

Implementation of hydraulic redd sampling and two-year smolt rearing programs to reduce domestication in steelhead supplementation programs

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In 2006, NOAA Fisheries, Northwest Fisheries Science Center and collaborators initiated a large-scale, long-term test of supplementation for ESA-listed steelhead in Hood Canal. The study involves supplementing three populations with locally derived fish collected as embryos from natural redds. Supplemented populations and three additional (control) populations are monitored for abundance, productivity, and genetic and life history diversity. In attempts to reduce inadvertent domestication selection the supplementation programs do not involve any artificial spawning. All fish spawn naturally and embryos are collected at the eyed stage of development. Furthermore, juveniles are reared to the modal age at smoltification (age-2) by manipulating ration. This presentation 1) provides a basis for the hypothesis that yearling smolt programs select for rapid growth rates and associated behavioral traits, 2) describes the methods used to initiate and carry out two-year smolt programs, and 3) provides preliminary data on growth rates for each of the three populations.