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*Macroinvertebrate and Nutrient Response to Stream Water Quality After a Wildfire on Medano Creek*

This study evaluated water quality and macroinvertebrate population differences on two affected sites and one control in the Medano Creek drainage after a wildfire. Methods followed River Watch protocols for all samples collected, except turbidity which was measured using a turbidimeter at the Bureau of Reclamation. It was found that dissolved oxygen was higher on the control, and pH, alkalinity metals and turbidity was higher on both burn sites compared to the control. Chloride, sulfate and phosphates were all higher on the burn sites for May and November samples. During the July macroinvertebrate control sample, mayflies composed 71% and weighed 768.5 mg, whereas caddis and stoneflies combined at ~5% and ~190 mg of the population. Combined mayflies, caddisflies, and stoneflies on both of the burned sites were less than 50% of the total macroinvertebrates. Caddisflies were more numerous, had longer lengths, and a higher biomass on the lower burn site compared to both the middle burn and control sites. For the July sample, there was more species diversity and greater numbers at the control compared to burned sites. During September samples collected after a flood event, all population numbers were lower, but particularly on the burned sites, with the control sample at 339 insects, and the burned sites at 19 and 14 respectively. Because of all the data collected from April through November, it can be concluded that wildfire does have an impact on water quality and macroinvertebrate populations especially after sedimentation event which was predicted in the hypothesis.