

IMPLEMENTATION AND ASSESSMENT OF UPSTREAM PASSAGE FOR FLUVIAL BULL TROUT AND WESTLOPE CUTTHROAT TROUT IN A LARGE CLARK FORK RIVER TRIBUTARY^{AFS}

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Rattlesnake Creek is a large (bankfull discharge ~ 1000 cfs), relatively pristine fourth order tributary of the Clark Fork River near Missoula, Montana that supports a mixed (native and non-native) salmonid community. The stream has been the focus of a series of fishery enhancement efforts in 1999-2003 that culminated in an upstream fish passage project at Mountain Water Company Dam located four miles from the mouth. The goal of the project was to enhance migratory bull trout (*Salvelinus confluentus*) and westslope cutthroat trout (*Oncorhynchus clarki lewisi*) populations by affording adults access to ~ 15 miles of upstream natal spawning areas that have been completely inaccessible to fluvial trout for nearly a century. Project implementation was preceded by a series of disease, genetics, and species composition surveys, as well as testing of aspects associated with final fish ladder design, operation and efficiency. In 2001-2003, we also evaluated the efficacy of the project using radio telemetry, floy and PIT tagging, redd counts and a fish trap operated just upstream of the fish ladder. Monitoring indicated that the permanent fish ladder is an effective means of passing adult migratory trout past the dam. The timing of adult trout migrations was closely tied to stream temperature and discharge. Fish ladder operational schedules were developed that encourage species-selective fish passage. Project monitoring also provided insight on adult fluvial trout growth rates, movements, mortality rates and habitat use.