**Steelhead Hatchery – Wild Introgression in Puget Sound**

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The viability of wild steelhead trout (*Oncorhynchus mykiss*) populations in Puget Sound, WA, may be affected by their reproductive interaction with domesticated hatchery-origin fish. Hatchery-wild hybrid fish may exhibit lower fitness than pure wild fish, and this effect may lower the overall reproductive success of wild populations. Although fitness effects have not yet been demonstrated in Puget Sound steelhead, hybrid fish, especially juvenile hybrids, may be more vulnerable to disease or predation, for example, or may be less equipped to secure vital food resources while at sea, compared with wild fish. In addition, climate change may alter or reduce food resources, or may add pathogens or predators, which may further compromise hybrid fish. The first step to investigate the consequences of hatchery-wild hybridization in Puget Sound populations is to identify hatchery-lineage and hybrid fish that are of natural origin, which is difficult due to the genetic similarities between the hatchery and wild populations. I used single nucleotide polymorphisms (SNPs) to genotype hatchery- and natural-origin populations, and employed a custom adaptation of the program STRUCTURE to determine what proportions of natural-origin populations of steelhead are composed of hatchery-lineage and hybrid fish. The method adjusts proportions from the program STRUCTURE to account for assignment errors resulting from the genetic similarity between the hatchery and wild fish. I summarize the proportion of hatchery-lineage and hybrid fish in a population using the metric PEHC (Proportion Effective Hatchery Contribution) as a measure of potential gene flow rather than pHOS (proportion hatchery-origin spawners), which is more typically used. I provide PEHC point estimates and 90% confidence intervals for the effects of both early winter (Chambers) and early summer (Skamania) programs on wild steelhead populations in the Green, Snohomish, Stillaguamish, Skagit, and Nooksack rivers.