Tidal Swamp Forest And Wetlands

Mid-Atlantic Coastal Plain

These habitats occur along rivers or sounds in areas where flooding is influenced by lunar or wind tides. Fresh water input may heavily influence the salt content. Vegetation may range from Cypress-Gum swamps, characterized by swamp black gum, water tupelo, and bald cypress, to freshwater marshes containing giant cordgrass, sawgrass, cattails, American threesquare, black needle rush, spike-sedges, southern wildrice, arrowhead, and marsh fern. Regularly flooded herbaceous sites are reported to have high productivity, equivalent to salt marshes (Schafale and Weakley 1990).

Areas dominated by dense herbaceous vegetation are important for several high priority bird species (Hunter *et al*. 2000, Johns 2004 and Rich *et al*. 2004) including rails and bitterns. Invasive *Phragmites* forms dense patches to reduce plant and animal diversity in some places. Fire was likely a natural component of some of these communities (Tidal Freshwater Marsh) and likely reduced dominance of large plant species and increased overall plant diversity (Schafale and Weakley 1990).

Areas that are forested (Tidal Cypress-Gum Swamp) have a canopy dominated by bald cypress, swamp black gum, water tupelo, a dense to open shrub layer and are influenced by lunar or wind tides with little or no salinity in the water (Schafale and Weakley 1990). Salt-water intrusion during major storm events can cause major disturbance to this community. Table 1 provides a list of priority species associated with this habitat for which there is conservation concern.

Table 1. Priority species associated with tidal swamp forests and wetlands.

Group	Scientific name	Common name	State status* (Federal status)
Birds	*Ammodramus caudacutus*	Saltmarsh Sharp-tailed Sparrow	
	Ammodramus nelsoni	Nelson's Sharp-tailed Sparrow	
	Anhinga anhinga	Anhinga	SR
	Asio flammeus	Short-eared Owl	
	Botaurus lentiginosus	American Bittern	SR
	Circus cyaneus	Northern Harrier	SR
	Cistothorus platensis	Sedge Wren	
	Coturnicops noveboracensis	Yellow Rail	SR
	Egretta caerulea	Little Blue Heron	SC
	Egretta thula	Snowy Egret	SC
	Elanoides forficatus	Swallow-tailed Kite	
	Gallinula chloropus	Common Moorhen	
	Haliaeetus leucocephalus	Bald Eagle	T (T)
	Himantopus mexicanus	Black-necked Stilt	SR
	Ixobrychus exilis	Least Bittern	
	Laterallus jamaicensis	Black Rail	SR

Table 1. Priority species associated with tidal swamp forests and wetlands.

