Title:
Comparisons of Growth, Dominance and Precocity between Offspring of First Generation Hatchery and Wild Chinook Salmon (*Oncorhynchus tshawytscha*)

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Summary of Presentation:
As a result of domestication selection hatchery fish are consistently distinct from their wild counterparts. Studies have shown that hatchery fish display unique physiological and behavioral traits that, through introgression, can be detrimental to the evolved adaptations of wild stocks. Most studies compare the fitness of hatchery and wild fish after several generations of production. This study is unique in that I compared sequential growth measurements of offspring from crossings of first generation hatchery, wild and hatchery x wild chinook salmon (*Oncorhynchus tshawytscha*), controlling for environment as they were all reared at the Cle Elum Supplementation and Research Facility. I also examined differences in dominance based upon dyadic feeding experiments. I found that juveniles from first generation hatchery and hatchery x wild crossings maintained higher growth rates than juveniles from wild crossings. From the dominance experiments I found that size-matched wild juveniles were significantly more dominant than hatchery juveniles.

Precocity in chinook salmon is defined as early sexual maturation and a forgoing of more lengthy development in an attempt to spawn in one's first or second year. This study examined the effects of food abundance, social status and genetics on precocity. The genetic component comprised a comparison of juveniles from the different parental crossings. Relationships between the factors of high growth rate and dominance with precocity were also expected. However, a complete absence of precocity was found for low and high food levels, the three parental crosses and dominant and subordinate categories of fish.