Pedogenesis of Soils on Pliocene to Holocene aged terraces of the Alabama River. (S05-lynn093029-Poster)

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Abstract:

Abstract: Seven terraces (A through G; high to low) occur along the Alabama River and its tributaries. Layers of well rounded-quartz gravel stabilize the terraces against erosion. Gravel in high terraces can be crushed by hand, but a hammer is needed to break gravel from the low terraces. Remnants of A and B terraces are isolated high points of the dissected landscape today. The A terrace is likely late Pliocene or Pleistocene in age. From 1978 to 2001, soils at 29 sites were described and sampled for characterization. All pedons classify as Ultisols. Chemical and physical data are similar for the 4 higher terraces (A, B, C, D). Depth of weathering decreases for red soils (Rhodic Kandiudults) from terrace A to D. Yellow soils (Plinthic Paleudults) have a discontinuity in the profile that perches water, results in formation of plinthite, and limits the apparent depth of weathering. Profile weathering is less on lower terraces. Paleudults and Hapludults occur on terraces E and F, but only Hapludults on terrace G. Dominant sand mineralogy is siliceous on terraces A through F, and mixed on terrace G. A companion poster presents data on clay mineralogy.

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Presentation Information:

Presentation Date: Monday, November 11, 2002 Presentation Time: 9:00-11:00 am Poster Board Number: 2011

Keywords: River terrace study, Soil chronosequence, Pedologic change with soil age, Soil properties and soil age