The Influence of Beaver on Brook Trout Invasion and Native Westslope Cutthroat Trout Displacement in Rocky Mountain Streams of Southwestern Montana

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Invasion of ecosystems by nonnative species is often responsible for reshaping natural biological communities. In the Rocky Mountains, brook trout (*Salvelinus fontinalis*) invasion has been implicated in the decline of westslope cutthroat trout (*Oncorhynchus clarkii lewisi*), a native species of special concern in Montana. Although research has established that negative interactions between these species likely occur at the juvenile stage, there remain gaps in our understanding of the landscape factors that influence the extent of invasion, and resulting cutthroat declines. For example, beaver (*Castor canadensis*) are capable of altering stream habitat characteristics considerably, but we do not know how beaver disturbance influences brook trout invasion success, and the consequences for native cutthroat trout. To address this, I used temperature loggers, mark-recapture, and habitat surveys to establish how beaver affect (i) brook and cutthroat trout distributions within watersheds, and (ii) species interactions between cutthroat and brook trout. Distribution and temperature data show that beaver-induced stream warming sustains brook trout invasion at higher elevations, while brook trout presence acts to reduce cutthroat trout growth rates. Ongoing analyses of growth rates from scales, and examination of demographic rates of both species will lend greater insight into how beaver impact this system.