Soil Properties in a South Georgia Borrow Pit Forty Years After Excavation Ceased. (S05-brevik152604-Poster)

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Abstract:

Several borrow pits were excavated to obtain sand during the construction of interstate 75 (I-75) through southern Georgia. One such borrow pit, located about 11 km south of Valdosta, GA, was used in 1961 during construction of a short stretch of I-75 and then abandoned with no efforts at reclamation. The pit contains two tiers, a deep lower part and an upper terrace. Forty years after abandonment there are distinct, naturally occurring vegetative zones within the pit, three of which we have included in this study. The lowest part of the pit has a healthy stand of mixed pine and deciduous trees with little underbrush and abundant leaf litter. Water ponds at the surface during wet periods and trees within this tier show morphological features (i.e., buttressed trunks, dark basal rings) indicative of wet conditions. The upper terrace has sparse vegetation along its lip, no leaf litter, and the water table is deep relative to the rest of the pit. The edge of the pit along the upper terrace reverts to a healthy stand of mixed pine and deciduous trees with grasses, which are absent in other parts of the pit, also present. Water ponds at the surface during wet periods here as well but morphological features of trees do not suggest long-term saturated conditions. This study investigates soil formation in the pit since abandonment and in particular observes relationships between topography within the pit, depth to water table, vegetation, and accumulation of soil organic matter. Although soil formation over only 40 years is slight, there are distinct differences between the three vegetative zones being studied. Soil differences are attributed to differences in topographically controlled access to water which influences vegetation density and type.

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