

POND PINE WOODLAND (NORTHERN SUBTYPE)

Concept: The Northern Subtype covers examples at the northern end of the range of Pond Pine Woodland, north of Albemarle Sound, in which *Cyrilla racemiflora* is absent and *Acer rubrum* and *Clethra alnifolia* become important components.

Distinguishing Features: The Northern Subtype is distinguished by the combination of northern location with the absence of *Cyrilla racemiflora*. All known examples are north of Albemarle Sound, where the Typic Subtype has not been found. It is unclear if the abundance of *Acer rubrum*, *Clethra alnifolia*, *Gaylussacia frondosa*, *Morella* spp., and *Eubotrys racemosa* is characteristic of the Northern Subtype in all potential occurrences or is a result of alterations or marginal conditions in the few remaining examples that have been sampled or well described.

Synonyms: *Pinus serotina* / *Ilex glabra* / *Woodwardia virginica* Woodland (CEGL004652).
Ecological Systems: Atlantic Coastal Plain Peatland Pocosin and Canebrake (CES203.267).

Sites: Examples occur on the edges of large peatlands and swales in irregular surfaces in the outer Coastal Plain.

Soils: The few remaining examples known occur on deep organic soils: Dorovan, Dare, Pungo, Ponzer, and Belhaven, all Terric or Typic Haplosaprists, though presumably less oligotrophic than typical. It is possible they could occur on shallower organic deposits, as is more common for the Typic Subtype.

Hydrology: Sites are semipermanently saturated, possibly temporarily flooded. Given the prevalence of deep organic soils, it seems unlikely that the water table would drop into the underlying mineral soil.

Vegetation: The woodland has an open to nearly closed canopy of *Pinus serotina*, sometimes codominant with *Acer rubrum* var. *trilobum* or *Magnolia virginiana* in existing examples. An open understory of the same hardwood species, along with *Persea palustris*, may be present. The shrub layer is tall and generally dense, with *Ilex glabra*, *Lyonia lucida*, or *Clethra alnifolia* dominant. Other species noted in examples include *Morella caroliniensis*, *Gaylussacia frondosa*, *Eubotrys racemosa*, *Morella cerifera*, *Lyonia ligustrina* var. *foliosiflora*, and *Vaccinium forosum*. *Smilax laurifolia* is often large and dense. Herbs are few, with *Anchistea virginica* most characteristic. *Sphagnum* spp. may be present in small amounts.

Range and Abundance: Ranked G2? This subtype is limited to northeastern North Carolina and adjacent Virginia. All examples are north of Albemarle Sound, where no examples of the Typic Subtype are known. Large peatlands are few in this region.

Associations and Patterns: The few remaining examples occur as large patches on edges of large peatland swamps (Great Dismal Swamp) and in peatlands embedded in wind tidal river valleys. These examples grade to Nonriverine Swamp Forest and Estuarine Fringe Pine Forest (Pond Pine Subtype) respectively. At least one is on the edge of a large, historically documented canebrake -- the Green Sea.

Variation: Known examples are too few and too altered to characterize natural variation.

Dynamics: As with other subtypes, this subtype may depend on fire at a low to moderate frequency to maintain it, but it may not. In addition, examples embedded in wind tidal river valleys are often completely surrounded by very wet Tidal Swamps which are not flammable, so the chances of them burning naturally are low. Fire frequency may be less in the range of this subtype than farther south.

Comments: This community was first documented in Virginia, where it is the only kind of Pond Pine Woodland, but it appears to apply to the few North Carolina examples north of Albemarle Sound. Beyond the absence of *Cyrilla* and other southern species, it is unclear how much of its character is natural and how much is a result of more alteration in the area where it occurs. Many of the species that contrast with the Typic Subtype -- *Acer rubrum*, *Clethra alnifolia*, *Gaylussacia frondosa*, *Morella* spp., and *Eubotrys racemosa* are common further south but in less oligotrophic conditions than are typical of Pond Pine Woodlands. If found in Pond Pine Woodland (Typic Subtype) they might indicate unnatural spread of pocosin vegetation into mineral soils with long absence of fire. Fire regimes have been altered longer and more thoroughly in the range of the Northern Subtype than farther south, but fire is also likely to have been somewhat less frequent in this area than farther south. Some species are shared with the anomalous Deciduous Subtype of Low Pocosin, but the reason for the connection is not known.

Some depauperate Pond Pine Woodland vegetation, lacking *Cyrilla racemiflora*, occurs near Lake Worth on the Dare County peninsula, where it is in close proximity to large examples of the Typic Subtype. This could possibly be a disjunct occurrence, but may be a result of some kind of alteration.

Rare species: Possibly *Picoides borealis*.

References:

Fleming, G.P., and W.H. Moorhead, III. 1998. Comparative wetlands ecology study of the Great Dismal Swamp, Northwest River, and North Landing River in Virginia. Natural Heritage Technical Report 98-9. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond. Unpublished report submitted to the U.S. Environmental Protection Agency. 181 pp.