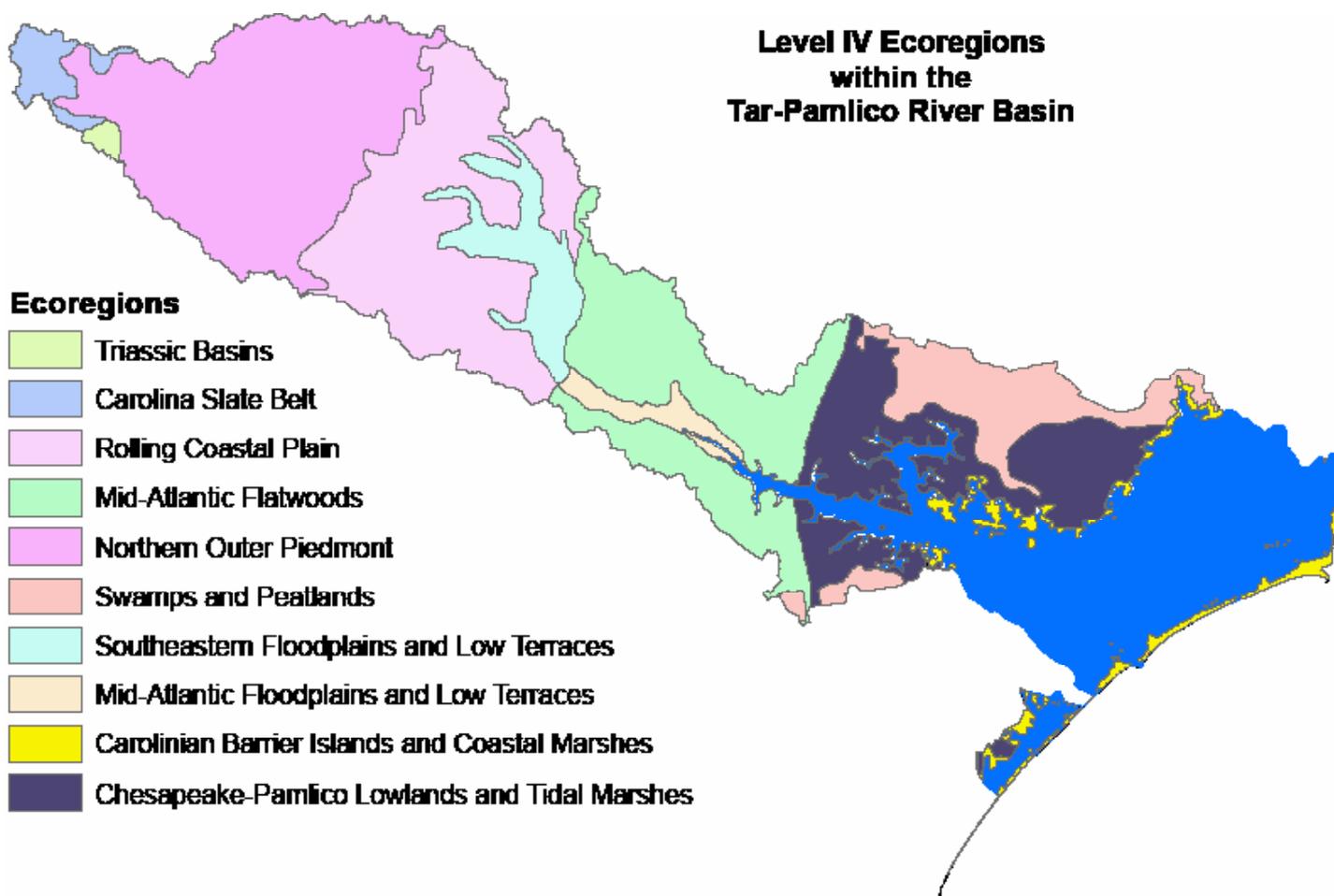


ECOREGIONS

IN THE TAR-PAMLICO RIVER BASIN

The Tar-Pamlico River Basin lies within 3 Level III and 10 Level IV ecoregions in North Carolina (Griffith, 2002). An ecoregion is considered an area of relatively homogeneous environmental conditions, usually defined by elevation, geology, and soil type. The 3 Level III ecoregions are **Piedmont**, **Southeastern Plains** and **Middle Atlantic Coastal Plain**. The 10 Level IV ecoregions are a further subdivision of Level II and Level III are: Carolina Slate Belt; Northern Outer Piedmont; Triassic Basins; Rolling Coastal Plain; Southeastern Floodplain; Mid-Atlantic Floodplains and Low Terraces; Mid-Atlantic Flatwoods; Chesapeake-Pamlico Lowlands and Tidal Marshes; Nonriverine Swamps and Peatlands; and Carolinian Barrier Islands and Coastal Marshes.

