RECOLONIZATION OF RECLAIMED COAL MINE LAND IN WYOMING BY ARTHROPODS AND NEMATODES [1]

V.A. Regula[2] and P.D. Stahl

Abstract: Recovery of sustainable soils is important in surface mine reclamation. Belowground soil fauna contribute too many soil processes including nutrient cycling, mixing of organic and mineral materials, and redistribution of organic matter and microorganisms. Our objective in this study was to examine recolonization of reclaimed mine land sites by soil fauna, arthropods and nematodes. We expect species composition of arthropod and nematode assemblages to be very different in reclaimed soils than in nearby undisturbed soils, since undisturbed soil may have different physical, chemical, and biotic characteristics. Soils were sampled on two surface coal mines in the Powder River Basin of Wyoming. At one mine, a chronosequence of reclaimed sites (less than 1 yr, 6, 11, and 17 yrs) dominated by Wyoming big sagebrush was sampled and at the other mine a chronosequence (10 months, 15, and 27 yrs) dominated by cool season grasses was examined. Nearby undisturbed soils were sampled at each mine for comparison.

Additional Key Words: semiarid, microfauna, nutrient cycles

---

[1] Paper was presented at the 2007 National Meeting of the American Society of Mining and Reclamation, Gillette, WY, 30 Years of SMCRA and Beyond June 2-7, 2007. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

[2]Victoria. A. Regula, Graduate Student, Peter D. Stahl, Associate Professor, Department of Renewable Resources, University of Wyoming, Laramie, WY, 82071