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*The Effects of Wildfire on Stream Water Quality on Medano Creek*

During the summer of 2010, a wildfire caused by a lightning strike burned over 6,200 acres of the riparian, montane, and sub-alpine forest of Medano Creek. The water of Medano Creek is home to endangered Rio Grande Cutthroat trout, and concern exists about the effects of sedimentation within the creek due to the fire. The purpose of this project is to examine the water quality of Medano Creek and document changes that could affect the stream's ecology. The parameters tested were pH, dissolved oxygen, alkalinity, hardness, metals, turbidity and temperature, which were collected using River Watch protocols. For turbidity, a Hach turbidimeter from the Bureau of Reclamation was used. All data for all sampled parameters from November through February show that no significant differences exist between control and burn sites. pH on the control site ranged from 7.48 to 7.74 and the burn sites range from 7.57 to 7.93. Turbidity is noticeably higher in the burn areas, ranging from 3.3 to 6.0 FAU, but is not significantly different from the control which ranges from 0.67 to 2.3 FAU. Alkalinity and hardness for all three sites both range between 42 to 52 mg/L CaCO<sub>3</sub>. There was no significant difference in temperature between control and burn sites (range between 0<sub>i</sub> and 1<sub>i</sub> C, all sites). Based on testing to date, the Medano fire has had no major impact on the water quality of Medano Creek during the winter months. Sampling will continue throughout the run-off and following months.