Fish-Friendly Irrigation Methods on Small Western Montana Streams: Successes, Failures and Funding Opportunities[AFS]

Ron Pierce and Ladd Knotek
Montana Fish, Wildlife and Parks
3201 Spurgin Rd., Missoula, MT 59804
bigfish@blackfoot.net

Mark Lere
Montana Fish, Wildlife and Parks
1420 East 6th Ave., Helena, MT 59620-0701

Fisheries-related irrigation impacts in western Montana take three primary forms: 1) loss of habitat to dewatering, 2) reduced fish passage, and 3) entrainment of out-migrant fish to irrigation ditches. In west-central Montana, native salmonids (westslope cutthroat trout and bull trout) are heavily impacted by normal irrigation practices because they rely on diverted tributaries for spawning/rearing and exhibit movements that coincide with the irrigation season. Correcting fish passage and entrainment impacts during irrigation diversion operation usually requires some form of fish ladder and ditch screening device. Designs should: 1) consider the geomorphic and hydrologic setting, 2) identify specific fisheries and irrigation objectives, and 3) consider maintenance needs in order to be effective. The pros, cons and monitoring results of several fish ladders (Denil, step-pool and natural channel bypass) and five fish screening devices (flat plate screens (self-cleaning and manual), Brencail, rotating electric drums, infiltration galleries and turbulent fountain fish screens) are outlined. The Fisheries Restoration and Irrigation Mitigation Act (FRIMA), passed by Congress in 2000, established a funding program to plan, design and construct fish screens, fish passage devices and related features to mitigate impacts on fisheries associated with irrigation system water diversions by local government entities in the Pacific drainage of Oregon, Washington, Idaho and Montana. The FY2002 appropriation for Montana ($1 million) was used to fund 15 fish screen and passage projects located on waters west of the continental divide.