

Using Passive Integrated Transponder Technology to Characterize and Monitor *Oncorhynchus mykiss* Populations in White Creek (Klickitat River, WA)

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The White Creek PIT tag study is ongoing work initiated in June 2009 to characterize and monitor *Oncorhynchus mykiss* populations in the White Creek sub-basin. To quantify and monitor salmonid life history strategies and movement patterns (e.g. juvenile steelhead out-migrant and adult steelhead emigration timing), a PIT tag interrogation array was installed in lower White Creek near the confluence with the Klickitat River. Twenty-five tagging sites were selected to capture the physical heterogeneity present throughout the known anadromous-bearing portion of the watershed. Single-pass electrofishing surveys are annually conducted to PIT tag fish and to compare *O. mykiss* relative abundance estimates among sites.

Since the summer of 2009, 6,053 *O. mykiss* have been PIT tagged. Of the total fish tagged, 943 detections occurred at the White Creek array. Juvenile steelhead migrants exhibited a bi-modal out-migration pattern. An early pulse of out-migrants exited White Creek each winter coinciding with the ascending limb of the hydrograph. The majority of fish out-migrated in the spring, which coincided with the receding limb of the hydrograph. *O. mykiss* in the White Creek watershed display numerous life history types that appear to function as a hedge-betting strategy to ensure persistence in a highly stochastic environment. Preliminary results from the 2009 tagging cohort indicate that approximately 25% of the tagged individuals were detected at the White Creek array and 3 individuals returned to Bonneville Dam as steelhead adults.