Precociously mature salmon on the spawning grounds

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Artificial propagation of Chinook salmon (*Oncorhynchus tshawytscha*) has the potential to alter the abundance and distribution of males that precociously mature in freshwater and thereby influence ecological and genetic interactions in the natural environment. Previous research indicates that the Cle Elum Supplementation and Research Facility (CESRF) has produced and released an average of 129,249 precocious males per year into the upper Yakima Basin between 1999 and 2008. We investigated the abundance and distribution of precociously mature hatchery and natural origin male spring Chinook salmon during the spawning season in the Yakima River. We counted the number of precocious males on the spawning grounds while snorkeling during the peak of spawning, and electrofished to determine abundance and distribution of precocious males away from redds. Numbers of hatchery precocious males present per active redd in 2008 (0.30) were the greatest observed since the first year of supplementation. However, these levels are below those thought to suggest genetic risk to the population. Hatchery and natural origin precocious males were both found throughout the spawning range during the spawning season, although differences in distribution between origins were detected ($P<0.05$). Hatchery origin precocious males on and away from redds were more often in areas of low spawning density.