Shepard, James P. 1994. Effects of forest management on surface water quality in wetland forests. Wetlands 14(1):18-26.

BOTTOMLAND HARDWOOD ECOSYSTEM MANAGEMENT PROJECT

J. A. Stanturf, M. K. Burke, and C. E. Meier
Southern Research Station
USDA Forest Service
Stoneville, MS and Charleston, SC

Federal agency approaches to land management are undergoing a shift from parcel-specific concerns toward a more holistic, ecosystem management approach. Southern bottomland hardwood ecosystems provide important environmental services and commodity goods (Wharton et al. 1982), yet much of our knowledge of these systems comes from anecdotal information. The Bottomland Hardwood Ecosystem Management Project of the U.S. Forest Service is part of a larger, interagency initiative to provide information that will form the scientific basis for ecosystem management of these systems (Harms and Stanturf 1994).

The Project will quantify ecological processes and wetland functions by intensive study of representative systems. Forest Service scientists from Stoneville, MS and Charleston, SC are responsible for coordinating work on two primary sites: Iatt Creek in Louisiana and the Coosawhatchie River in South Carolina. These primary sites are being measured and instrumented to provide information on the functions summarized in Table 1.

Secondary sites, at which only some of the functions will be studied, have been identified on the Altamaha River in Georgia and Buckatunna Creek in Mississippi. Primary sites will be characterized over a two- to three-year period.

Concurrently with the characterization effort, Project scientists and cooperators are taking an adaptive management approach to developing consensus Expert Judgment models of important relationships (Bliss et al. In Press). Social science techniques of networking and Delphi are being used to develop these models, which will guide design of appropriate treatments for the second phase of the Project.

The second phase of the Bottomland Hardwood Ecosystem Management Project includes manipulation of the systems. In this phase, processes and functions judged critical by the Expert Judgment models will be monitored as the systems are manipulated. This will allow us to gauge ecosystem resilience and resistance.

Table 1. Functions to be measured on primary sites

Stand	Ecosystem	Landscape
	Physical Functions	
Climate	Hydroperiod	Flow paths*
Sedimentation		Hydrologic Linkages
		Mass Balance**
	Biological Functions	
Productivity	Biodiversity	Genetic Diversity
Decomposition	NTMBs	Landscape Context
Composition	Mammals	Landscape History
Structure		
Woody Debris		
Snag Production		
Herpetofauna		
Microbial Ecology		
Arthropods		
	Chemical Functions	
Nutrient Cycling	Biogeochemical Transfers	Water Quality
Sediment		
Soil		
Sheetflow*		
Carbon Cycling*		

* Iatt Creek only.

** Coosawhatchie only.

References

Bliss, J.C., Jones, S.B., Stanturf, J.A., Burke, M.K. and Hamner, C.M. In press. Creating a knowledge base for management of southern bottomland hardwood ecosystems. In Proc. "Integrating Social Sciences in Ecosystem Management: A National Challenge", Conf. held 12-14 Dec. 1994, Unicoi Lodge and Conference Center, Helen, GA.

Harms, W.R. and Stanturf, J.A. 1994. A quantitative assessment of the structure and functions of forested wetlands in bottomland hardwood ecosystems in the southern United States. Study Plan FE-SO-4152-110 and FE-SE-4103-207, USDA Forest Service, Southern Research Station. On file, Southern Hardwoods Lab, Stoneville, MS and Center for Forested Wetlands Research, Charleston, SC. 38 pp.

Wharton, C.H., Kitchens, W.M. and Sipe, T.W. 1982. The ecology of bottomland hardwood swamps of the Southeast: A community profile. US Fish and Wildlife Service, Biological Services Program, Washington, D.C. FWS/OBS-81/37. 133 pp.

PLANTS FOR COASTAL WETLANDS OF THE NORTH CENTRAL GULF OF MEXICO

Gary L. Fine
Plant Materials Center Manager
USDA, Soil Conservation Service
Galliano, Louisiana 70354

Specialized plants are essential to coastal wetland restoration, protection, and creation. The USDA Soil Conservation Service (SCS) at the Golden Meadow, Louisiana, Plant Materials Center (PMC) is evaluating several native wetland plant species. The objective is to evaluate and release improved wetland cultivars for conservation use in the coastal wetlands of the North Central Gulf of Mexico.

Some of the species being evaluated include: *Spartina alterniflora* Loisel., *Spartina patens* (Ait.) Muhl., *Spartina spartinae* (Trin.) Hitchc., *Paspalum vaginatum* Sw., and *Avicennia germinans* (L.) L.

Plant performance and adaptation trials are being conducted to determine suitable species for shoreline stabilization, spoilbank and levee stabilization, and barrier island and beach stabilization and enhancement.

Cultural studies are essential to the successful use of conservation plants. Studies are conducted to determine