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**Presentation Title: Origin and Assignment of Hatchery and Wild Steelhead Spawning in Bakeoven and Buck Hollow Creeks, Deschutes River**

Abstract for the 2018 Pacific Coast Steelhead Management Meeting

We identified the origin of steelhead (*Oncorhynchus. mykiss*) and fluvial redband trout (*O. mykiss* gairdneri) spawning in Buck Hollow and Bakeoven Creeks, eastside tributaries of the Deschutes River, from 2011 to 2017. Hatchery-origin steelhead were identified through the use of Parentage Based Tagging (PBT) used to identify broodstock at hatcheries in the Snake River basin. We used PBT results from these hatcheries to identify parent-pairs of adult offspring spawning in Bakeoven and Buck Hollow Creeks. Fin clips and external marks identified steelhead from the local Round Butte Hatchery, and coded wire tags and PIT tags identified steelhead from locations throughout the Columbia River Basin. Natural-origin steelhead and fluvial redband trout were identified using PBT as the juvenile or adult offspring of the parent-pairs collected in Bakeoven and Buck Hollow Creeks. Using these assignment methods, we were able to determine the hatchery origin, and release locations for hatchery-stray steelhead spawning in these tributaries. In addition, natural-origin assignments could be assessed and compared to the expected assignment rates given our known (and relatively high) trapping efficiencies. These assignment rates were much lower than expected, suggesting a prevalent source (or sources) of *O. mykiss* parents that were not sampled. The spawn-run timing of hatchery-origin steelhead was also evaluated and compared to natural-origin steelhead and fluvial redband trout, providing insight into the potential success of hatchery spawners. The assignment and source of hatchery and natural-origin parents of fish returning to these tributaries offers understanding into the complex and diverse parent sources of Deschutes River Steelhead.