

Outplanting Adult Hatchery Fish Into the Stream as a Way to Increase Natural Production

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In August of 2000, the Confederated Tribes of the Warm Springs Reservation of Oregon and the United States Fish and Wildlife Service began a spring Chinook salmon (*Oncorhynchus tshawytscha*) adult outplanting program in Shitike Creek, a tributary of the Deschutes River. The goal of the outplanting program is to increase fish production in Shitike Creek by having adult hatchery spring Chinook salmon spawn naturally in the stream. Surplus hatchery spring Chinook salmon returning to Warm Springs National Fish Hatchery on the Warm Springs River are held at the hatchery until late August or early September, transported to Shitike Creek, and released into the stream. A monitoring and evaluation program has been developed to (1) assess the distribution and behavior of outplanted hatchery spring Chinook salmon and (2) estimate the relative reproductive success of natural-origin and outplanted hatchery-origin spring Chinook salmon. A subsample of the outplanted fish is radio-tagged and tracked upon release. Genetic samples are collected from all outplanted hatchery Chinook and a subsample of natural origin Chinook. A rotary screw trap is used to collect genetic samples from outmigrating juvenile fish. The relative reproductive success of outplanted and natural origin Chinook will be compared using DNA assignment tests and pedigree analyses. Information gathered from the monitoring program will be used to evaluate the effectiveness of outplanting adult hatchery fish as way to increase natural production in underseeded streams. Preliminary results will be discussed in the paper.