What are wetlands?
Wetlands are lands that are wet at least part of the year because their soils are either saturated or covered with a shallow layer of water. Wetlands include a variety of natural systems, such as marshes, swamps, bottomland hardwoods, pocosins and wet flats. While each wetland type looks and functions differently, all wetlands share certain properties, including characteristic wetland vegetation, hydric soils and hydrologic features.

Wetlands usually are covered by plants, ranging from marsh grasses to trees. All wetland plants must tolerate living in saturated soil without oxygen during parts of the growing season. Many wetland plants are called “hydrophytes,” because they can live with their roots in water.

Soils that have developed in wetlands are known as hydric soils, because they have formed under water-logged conditions. They have distinctive color, texture and, sometimes, odor. The presence of hydric soil means an area was once a wetland; however, it does not by itself mean that the area functions as a wetland today.

The most obvious wetlands, such as cypress swamps, have standing water in them nearly all the time. Some wetlands, like tidal saltmarshes, develop along the fringes of open water where they are flooded daily. Others, such as bottomland hardwoods along streams, develop in response to seasonal flooding.

Some wetlands occur far from open water -- in depressions where rainwater collects or in areas where the groundwater is frequently at or near the soil surface. Some of these wetlands are noticeably wet most of the time, but others may appear to be dry forests at certain times of the year. Although such areas may not be easily identified as wetlands by an untrained observer, many of them still perform important wetland functions.

Wetlands are worth protecting
Different types of wetlands perform various natural functions, many of which are important to coastal North Carolina. The role of wetlands as wildlife habitat has long been recognized. More recently their critical roles in protecting water quality, preventing floods and erosion, and maintaining fish populations have become evident.

Water-quality protection
During rainstorms, runoff from farm land, highways and urban areas washes into rivers and sounds. This runoff may contain toxins, bacteria, sediment or nutrients that can harm aquatic life and contaminate drinking water. Stormwater runoff is a major contributor to water-quality problems in coastal North Carolina.

Wetlands are natural buffers between uplands and waterways. By trapping sediment, removing nutrients and detoxifying chemicals, wetlands act as efficient and cost-effective filtration systems. When runoff enters a wetland, many of the harmful components are removed before the water enters a stream.

Wooded wetland corridors along headwater creeks are the most important filters of agricultural runoff in the coastal area. Bottomland hardwoods and swamp forests along rivers remove sediments, nutrients and toxic chemicals from the river when floodwaters run through them. Wetlands are vital for protecting the quality of coastal sounds because they remove upstream pollutants from the water.

Flood protection
Wetlands minimize the danger of damaging floods by storing and preventing rapid runoff of water. Large pocosin wetlands can store enormous amounts of water and slow runoff of freshwater into brackish estuaries. Bottomland wetlands along streams provide holding basins for floodwaters and slow the water to reduce flood damage.

Wetlands store water after rains and release it gradually into groundwater or through surface outflow. This function of wetlands helps maintain more constant water levels in streams.

Shoreline-erosion protection
Wetland vegetation is often very dense, both above and below ground. This plant cover can absorb energy from floods and wave action. By dissipating energy, binding soil and encouraging sediment deposition, wetlands stabilize shorelines along coastal streams, lakes and sounds.

Fish and wildlife habitat
Wetlands provide essential habitat for many diverse species -- fish, wildlife and plants. In North Carolina, more than 70 percent of the species listed as endangered, threatened or of special concern depend on wetlands for survival. Many common species of waterfowl, fish, birds, mammals and amphibians live in wetlands during crucial stages of their lives.

Coastal marshes provide nursery areas for finfish and shellfish. These marshes are among the most productive natural systems in the world, and this productivity makes the adjoining sounds some of America's richest fisheries.

Bottomland hardwood wetlands provide abundant food, nesting sites, resting areas and escape cover for many wildlife species. Many fish species use spring-flooded bottomlands as spawning and feeding locations.

Large pocosins are a refuge for wilderness animals, such as black bear and bobcat. Carolina bays are critical habitat for many
uncommon amphibians and reptiles. Pine savannas are host to numerous rare plants, such as insectivorous species, and to the endangered red-cockaded woodpecker.

Without its wetlands, coastal North Carolina would have much less biological diversity and would be a far less interesting place to live or visit.

**Economic importance of wetlands**

Numerous economically important products and activities depend on wetlands. Fish, shellfish, blue crabs and shrimp -- vital to our commercial and sports fisheries -- use coastal saltmarshes for habitat and food. Inland freshwater wetlands also affect estuarine water quality and productivity; thus they too influence fisheries.

An important use of freshwater wetlands in coastal North Carolina is timber production. Many wetland areas, if managed properly, can produce forest products without substantially detracting from their other wetland functions.

Other traditional wetland uses of economic importance include hunting, fishing and trapping. The water-filtration and flood-protection roles of wetlands are also of economic value, since they save money that would otherwise be spent on runoff control, water treatment and property preservation.

In addition to hunting and fishing, many wetlands offer opportunities for birdwatching, canoeing and photography. Almost all of the public recreation areas in the coastal area include significant wetlands. Visits to wetland wildlife refuges are an important part of the tourist economy in some coastal counties.

**Development in wetlands**

Development in wetlands in North Carolina requires a permit from either the U.S. Army Corps of Engineers or the N.C. Division of Coastal Management. Wetland permits are meant to protect the valuable wetland functions described in this brochure.

Before disturbing wetlands, consult with one of these agencies.

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**Wetlands: Their Functions and Values in Coastal NC**

1) Describe what a “wetland” looks like.
2) What are the types of wetlands in NC?
3) What are the 4 major benefits of wetlands?
4) How does stormwater create water quality problems in NC?
5) How do wetlands protect waterways, rivers, and coastal sounds?
6) Explain how pocosin and bottomland wetlands can protect areas from flooding?
7) How do wetlands help maintain constant water levels in streams and rivers?
8) Why are wetland plants important to shorelines?
9) What percent of species listed as endangered or threatened in NC depend on wetlands for survival?
10) Describe how each of the following types of wetlands are important for wildlife:
    a. Coastal marshes –
    b. Bottomland hardwood –
    c. Pocosins –
11) List 8 reasons wetlands are important to the NC economy.