

Conor Croskery  
Hydrology MS  
University of Nevada, Reno  
Gabrielle Boisrame

Covering approximately one third of our country, sagebrush dominated ecosystems are an important part of the continental United States' landscape. The effects of wildfires on the soil infiltration properties in sagebrush ecosystems are poorly understood and, as these areas experience more frequent wildfires, become more relevant. In this study, we measure the volumetric water content and infiltration properties of the soil, and the vegetation within the plots before and after burning. Three plots were chosen at the University of Nevada, Reno main-station farm in southern Reno in a section of their field that is mainly composed of rabbitbrush shrubs. The location of these test plots was chosen based on the similarity in vegetation cover to the plots that are at the Red Rock Road site, located north-west of Reno. The volumetric water content of the soil was measured using a HydroSense II probe in a grid pattern around the plots, with vegetation height being measured using a meter stick at each point the HydroSense II probe reading was taken. Soil infiltration measurements were taken by utilizing the water drop penetration test at the soil surface, 1cm depth, and 3cm depth, and a mini-disc infiltrometer at the soil surface, and at 3cm of depth. Water drop penetration results found that the highest time for absorption was in the burned open areas, with the largest of these numbers being at 1 cm of depth. Infiltration rates are highest at the litter surface of the open sections and lowest at the measurement taken in proximity to the shrubs. There was not a significant trend in overall vegetation height with relation to volumetric water content of the soil. The findings and methods from the experiments conducted at the main station test plots will be used at the research plots located near Red Rock Road to make testing more accurate and efficient.