**Level IV Ecoregions
within the
Tar-Pamlico River Basin**



Carolina Slate Belt Ecoregion contains metavolcanic and metasedimentary rocks and is somewhat less resistant to erosion. It therefore forms areas of slightly lower elevations with wider valleys. Streams tend to dry up and water yields to wells are low as this region contains some of the lowest water-yielding rock units in North Carolina (Giese, 1991). The upper reach of the Tar River, including its tributaries Crooked Run and Cub, Shelton, Jordan and Johnson creeks, in Person and west Granville counties, form in the Carolina Slate Belt.

Northern Outer Piedmont Ecoregion lies to the east of the Carolina Slate Belt and, on its eastern boundary, contains the Fall Line, which is a broad transition zone where Piedmont rocks occur on the same landscape with Coastal Plain sediments. Due to the geologic diversity, this Fall Zone contains a variety of aquatic habitats. Some areas near this boundary have metavolcanic and metasedimentary rocks similar to the Carolina Slate Belt. The Northern Outer Piedmont ecoregion encompasses that portion of the Tar River in Franklin, Warren, Vance, east Granville, and west Halifax and Nash counties.

Triassic Basins Ecoregion occurs in four narrow bands and has unusual Piedmont geology of unmetamorphosed shales, sandstones, mudstones, siltstones, and conglomerates. Local relief and elevations are often less than in surrounding regions, and, with rocks that are easier to erode, stream valleys that cross the region tend to widen. Soils are often clayey with low permeability and streams have low base flows. The Triassic Basins only encompasses a short reach of the Tar River, including the tributaries Aycock, Johnson and Bollens creeks, in south-central Granville County.

Rolling Coastal Plain Ecoregion covers much of the northern upper coastal plain of North Carolina and lies to the east of the Northern Outer Piedmont Ecoregion. The boundary on the west occurs in the transitional Fall Zone to the Piedmont. This ecoregion encompasses the Tar River watershed in Wilson, east Halifax and Nash, and south and west Edgecombe counties.

Southeastern Floodplains and Low Terraces Ecoregion comprises a riverine type that provides important wildlife corridors and habitat. Composed of alluvium and terrace deposits of sand, clay, and gravel, the region includes large sluggish rivers and backwaters with ponds, swamps, and oxbow lakes. It includes oak-dominated bottomland hardwood forests, and some river swamp forests of bald cypress or pond cypress and water tupelo and swamp tupelo. The flood-prone region includes brownwater floodplains and blackwater floodplains. The brownwater floodplains originate in or cross the Piedmont and the sediments contain more weatherable and mixed minerals than the blackwater floodplains that have their watersheds entirely within the Coastal Plain. The low terraces are mostly forested, although some cropland or pasture occurs in some areas that are better drained. This ecoregion encompasses Beech Swamp in southern Halifax County, Fishing Creek in Edgecombe County, Swift Creek in east Nash and Edgecombe counties, the Conetoe Creek watershed in Pitt and Edgecombe counties, and the Tar River corridor in Edgecombe and west Pitt counties.

Mid-Atlantic Floodplains and Low Terraces Ecoregion is mostly a continuation of the riverine Southeastern Floodplains and Low Terraces. Large, sluggish rivers, deep-water swamps, and some oxbow lakes are characteristic. The alluvial deposits of the floodplains and terraces tend to have abrupt textural changes. Brownwater floodplains originate in or cross the Piedmont and the sediments contain more weatherable minerals than the blackwater floodplains that have their watersheds entirely within the Coastal Plain. The blackwater rivers tend to have variable flow regimes, acidic water low in nutrients and colored by tannins but clear. Cypress-gum swamps are common, along with bottomland hardwoods. This ecoregion encompasses the corridors of the lower Tar and upper Pamlico rivers and Tranters Creek in east and central Pitt and west-central Beaufort counties.

