figure compared to last years count. According to Amelia Fleitz, USFS Fisheries Technician, there were 250 redds counted at the same time last year along this reach with a total of 355 counted by the end of the season.

One possible explanation of the decreased fish counts is the lower than average rainfall received this fall. In normal rainfall years, spawning Chinook have ample flows in the waterways by mid-November, providing higher flows, colder water and more ideal spawning habitat. With the complex lifecycle of the salmon, other explanations for low counts include down river water quality, food source conditions, climate change and ocean conditions.

What does this mean for the South Fork Fall Chinook?

Considering the complexities of the salmon life cycle, it's hard to say what the conditions will be when they come back each year, as they face incredible obstacles when returning to spawn.

The final salmon redd survey counts were not fully quantified by the time of publication. But the trend is clear. It's a very low year for salmon on the South Fork. In contrast, on the mainstem Trinity River there are already more redds created this year than were counted overall last year.