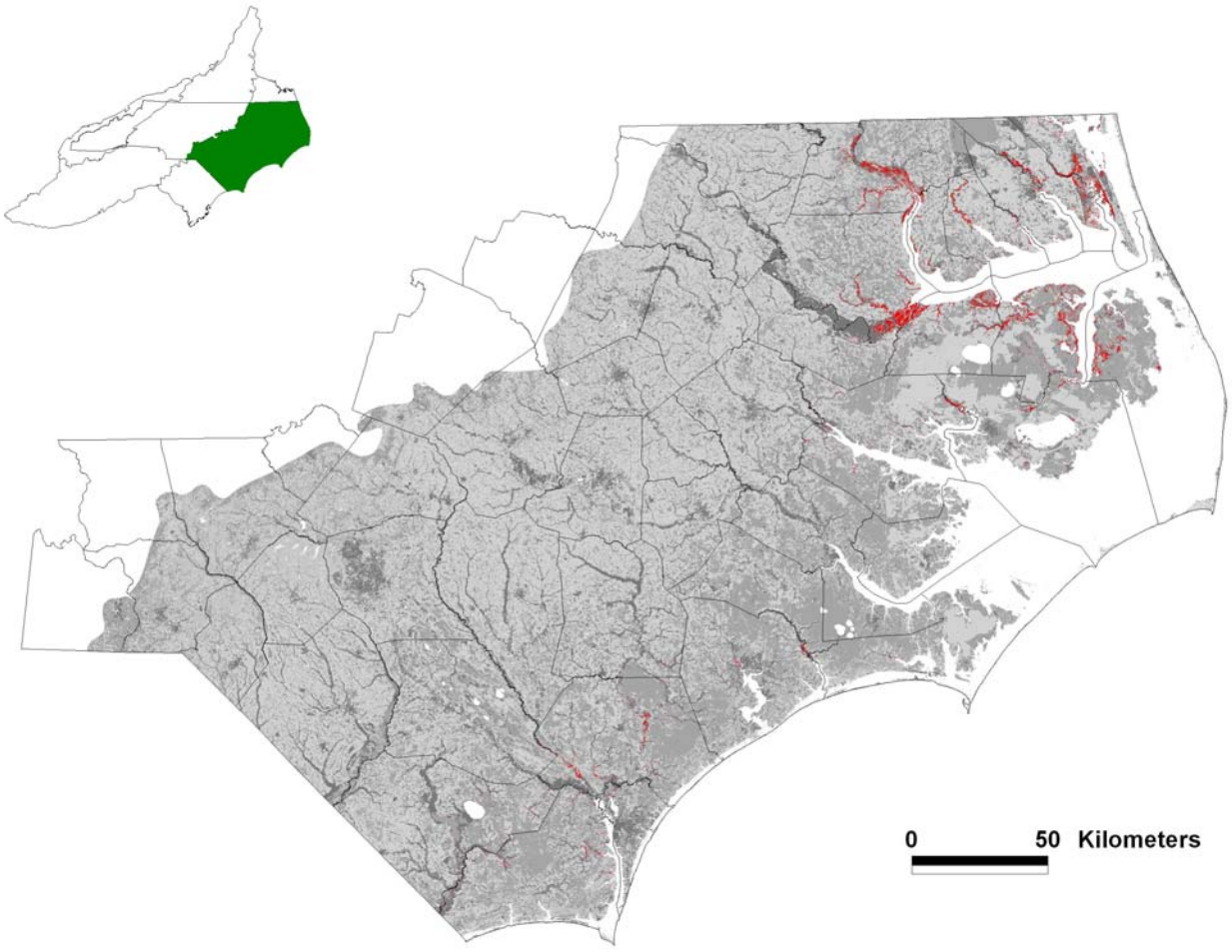
Group	Scientific name	Common name	State status* (Federal status)
	Mycteria americana	Wood Stork	E (E)
	Nyctanassa violacea	Yellow-crowned Night-heron	
	Plegadis falcinellus	Glossy Ibis	SC
	Porzana carolina	Sora	
	Rallus elegans	King Rail	
	Rallus limicola	Virginia Rail	
Mammals	*Condylura cristata*	Star-nosed Mole	SC
	Cryptotis parva	Least Shrew	
	Sylvilagus palustris	Marsh Rabbit	
Reptiles	*Alligator mississippiensis*	American Alligator	T (T)
	Farancia abacura abacura	Eastern Mudsnake	
	Farancia erytrogramma erytrogramma	Common Rainbow Snake	
	Kinosternon baurii	Striped Mud Turtle	
	Thamnophis sauritus sauritus	Common Ribbonsnake	

*Abbreviations
E Endangered
T Threatened
SC Special Concern
SR Significantly Rare

Location And Condition Of Habitat

This habitat can be found primarily in the northern coastal plain surrounding Currituck and Albemarle sounds, but is found sporadically southward at sites along rivers that empty into the sounds and at the upper end of estuaries. The forested habitat is in relatively good condition since it is not suitable for development, though still, little old growth tidal forested wetlands remain. Drainage and reduced burning frequency in both tidal and freshwater marshes has led to reductions in those habitat types. Good remaining examples of the herbaceous variant occur in Currituck, Camden, Chowan and Dare counties. Map 1 depicts locations of tidal swamp forest and wetland habitats in the Mid-Atlantic Coastal Plain ecoregion.

Map 1. Tidal swamp forest and wetlands in the Mid-Atlantic Coastal Plain ecoregion of North Carolina (in red).



