**Is it enough? Passive Restoration in a Western Colorado Stream**

Cattle presence and beaver extirpation has led to incision, erosion, decreased vegetation, and eutrophication in many streams across North America, including Kimball Creek, a third order stream in western Colorado. These conditions have led to the localized extirpation of several native aquatic species, including the Colorado Cutthroat trout (*Oncorhynchus clarki pleuriticus*). For the last 20 years, beavers have been allowed to return and grazing pressure has decreased in the Kimball Creek system. Due to these passive restoration techniques, water retention and riparian vegetation have increased. I propose to investigate whether these habitat improvements have restored the stream to a condition capable of supporting a population of Cutthroat trout. Specifically, I will focus on how different levels of nutrients and shade affect water chemistry, primary production, and macroinvertebrate communities in beaver ponds. I will investigate various levels of nutrients and shade by using a mesocosm experiment that mimics natural conditions recorded in beaver ponds in Kimball Creek. I will then compare my results to the requirements of Cutthroat trout survival. Since the level of degradation observed in Kimball Creek is common in many small western streams, it is important to examine if small measures of passive restoration can allow the return of native aquatic species. I hypothesize that even in its degraded state, Cutthroat trout could survive in Kimball Creek.