Evaluating Spatial Distribution of Reclaimed Bauxite Mine Soils in Jamaica. (S05-greenberg231055-Poster)

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Abstract:

After surface mining of earthy bauxite (clayey Oxisols high in Al oxides) in Jamaica, mined areas are reshaped with fill material and covered with topsoil. The resulting soils vary in depth to limestone bedrock, rock fragment content, and density of subsoil. In order to aide in post-mined land use planning, soil maps were made of four post-mined sites at a scale of 1:1000. Mapping units were composed of 6 soil types, based on pedon descriptions from pits and auger holes, and 6 slope classes. The post-mined sites mapped were dominated by shallow (<50 cm) soils and slopes of 8 to 25 %, but there were some significant areas of deep (>100 cm) soils on lower slopes. A grid test was performed at one site to test map accuracy and further assess spatial variability of soil types. Soils found at 60 % of the 52 grid points were the same soil types as originally mapped. Moderately deep soil types were the most problematic and least abundant. For future mapping a revised legend with moderately deep soil types as inclusions in shallow and deep areas would be more practical, and perhaps allow for soil mapping with comparable accuracy at smaller map scales.

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