What Are Wetlands?

by Suzanne Goyer

Wetlands lie in coastal or inland areas and may contain fresh water or salt water. Marshes, swamps, bogs, bays, and pocosins are all types of wetlands. Once thought to be dangerous to public health, wetlands were drained to eliminate their noxious fumes and, once drained, were used for agricultural development. In more recent years they have been drained, filled, and used for agricultural and real estate development, converted to timber plantations, or mined for peat.

"The lack of comprehensive studies over the past century precludes an accurate determination of trends in total wetland use along coastal North Carolina," writes Curtis Richardson, a wetlands specialist at Duke University's School of Forestry and Environmental Studies.[1] Another problem is data comparison. Mike Gantt, of the U.S. Fish and Wildlife Service, explains, "We all know we are losing wetlands, but the problem in [knowing how many] is in comparing data. Different inventories have been done for different reasons."

The U.S. Fish and Wildlife Service is currently classifying and mapping the nation's wetlands as part of the natural wetland inventory. The southeastern states are its highest priority mapping area. Because North Carolina is the last remaining Atlantic seaboard state to complete its inventory of coastal wetlands, Gantt says, "The Fish and Wildlife Service has recently committed $170,000 to complete the wetland inventory in North Carolina. This effort will complement APES" (see page 71 for more on APES, the Albemarle-Pamlico Estuarine Study).

Under the Coastal Area Management Act, the Coastal Resources Commission regulates a relatively small subset of wetlands—regularly and irregularly flooded marshes—through its permit system for areas of environmental concern (AEC). The coastal commission protects these salt marshes fairly well, but thus far it has not designated as AECs freshwater wetlands, such as swamp forests, bottomland hardwoods, pocosins, and bays. Without such a designation, they are not protected under CAMA.

Under Section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers administers a permit program to regulate the discharge of dredged or fill materials into wetlands. But the Corps of Engineers has never considered Section 404 to be a wetlands protection program. In 1979, to identify wetlands for resource management, the U.S. Fish and Wildlife Service began classifying wetlands by their vegetation, soil type, and frequency of flooding. Although this classification system is widely used, the U.S. Army Corps of Engineers has used a narrower system of definition and hence has taken a limited view of its regulatory function. Recent litigation has forced the Corps to expand its jurisdiction over wetlands.[2] (See page 76 for more on the litigation.)

Derb Carter, an environmental lawyer, says that despite the litigation, loopholes exist in the law. "The Corps is actively counseling applicants that they can drain the wetland in a way that does not require a permit," says Carter. Once the area is drained, the hydrology may change, and it may no longer be considered a wetland. This is going against the express intent of the program, says Carter. "The law is adequate, but the implementation by the Corps of the program is not," he adds.

Two types of wetlands are of special concern, pocosins and wetlands west of the coastal plain region. Pocosins comprise over 50 percent of the state's freshwater wetlands and account for 70 percent of the nation's pocosins.[3] The vegetation—pond pine, loblolly and sweet bay, wax myrtle, titi, and fetterbush—is generally evergreen and under 20 feet tall. Black bears and the endangered red-cockaded woodpecker and pine barrens treefrog are among the many wildlife inhabitants. Two important functions of pocosins are stabilizing water quality and balancing salinity in coastal waters.

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coastal developments harmful to the environment. Moreover, these agencies face complex and expanding problems, such as managing how septic tanks, package treatment plants, and agricultural interests affect water quality. These and other related issues, such as regulating urban growth, are discussed in the articles on water quality (see page 53) and land use (see page 94). Responsibility for balancing the fundamental tensions between development and the environment lies with governmental officials—those adopting regulations and administering them.

Below is a brief roundup of six major coastal issues where officials will determine what kind of coastal resource North Carolina will have in the future.

1. *Can beach-front development be managed?* Along the ocean beaches, erosion is gradually undercutting high density development. The Environ-

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Using data from the North Carolina Wildlife Resources Commission, analysts have calculated that there were some 2.2 million acres of pocosins in North Carolina in 1962, some of which had already been developed.[4] By 1980, only 695,000 acres of pocosins remained in their natural state and without some proposal for development.[5] Agricultural development and timber plantations are the primary reasons for this conversion of pocosins out of their natural state. Timber companies now own about 44 percent of the state's pocosins. In 1984, the U.S. Fish and Wildlife Service identified the N.C. pocosins as a "national problem area," because of the rate of loss of wetlands.[6]

A 1985 federal law, the Food Security Act, will help with the problem of wetland conversion, especially under the so-called "swampbuster" provision. "Under this provision, a farmer who converts wetland to cropland loses all U.S. Department of Agriculture crop supports," explains Lawrence S. Earley.[7] "Under the 'swampbuster' provision, a farmer who wishes to put land into production that has not been farmed since 1981, or who wishes to convert new land to cropland, will have to prove that the land is not a wetland."

Another area of increasing concern is the inland wetland. The extent to which the Corps of Engineers extends the 404 permit program inland concerns a wide range of environmentalists, developers, and government officials. "There are some areas of land in Raleigh's proposed Outer Loop that are wetlands," says Charles Hollis, head of the Army Corps office covering all of North Carolina. The Army Corps has generally enforced 404 permits only on the coast, although 404 permits have been issued for areas as far west as Asheville.

Some states have enacted their own wetlands protection programs. Michigan, for example, has assumed authority to issue the federal 404 permits. North Carolina examined this issue two years ago in a 404 Assumption Feasibility Study and recommended that the state *not* assume the authority to issue 404 permits. Opposition to the state adopting its own program is related to several issues, including the cost to the state and the public's opposition to land-use regulations in general.

FOOTNOTES

[1]Margie B. Stockton and Curtis J. Richardson, "Wetland Development Trends in Coastal North Carolina, USA, from 1970 to 1984," *Environmental Management*, Vol. II, No. 4 (in press).

[2]See *National Wildlife Federation v. Hanson*, 623 F.Supp. 1539 (E.D.N.C. 1985); for an overview of the legal issues involved, see Derb S. Carter Jr., "Developments in Federal Wetlands Regulation," *1987 Environmental Law Update*, North Carolina Bar Foundation, Continuing Legal Education Program, 1987, pp. DSC1-DSC8.

[3]Ralph W. Tiner Jr., *Wetlands of the United States: Current Status and Recent Trends*, U.S. Fish and Wildlife Service, March 1984, p. 49.

[4]The 1962 data comes from a report by Kenneth A. Wilson, *North Carolina Wetlands: Their Distribution and Management*, North Carolina Wildlife Resources Commission, 1962. Various articles and reports have used this base study for data comparisons, including Curtis Richardson (see footnotes 1 and 5).

[5]Curtis J. Richardson et al., "Pocosins: An Ecosystem in Transition," in *Pocosin Wetlands* (C.J. Richardson, editor), Hutchinson Ross Publishing Company (Stroudsburg, Pa.), 1981, pp. 3-19.

[6]Tiner, *op. cit.*, p. 35.

[7]Lawrence S. Earley, "Hope for Our Wetlands," *Wildlife in North Carolina* (Part 3 of a "Protecting Wetlands" series), N.C. Wildlife Resources Commission, September 1987, pp. 4ff.