Phosphorus in the Soil Profile of Subtropical Rangelands and Associated Wetlands. (S11-graetz140716-Poster)

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Abstract:

Runoff from subtropical rangelands in Florida is being scrutinized because of its potential contribution of phosphorus (P) to Lake Okeechobee and the Everglades. It has been suggested that runoff water quality correlates with stocking densities of grazing animals. To test this hypothesis, a study is underway at the MacArthur Agro-Ecology Center in south Florida to evaluate the effect of cattle stocking rate on nutrient losses from rangelands. As part of this study, we are measuring the forms of P in the soil profile to evaluate how the P status of the soil affects P concentration in runoff. A control (no cattle) and a high stocking rate treatment were chosen for this study. Within each treatment, soil profiles were sampled in uplands and wetlands to an average depth of 1.5m . Results show that total phosphorus (TP) and water-soluble phosphorus (WSP) concentrations decrease with soil depth. However, grazing density showed no significant difference in P concentrations. A modified version of the Hedley et al. (1981) fractionation procedure will be used to separate various inorganic and organic P pools in the soil.

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