

Carbon Sequestration in Riparian Forest Buffers on the Lower Coastal Plain. (S07-potter154802-Poster)

Authors:

- R.L.Potter* - *University of Georgia*
- R.Lowrance - *USDA-ARS, Tifton, GA*

Abstract:

Estimates of carbon sequestration in conservation buffers, especially riparian buffer ecosystems, are highly uncertain. There is interest in quantifying the potential carbon sequestration effects of buffers currently being installed on farms in the U.S. as part of the Conservation Reserve and the Conservation Reserve Enhancement Programs done by USDA in partnership with states. Two decades of research on riparian ecosystems from the Little River Watershed, in the headwaters of the Suwannee River Basin, was available to provide a more detailed estimate of C pools, fluxes, and storage in these systems. Total pools of carbon in buffers are high compared to adjacent row-crop agricultural systems. A preliminary synthesis of data from 14 sites found above ground biomass accounts for about 99 Mg C/ha standing stock. Below ground biomass estimates were about 17 Mg C/ha. Based on an approximate average age of trees of 40 years, this is a net accumulation of about 2.9 Mg C/ha/yr in biomass. Total soil carbon was about 194 Mg/ha. An accumulation rate for the total soil carbon was not estimable with data from these studies. Soil C efflux on six sites averaged 9 Mg/ha/yr.

Corresponding Author Information:

Robert Potter	phone: (706) 542-2968
University of Georgia	fax: (706) 542-6040
Ecology Building	e-mail:
Athens, GA 30602-2202	bpotter@sparc.ecology.uga.edu

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