
**BIAS ASSOCIATED WITH ELECTROFISHING ESTIMATES FOR MOUNTAIN
WHITEFISH IN RIVERS: FOUR DIFFERENT WAYS WE KILLED
WHITEFISH THIS SUMMER**

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Habitat loss, competition from exotic species, and a warming environment clearly are changing cold-water aquatic communities in western North America. As a result, the need to accurately quantify and detect trends in many species, rather than just threatened and endangered salmonine stocks whose low densities often preclude statistical certainty, is critical. Conventional monitoring has ignored many sympatric species, like mountain

whitefish (*Prosopium williamsoni*). One challenge to monitoring other species is a lack of information on how to accurately sample their densities and monitor population status. Despite their broad distribution and locally high densities across their range in western North America, anecdotal evidence suggests their densities are declining and their distributions are changing, similar to those of sympatric salmonines. However, other anecdotal evidence suggests they may be more sensitive to electrofishing than salmonines. Thus, conventional monitoring may lead to biased estimates. We evaluated effects of capture technique, handling, and density on the survival of caged mountain whitefish in four separate week-long simulated mark recapture estimate studies in three sections of the Bitterroot River, Montana. In each study mountain whitefish succumbed to a variety of stressors and mortality ranged from 46-87 percent. Mortality was significantly greater than compared to paired treatments with rainbow trout (*Oncorhynchus mykiss*), where none died. As a result of the effects of a variety of stressors on survival and condition, we caution against mark recapture estimates for mountain whitefish in rivers.