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(56) 2011 Annual Meeting, Seattle, Washington

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AAG Annual Meeting

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Black Pond, Tennessee, Revisited: Charcoal, Legacy Sediment, and AMS-dated Macrofossils in a New Core from an Old Site

is part of the Paper Session:

Sedimentary Perspectives on Paleoenvironmental Change I

scheduled on Friday, 4/15/11 at 12:40 PM.

Author(s):

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Abstract:

In 1982, a team of researchers from the University of Tennessee investigating paleoecological and archaeological evidence of human impact on Holocene vegetation recovered a 2.7-m long sediment core from Black Pond, a small (~1 ha), spring-fed pond in the watershed of the Little Tennessee River in eastern Tennessee (35° 37' N, 84° 11' W; 262 m elevation). Radiocarbon dates on two 10-cm sections of bulk sediment from the core indicated that the record spanned approximately 3000 years, and shifts in plant macrofossils, pollen assemblages, and microscopic charcoal concentrations were used to infer environmental conditions during the Woodland, Mississippian, and Historic periods (Criddlebaugh Ph.D. 1984; Delcourt et al., Quaternary Research 26, 1986). In 2007, we recored Black Pond to obtain samples for high-resolution macroscopic charcoal analysis. We recovered core sections from two parallel holes, bottoming out at 2.9 m; obtained ten AMS dates on plant macrofossils; and quantified macroscopic charcoal by sieving contiguous 1-cm samples. Our results document the presence of over 2 m of "Legacy sediment" from historic land clearance and other watershed disturbances, and suggest that evidence of maize cultivation previously interpreted as reflecting activities during the Mississippian archaeological period is likely from historic Cherokee or Euro-American farming. Our results also document repeated local fires throughout the record, and an interval of low sediment accumulation or sediment destruction during the Woodland period, possibly due to extended drought.

Keywords:

Fire, charcoal, paleoecology, lake sediments

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