

ABSTRACT: From 2001 through 2005, we documented the life history characteristics of rainbow trout *Oncorhynchus mykiss* populations prior to anadromous fish reintroduction in the White Salmon River with the pending removal of Condit Dam in 2008. The dam has blocked upstream migration of anadromous fish at river kilometer 5.1 since 1913. To document the existing *O. mykiss* life history diversity, we combined radio and passive integrated transponder (PIT) tagging technologies. Radio tagging ($n = 64$) was performed in the mainstem White Salmon River from the reservoir above Condit Dam through the likely zone of anadromous fish recolonization (rkm 5.1 - 19.7). To document movement and growth patterns in Rattlesnake Creek and the White Salmon River, an instream PIT-tag interrogation system was installed in Rattlesnake Creek at rkm 0.2, and PIT tagging ($n = 4,856$) was conducted in several reaches. The *O. mykiss* in Rattlesnake Creek and White Salmon River exhibited a wide spectrum of migratory tendencies including resident, fluvial, adfluvial, and anadromous life histories. Our radio-tagging and PIT-tagging efforts in Rattlesnake Creek and the White Salmon River showed that important linkages exist between the mainstem White Salmon River and tributary populations of *O. mykiss*. Some evidence showed that the connection to the Columbia River and the Pacific Ocean has not been severed, which indicates that rainbow trout above Condit Dam have potential to be an important source for reestablishing the steelhead life history to the upper White Salmon River with the removal of Condit Dam. The knowledge gained by using a fusion of technologies was substantially greater than the use of a single technology.

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