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*Distinguishing Microbial Communities in Low Elevation Ponderosa Pine Forests After Prescribed and Natural Burns*

The resiliency of a forest ecosystem to fires depends on the microbial communities, and soil nutrients present in those environments. Fire is essential for the health of ponderosa (*Pinus ponderosa*) forests, like those found in many western regions, and have helped to shape ecological processes in these ecosystems. Soil microbial communities and soil conditions are important parts of forest ecosystems and can be impacted by the changes to the soil surface fires can generate. Here we investigate the relationship between soil microbial communities, soil nutrients, and forest resiliency in low elevation ponderosa forests in Boulder County, Colorado. Samples were taken from five different treatment sites that included two prescribed burns, one wildfire, and two controls. This study is the first in Boulder County to look at the impacts of fire on soil microbial communities and soil conditions in Ponderosa ecosystems. Water content and water capacity were analyzed and DNA electrophoresis was used to analyze the samples. DNA electrophoresis band comparisons revealed distinct differences among the treatments implying differences in microbial community fingerprints. Water holding capacity, a key indicator of soil nutrient availability, was found to have no statistical differences between treatments. This study suggests more research to be done to identify specific microbial species present in each treatment and further analysis of soil nutrients.