

A Comparison of Reproductive Success In Naturally Spawning Wild- and Hatchery- Origin Male Spring Chinook

Steve Schroder, Washington Department of Fish and Wildlife, Olympia, Wa
Curtis Knudsen, Oncorh Consulting, Olympia, Wa
Todd Pearsons, Washington Department of Fish and Wildlife, Ellensburg, Wa
Sewall Young, Washington Department of Fish and Wildlife, Olympia, Wa
Todd Kassler, Washington Department of Fish and Wildlife, Olympia, Wa
David Fast, Yakama Nation, Toppenish, Wa
Bruce Watson, Mobrاند Biometrics Inc, Vashon Island, Wa
Jennifer Scott, Washington Department of Fish and Wildlife, Cle Elum, Wa

Email Address of Presenter: schrosls@wdf.wa.gov (360) 902-2751

Abstract

Reproductive success in wild- and first generation hatchery-origin spring Chinook males was examined by allowing the fish to compete for spawning opportunities in two sections of an observation stream. Behavioral observations were used to characterize the frequency of aggression and courting activities. Microsatellite DNA from each male and fry collected from the observation stream were used in pedigree analyses to estimate reproductive success. The coefficient of variation in male reproductive success equaled 116 and 86% in the two populations. No differences were detected in reproductive success due to hatchery or wild origin. Nor were any behavioral differences found between hatchery and wild males. Although statistical power was low due to intrinsic variation a great deal of overlap existed in the reproductive success values of hatchery and wild males. Significant disparities existed among the males on their ability to produce offspring. Males achieving high reproductive success mated with numerous females, were socially dominant, aggressive, and tended to stay in localized areas, courting and spawning with females that were adjacent to one another.