An Examination of 1995 and 1996 Creel Census Data for the Madison River, Montana and Evidence of Possible Effects Due to Whirling Disease [AFS]

Leanne H. Roulson
Garcia and Associates, Bozeman, MT 59718.

The parasite that causes whirling disease was first discovered in Montana in rainbow trout from the Madison River in December 1994. In response, the Montana Department of Fish, Wildlife and Parks (MFWP) initiated an intensive creel census survey in 1995 and

1996. In 1995, the creel survey covered the entire Madison River from Quake Lake to the headwaters of the Missouri River at Three Forks; and in 1996, the section from Slide Inn to Windy Point (~20 river miles) was surveyed. The results from these two surveys, when compared with historical creel censuses, provide a great deal of insight into the effects of the disease on the fishery and the angling community. The Madison River rainbow trout fishery declined significantly from pre-whirling disease levels in the late 1970s and early 1980s to the period post-1994. The decline is evident in catch rate data, population estimates, and angler use surveys. However, it appears that as whirling disease was reducing the numbers of rainbow trout, the brown trout population became proportionally more available for capture by anglers. Trout population declines as measured by the annual electrofishing surveys paralleled the catch rate declines recorded in the creel surveys. Despite these declines, the anglers who chose to fish the Madison River were generally satisfied with their fishing experience according to the 1995 angler satisfaction survey. However, MFWP's biennial mail-in surveys have shown a slight decrease in angler use of the Madison River. The economic and ecological impacts of whirling disease affect anglers and many non-angling members of the Montana community. The Madison generates a significant amount of income for the surrounding area, and for the state. By fully understanding how whirling disease has affected the Madison River fishery, FWP hopes to determine the best management strategy to facilitate recovery.