

WOODY PLANT COLONIZATION OF A RECLAIMED ANTHRACITE SURFACE MINE IN NORTHEASTERN PENNSYLVANIA¹

K. M. Klemow², J. Akakpo, E. Janosov, J. Lor, R. Mercatili, P. Payne, T. Ricker, C. Rizzardi

Abstract. Woody plant colonization was examined within an anthracite surface mine located 10 km southwest of Wilkes-Barre reclaimed in the late 1990s following SMCRA guidelines. Initial investigations conducted in 2003 revealed high density of grasses and legumes planted at the site inhibited colonization by woody species, especially of woody species common to mature forests in the region. However immature black locust (*Robinia pseudoacacia*) ramets were commonly found in the study plots. In the six years following that analysis, the black locust became a dominant woody species, suggesting a conversion from a meadow to developing woodland. To determine whether black locust is facilitating the colonization of later successional hardwood trees onto the reclaimed area, the site was examined using a systematic plot approach in summer and fall 2009. Most plots contained high densities (75%) of cool-season grasses, legumes, and other broadleaf herbs. Black locust trees growing >4' tall were found in 49% of the plots. Plots also included non-native trees introduced during community planting projects in the past five years. No native tree species typical of regional mature forests were noted in any of the plots, however, even as juveniles under black locust canopy. Nor was any evidence of colonization by natives seen at the edge of the mine adjoining a mature forest. These results suggest that even though the site is shifting from meadow to forest, it does not appear to be on a trajectory leading to a species composition typical of regional forests. Thus, introduction of such species may be needed, following an ARRI approach.

Additional key words: *Robinia pseudoacacia*, Wyoming Valley, Inhibition

¹ Poster paper was presented at the 2010 National Meeting of the American Society of Mining and Reclamation, Pittsburgh, PA ***Bridging Reclamation, Science and the Community*** June 5 - 11, 2010. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

² Kenneth M. Klemow, Professor, and Jefe Akakpo, Edmund Janosov, June Lor, Robert Mercatili, Priscella Payne, Tylor Ricker, Chad Rizzardi, Research Associates, Department of Biology, Wilkes University, Wilkes-Barre, PA 18766.