

Genetic Analysis of Yakima Basin Bull Trout (*Salvelinus confluentus*)

MAUREEN P. SMALL, DENISE HAWKINS AND JENNIFER VON BARGEN; *Washington Department of Fish and Wildlife, Conservation Division, Genetics Lab*

A total of 462 bull trout samples from the Yakima River Basin were analyzed at 16 standardized microsatellite loci. Genetic analysis identified at least 11 distinct bull trout populations in the Yakima River Basin. Pairwise F_{ST} tests and tests of genotypic differentiation indicated highly significant differences among population collections with the exception of those from the American River and Union Creek. Although these were not significantly different from each other, a combined collection generated signals indicating a mixture of differentiated groups. Eight bull trout collected from NF Tieton and within Tieton basin also appeared to form a genetically distinct group, suggesting another possible spawning population in the Tieton basin. Genetic data were used to confirm population of origin for juvenile samples and to identify adult samples collected by the Bureau of Reclamation in the Tieton pool below Rimrock Dam. Genetic data were also used to infer population of origin for adults with unknown population membership collected as part of a WDFW telemetry study of bull trout movement and adults collected by WDFW throughout the Yakima River basin.