

A HISTORY OF INSTREAM FLOW PROTECTION IN REESE CREEK, YELLOWSTONE NATIONAL PARK^{AFS}

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National parks are regarded as pristine environments where optimal opportunities for native fish species preservation exist, yet aquatic habitat degradation does occur, often in boundary areas where only a portion of a watershed falls under National Park Service (NPS)

jurisdiction. Reese Creek, a small stream located at the northern boundary of Yellowstone National Park, was historically dewatered for irrigation by adjacent landowners. This stream is one of only a dozen Yellowstone River tributaries between Yellowstone Park and Livingston, MT. where Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*) can spawn. In the early 1980s, NPS began negotiating with private irrigators to obtain an instream flow, but an acceptable agreement was not reached until 1991. Periodic sampling by U.S. Fish and Wildlife Service in 1984, 1986, and 1992 documented spawning by cutthroat trout, rainbow trout (*O. mykiss*), and hybrids of the two species. To provide better protection for fish using Reese Creek, in 1991 NPS added rotating self-cleaning fish screens to the diversion head gates in order to prevent fry entrainment into irrigation ditches. Unfortunately, improper design limited the usefulness of the screens. In 1999, improvements to the diversion structures, including installation of a solar power source, were completed. Subsequent sampling has yielded few fish in the irrigation ditches. Despite these improvements, additional genetic and population sampling and stream flow modeling at points of diversion need to be completed before Reese Creek can be recommended as a Yellowstone cutthroat trout restoration site.