KYLE CLARK, and MARK LESSER. Dept. of Biology, Shepherd University, Shepherdstown, WV, 25443. Effects of Acid Mine Drainage on Plant Community Structure in the Central Appalachians

Acid mine drainage (AMD), is one of the major environmental complications in West Virginia. AMD occurs when abandoned mines leak heavy metals into streams and rivers. AMD leaches into the groundwater, which in turn may have implications on plant community composition and health. Five abandoned mine sites in Tucker County West Virginia were identified and all necessary permissions to conduct research at the sites were obtained. Sites were chosen based on remediation activities ranging from completely reclaimed to unreclaimed. Field work consisted of laying out two transects radiating outwards approximately 200 meters from a highwall. Along each transect two plots were established. Within each plot all mature trees were identified and soil pH was measured. Water samples were collected to find an estimate of iron concentration. Measures of species composition, diversity, and richness were calculated and modelled against soil properties.

Data suggests that the effects of groundwater contamination did not have a negative impact on community composition, diversity, and within species performance. Community composition was predicted to shift from dominance of low pH tolerant species to less tolerant species, and within species performance was expected to rise with distance from mine. Data shows no significant differences between soil pH, species richness and diversity. This study was important for understanding which tree species are able to inhabit acidic soils and if there were any differences with soil pH of mine that has been reclaimed and one that is not.