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**SOIL AND CANEBRAKE CHARACTERISTICS ALONG A LONGITUDINAL GRADIENT**

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**ABSTRACT:** Large stands of *Arundinaria*, called canebrakes, were vital to wildlife and lowland ecosystem functions and historically covered millions of acres in the southeastern United States, but have declined due to human disturbance. Increasing evidence suggests the loss of canebrakes has directly impacted riparian ecosystems, resulting in increased soil erosion, poorer water quality, and decreased flood control. This has led to an increased interest in cane restoration in riparian zones. The primary purpose of this research is to characterize the physical and chemical properties of existing stands of native giant cane, *Arundinaria gigantea* (Walt.) Muhl, and their associated soils at five latitudes across the Mississippi River Alluvial Valley, from southern Illinois to Louisiana, to help determine ideal locations for restoration activities. All sites, Cat Island, LA; Tensas, LA; White River, AR; Reelfoot Lake, TN; and Cache River, IL, consist of multiple native canebrakes on the periphery of cypress (*Taxodium distichum* var. *distichum*) swamps with varied flooding regimes. We collected data on soil texture, carbon/nitrogen ratios, bulk density, as well as cane height, ground-line diameter, stem density, and canebrake size. Preliminary results indicate stem height and diameter were greatest in Arkansas and were inversely correlated with stem density, indicating a tradeoff between individual growth and canebrake expansion. Additional results on soil nutrients and canopy cover will be presented at the conference in November 2011.

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