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**AN ASSESSMENT OF BIOMASS PRODUCTION IN GIANT CANE [ARUNDINARIA GIGANTEA (WALT.) MUHL.] AND ITS EFFECTS ON CHEMICAL AND PHYSICAL SOIL PROPERTIES**

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**ABSTRACT:** Research has demonstrated the effectiveness of giant cane [*Arundinaria gigantea* (Walt.) Muhl.] as riparian buffer vegetation and has gained interest from state and federal agencies to support restoration efforts for this critically endangered species. Unfortunately, little is known about the physical and chemical properties of the soils below canebrakes and how soil characteristics influence above and below ground biomass production. There is also a lack of data regarding the nutrient retention capabilities of this species. At least twenty canebrakes will be sampled throughout the summer of 2011 to assess above and below ground biomass and relate it to soil properties, including: bulk density, soil strength, and infiltration rates. By understanding the relationship between above and below ground biomass, rhizomes can be harvested at the optimal time for transplanting based on the aboveground density. Nutrient retention within the plants will also be determined, providing insight about the physiologic interactions of the species. Preliminary results indicate that the majority of biomass production occurs below ground, which only reinforces giant canes role as an effective nutrient filter and soil stabilizer. Results from this research will improve our understanding of the dynamics of giant cane, as well as help clarify existing data, which is sparse and somewhat conflicting.