Data source: NC GAP, 1992

Problems Affecting Species And Habitats

Reduced fire regimes have led to successional changes in marsh habitats. Drainage and conversion of wetlands for development have also been moderate problems. Drainage for mosquito control has been the largest factor changing the characteristics of this habitat. An increase in the amounts of *Phragmites* in these marshlands decreases overall vegetative and animal diversity. Lack of fire in marshes has led to increased shrub and tree growth, especially red maple. The relative lack of old growth forested habitat here has depleted the amount of nest sites for bald eagles, but these sites are still important for a variety of birds that use herb dominated marsh sites.

Species And Habitat Conservation Actions and Priorities For Implementation

Partnerships with the North Carolina Coastal Land Trust and The Nature Conservancy should be nurtured to acquire more of these types of habitats, particularly marshes in the Currituck Sound region. Identified funding sources for acquisition include the Clean Water Management Trust Fund, Coastal Wetlands Grants, Natural Heritage Trust Fund, Forest Legacy Grants, and Recovery Land Acquisition Grants. Priorities for protection include colonial waterbird nesting sites, eagle nesting sites, wood stork foraging areas, and important black rail habitat once it is better identified. Adjacent nesting habitat for snakes and turtles should also be protected.

Increased burning on sites dominated by herbaceous vegetation needs to be encouraged to retard invasion of maples and other trees and shrubs. This might be pursued through cooperative efforts with the Atlantic Coast Joint Venture, Migratory Bird Committee of the US Fish and Wildlife Service and the South Atlantic Migratory Bird Initiative. Non-native vegetation control (e.g., *Phragmites*) is needed in many areas. Snags, logs, rocks, and other structures that are important for basking reptiles should be retained or restored wherever possible.

Education efforts are needed to emphasize the importance of tidal wetlands. Existing wetland regulations need to be enforced and strengthened. The use of bulkheads should be discouraged when other possibilities are available.

Priority Research, Survey, And Monitoring

Surveys are needed to document the distribution, relative abundance and status of many wildlife species associated with these habitats. Priorities for conducting surveys need to focus on species believed to be declining, at risk or mainly dependent on these communities (like rails). Secondary priority for surveys should be for species for which current distribution information is already available or for species that are considered common. Many bird species associated with these community types are not sampled well or at all by BBS.

- **Surveys**
  - Conduct marshbird surveys (especially tape playbacks for rails and bitterns) to determine the status and distribution of all marshbirds (Legare *et al*. 1999, Gibbs and Melvin 1997, Conway *et al*. 2004).
  - Establish species-specific surveys to improve our knowledge of the status and distribution of least bittern, American bittern, yellow rail, and black rail at all times of the year (Conway *et al*. 2004).
  - Conduct status and distribution surveys for black-necked stilt, common moorhen, wood stork, northern harrier, short-eared owl, sedge wren and both saltmarsh and Nelson's sharp-tailed sparrows.
  - Establish small mammal surveys to obtain distribution information on the star-nosed mole and least shrew in this habitat, as well as other small mammals.
  - Determine the status and distribution of the marsh rabbit.
  - Determine the status and distribution of the American alligator, eastern mudsnake, common rainbow snake and striped mud turtle.

- **Monitoring**
  - Long-term monitoring, following survey data, is needed for all marshbirds, mammals and reptiles in this habitat type.
  - Continue nest monitoring for colonial waterbirds.
  - Establish mist net stations for passerine birds in this habitat type at all times of the year.
- **Research**
  - Examine habitat use and conduct nesting habitat research on the black rail using telemetry, and then on other marshbirds (Bogner and Baldassarre 2002).
  - Research the relationship between habitat area and the distribution of tidal marshbirds (Benoit and Askins 2002).
  - Conduct research on fire management in marsh habitats to determine optimal frequency, timing, and firing techniques (e.g., flanking fire, back fire) to benefit priority birds.
  - Conduct a systematics study to differentiate between the two subspecies of least shrew.
  - Explore techniques for restoration of tidal swamp forest and wetlands.
  - Investigate the past, current and potential future impact of nutria on tidal wetlands (especially freshwater marshes).

Supporting References

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