**Hatchery practices led to introgressive hybridization between major Columbia River Chinook salmon lineages within the Klickitat river subasin**

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Major lineages of anadromous salmonids are generally resilient to natural introgressive hybridization, however Klickitat River spring-run Chinook salmon (KRSC) have an enigmatic origin due to their intermediate genetic and geographic relationship among Columbia River Chinook salmon lineages. We evaluated whether anthropogenic versus natural processes were responsible for the potentially introgressed genetic composition of KRSC and considered management strategies in the context of our results. We genotyped 2443 fish (32 collections) across 90 SNP loci to clarify the relationship of KRSC among the three major Columbia River lineages (Lower Columbia, ocean-, and stream-type), and to quantify introgression observed in KRSC collections. Samples were collected over a 28 year time period (1980-2008) from the Klickitat River to test for recent temporal changes in allele frequencies in this population. We simulated four processes that potentially caused KRSC introgression: recent (~5 generations) and historical (>200 generations) admixture, isolation-by-distance gene-flow (IBD), and natural selection. We observed a shift in genetic composition between older (1980's) to newer (2000's) KRSC collections due to decline of pure stream-type individuals and the timing of this shift is coincident with relevant changes in hatchery practices. Based on simulation results and evidence from the time-series samples, a recent, anthropogenically-caused admixture was most likely responsible for introgression of KRSC. To mitigate potential for negative long term effects, the hatchery broodstock program may need to incorporate fish from adjacent basins of the mid-Columbia River to shift allele frequencies towards a more typical stock of spring-run Chinook salmon that functions within the larger metapopulation.