Forested Wetlands of the Southern United States: A Bibliography

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Abstract

The term forested wetland covers a variety of forest types including mangroves, cypress/tupelo swamps, bottomland hardwoods, pocosins and Carolina bays, flatwoods, and mountain fens. These forests are dominated by woody species that have morphological features, physiological adaptations, and/or reproductive strategies enabling them to achieve maturity and reproduce in an environment where the soils within the rooting zone may be inundated or saturated for various periods during the growing season. Although alluvial floodplains occur along most streams of the United States, they are most extensive in the Atlantic Coastal Plain, Gulf Coastal Plain, and Mississippi Alluvial Plain. Only about half of the original floodplain forests remained by the 1930s, and conversion to agriculture continued at an accelerated pace during the 1960s and 1970s. The purpose of this bibliography is to provide a detailed listing of references for students and researchers of the varied studies conducted in these forest types.

Keywords: Bibliography, bottomland hardwoods, cypress/tupelo swamps, forested wetlands, Southern United States, swamps.

Introduction

In the Southeastern United States, the term forested wetland covers a variety of habitat types ranging from bottomland hardwood forests to alluvial swamp forests that occur on river floodplains. These forests are dominated by woody species that have morphological features, physiological adaptations, and reproductive strategies or both enabling them to achieve maturity and reproduce in an environment where the soils within the rooting zone may be inundated or saturated for various periods during the growing season. Many environmental and biological factors influence the structure and dynamics of these bottomland ecosystems. Although differences in hydrology generally result in distinct broad forest types, associated factors such as soil structure, soil and water pH, nutrient availability and turnover rates, light intensity, and disturbance (natural and manmade) also affect species establishment and growth and tend to complicate distinctions between plant communities. Furthermore, competition for resources, both aboveground and belowground, across the mosaic of microtopographic conditions that typically occur within a river floodplain, results in complex distributions of species.

Although alluvial floodplains occur along most streams of the United States, they are most extensive in the Atlantic Coastal Plain, Gulf Coastal Plain, and Mississippi Alluvial Plain. It is on these broad, flat alluvial deposits, with adequate moisture, that the major expanses of forested wetlands are found. Because of the fertility of these floodplains, forests have been extensively altered by timber harvesting and by farming. Cleared floodplain forests were some of the first ecosystems in the Southern United States to be converted to agriculture by Native Americans. Early colonists also cleared and farmed bottomlands because of the fertility of the soils; planting rice, corn, wheat, and cotton as major crops. Alluvial forests were among the first to be logged in the Southern United States (Cowdrey 1983, Pinchot and Ashe 1897), and almost all southern forests have been harvested one to several times (Heavrin 1981). Of the more than 70 tree species that occur in these forests (Putnam and others 1960), about 40 are of commercial interest (Hosner 1962).

Only about half of the original floodplain forests remained by the 1930s, and conversion to agriculture continued at an accelerated pace during the 1960s and 1970s when the prices for farm crops, especially soybeans, reached unprecedented levels. Much of the converted land has not been productive for sustained agriculture because the soils are poorly drained, and abandoned fields on floodplains typically are invaded by shrubs and woody vines (Battaglia and others 1995). In recent years, a modest program has been undertaken for reestablishment of hardwood forests on floodplain lands formerly used by agriculture (Allen and Kennedy 1989, King and Keeland 1999).
In this bibliography, the term forested wetlands covers a variety of forest types including mangroves, cypress/tupelo swamps, bottomland hardwoods, pocosins and Carolina bays, flatwoods, and mountain fens. Detailed descriptions of the ecology of each of these forest types can be found in Messina and Conner (1998). The purpose of this bibliography is to provide in one place a detailed listing for students and researchers of the varied studies conducted in these forest types.

This bibliography was compiled by first editing the reference lists from several publications on forested wetlands. The reader is encouraged to start with Cypress Swamps (Ewel and Odum 1984), Forested Wetlands (Lugo and others 1990), Biodiversity of the Southeastern United States: Lowland Terrestrial Communities (Martin and others 1993), and Southern Forested Wetlands Ecology and Management (Messina and Conner 1998) as excellent sources for information on forested wetlands.

In addition, the senior author has collected an extensive library of forested wetlands literature during 27 years of research in the Southern United States, and his files were checked against the bibliography listings to make sure all references were included. To bring the bibliography up to date, issues of “Current Contents: Agriculture, Biology and Environmental Sciences” for the years 1995 to 2000 were examined and pertinent references reviewed for inclusion. Environmental journal holdings for 1995 to present held in the Clemson University library were also examined for citations. Contacts were made with forested wetlands researchers, and they were asked to send a list of references, theses, or dissertations for the bibliography. We know that some references have been missed, but we have tried to make this a comprehensive list from which researchers, students, managers, and other interested people may draw from, no matter what their interest is.

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