

# Conservation

## No Negative Impacts from Salmon Supplementation/By Michael Hamilton

**D**espite the long history of stocking hatchery salmon into streams, few large-scale evaluations of impacts to the status of resident fish such as wild rainbow trout have been conducted. Fortunately, in the case of the Yakama Nation's salmon supplementation and reintroduction program, developed to restore historic stocks of chinook, coho, and sockeye salmon to the upper Yakima River Basin, extensive evaluation has been the rule, not the exception.

"We had the foresight to establish a research and monitoring program in the late 1980s to address concerns that salmon hatchery supplementation may negatively affect the resident trout population in the upper Yakima River," says Washington Department of Fish and Wildlife (WDFW) biologist Gabriel Temple.

Temple and his fellow WDFW biologists, along with Yakama Nation scientists, have published lengthy reports in 2007, 2010, 2012, and 2013 examining in great detail potential changes to trout abundance, habitat, and biomass. Temple's team of interactive species experts have employed a variety of tactics to reach their conclusions, including backpack electrofishing and snorkeling in tributaries, and drift-boat electrofishing in the main river. "Results from our monitoring program indicate that there has not been any significant decline in the abundance, size, or distribution of main-stem Yakima River rainbow trout after approximately 1 million supplementation salmon have been released in the river annually beginning in 1999," notes Temple.

In fact, the latest WDFW report, "Ecological Interactions Between Non-target Taxa of Concern and Hatchery Supplemented Salmon" (May 2013), notes that "the total abundance of rainbow trout estimated in the main stem Yakima River in 2102 was the second largest on record."

The report also found that, in general, the density of rainbow trout in Yakima Basin tributary streams, such as Taneum and Swauk Creeks and the main-stem Teanaway River, was quite high considering the environmental conditions that exist within them. "The increasing trend in total abundance is statistically significant, meaning the observed gradual increase is real and not likely due to chance; however, we need to persist with our monitoring to measure ecologic interactions between species," Temple adds.

Considering the size and scope of the Yakama's salmon

supplementation program, scientists such as Dave Fast, senior research manager with Yakama Nation Fisheries, says there will be no lack of data to continue research and monitoring efforts. He notes, "Beginning in 1999, approximately 800,000 spring chinook salmon smolts have been released annually in the upper reaches of the

Yakima River—primarily the 85 miles of river that fly anglers know as Roza Dam to Easton."

Fast explains that wild brood stock is intercepted at Roza Dam in April and May, then trucked to the tribe's Cle Elum facility, where the eggs are collected. When the smolts reach 4 to 5 inches, they are released at three acclimatization sites: near Easton, near Thorpe, and in the North Fork Tean-

away River. In addition, Fast says, the Yakamas have reintroduced a run of summer chinook. Tribal biologists collect eggs from hatchery wild stock at Wells Dam on the Columbia. The eggs are incubated and the fish are released on a lower stretch of the Naches River, a tributary of the Yakima.

"Our coho salmon release locations in the upper Yakima River have been variable since 1999, as the feasibility of reestablishing depleted coho runs into Yakima Basin tributaries, main-stem areas, and reservoirs continues to be evaluated," adds Fast. He says that coho smolts have been the primary life stage released, although experimental releases of fry and adults have also been made.

Brood stock has generally come from lower Columbia River sources, although one long-term goal of the program is to transition to localized brood stock when sufficient numbers of adults return. Also, Fast says, adult sockeye salmon migrating up the Columbia River are collected from Priest Rapids Dam in the summer and are transported to the Cle Elum River above Lake Cle Elum, where they eventually will spawn in the lake.

Current data collected by WDFW and Yakama Nation scientists after 11 years of research and monitoring the Yakama's salmon supplementation and reintroduction program indicates that there has not been any significant negative effect on rainbow trout in the upper Yakima River Basin. Further, the information concludes that the abundance and the size of catchable-size rainbow trout have generally increased during the period salmon have been released in the Yakima River, and overall their distribution has remained unchanged.



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