Mid-Atlantic Flatwoods Ecoregion occupies the middle portion of the Coastal Plain in northern North Carolina. Upland surfaces are wider, lower in elevation, with less local relief, and have more poorly drained soils. With slow natural subsurface drainage, except near streams, artificial drainage is common for agriculture and forestry operations. This ecoregion encompasses the Tar-Pamlico River Basin in southeast Halifax, east Edgecombe, north and south Pitt, Martin, west Beaufort, northwest Pamlico, and southwest Washington counties.

Chesapeake-Pamlico Lowlands and Tidal Marshes Ecoregion occurs on the lowest marine terrace with elevations ranging from sea level to about 25 feet. The region is characterized by nearly level plains with some broad shallow valleys, brackish and freshwater streams, and broad estuaries affected by wind tides. The region once had large areas of nonriverine wet hardwood forests, now one of the most endangered natural community types in North Carolina (Schafale, 1999). Lake Mattamuskeet, the largest natural lake in North Carolina at about 18 miles long and 6 miles wide, is located in this region. The ecoregion also encompasses east Beaufort, west Pamlico and west Hyde counties.

Nonriverine Swamps and Peatlands Ecoregion is flat and poorly drained, containing organic soils of peat and muck. The dark reddish-brown to black soils, acidic and nutrient-poor, often contain logs, stumps, and other woody matter from bald cypress and Atlantic white cedar trees. Pocosin lakes occur in some areas. The vegetation of the high and low pocosins contains a dense shrub layer. Fire during drought periods, logging, and construction of drainage ditches have affected natural vegetation patterns. Several areas of mineral and shallow organic soils have been drained and cultivated. The region extends just into southern Virginia to cover the northern portion of the Dismal Swamp. This ecoregion encompasses the Pamlico watershed in Dare, Tyrrell, west Pamlico, north Hyde, east Washington, and northeast Beaufort counties.

Carolinian Barrier Islands and Coastal Marshes Ecoregion covers most of the North Carolina coast. Similar to the Virginian Barrier Islands and Coastal Marshes in northern North Carolina and southern Virginia, the region contains marshes, dunes, beaches, and barrier islands, but it tends to be slightly warmer and wetter. In the north, the boundary is transitional, and there is a high diversity of vegetation in the maritime forests in the boundary area where northern and southern maritime forests overlap, such as at Nags Head Woods. The region encloses Pamlico Sound, a shallow estuary supporting an important nursery for 90 percent of all the commercial seafood species caught in North Carolina, as well as for vast recreational fisheries. This ecoregion encompasses the shoreline corridors of northwest Pamlico, and south Hyde and Dare counties, including Ocracoke Island.

REFERENCES

- Griffith, G., J. Omernik and J. Comstock. 2002. Ecoregions of North Carolina: Regional Descriptions. U.S. Department of Agriculture, Natural Resources Conservation Service. Corvallis, OR. 31pp. U.S. Environmental Protection Agency file transfer protocol Web page <ftp://ftp.epa.gov/wed/ecoregions/nc/>. Accessed 03/02/2012.
- 2 Giese, G.L. and R.R. Mason, Jr. 1991. Low flow characteristics of streams in North Carolina. USGS Open File Report 90-399. In Griffith, G., J. Omernik and J. Comstock. 2002. Ecoregions of North Carolina: Regional Descriptions. U.S. Department of Agriculture, Natural Resources Conservation Service. Corvallis, OR. 31pp. U.S. Environmental Protection Agency file transfer protocol Web page. <ftp://ftp.epa.gov/wed/ecoregions/nc/>. Accessed 07/05/2012.

- 3 Schafale, M.P. 1999. Nonriverine wet hardwood forests in North Carolina: status and trends. North Carolina Natural Heritage Program. Raleigh, NC. In Griffith, G., J. Omernik and J. Comstock. 2002. Ecoregions of North Carolina: Regional Descriptions. U.S. Department of Agriculture, Natural Resources Conservation Service. Corvallis, OR. 31pp. U.S. Environmental Protection Agency file transfer protocol Web page <<ftp://ftp.epa.gov/wed/ecoregions/nc/>>. Accessed 07/05/2012.