

PEATLAND CANEBRAKE

Concept: Peatland Canebrakes are treeless or sparsely treed vegetation dominated by *Arundinaria tecta* (less than 25 percent tree cover) in peatland and nonriverine wetland settings.

Distinguishing Features: Peatland Canebrakes are distinguished from all other peatland and nonriverine wetland communities by the dominance of *Arundinaria tecta* associated with tree cover less than 25 percent. Examples with more trees are included in the Canebrake Subtype of Pond Pine Woodland. Peatland Canebrakes are distinguished from Streamhead Canebrakes by occurring in flat or basin peatlands or nonriverine wetlands where rainfall and sheetflow, rather than seepage, are the main sources of water.

Synonyms: *Arundinaria gigantea ssp. tecta* Shrubland (CEGL003843). Atlantic Coastal Plain Peatland Pocosin and Canebrake (CES203.267).

Ecological Systems: Southern Atlantic Coastal Plain Nonriverine Swamp and Wet Hardwood Forest (CES203.304). Atlantic Coastal Plain Peatland Pocosin and Canebrake (CES203.267).

Sites: Peatland Canebrakes are believed to occur in sites similar to those supporting Pond Pine Woodlands. Historically documented large examples are on shallow organic deposits or deeper peats with some input of mineral sediment. Canebrakes could potentially occur in peat-filled Carolina bays or swales in aeolian sand areas or other irregular surfaces in the outer Coastal Plain. Historical support for occurrence in these settings is less clear, but smaller patches may not have attracted comment. It is possible that Peatland Canebrakes occurred in a broader range of sites.

Soils: The full range of soils is not well known. It has been suggested in some earlier site descriptions that canebrakes may be more likely to occur on soils with higher mineral content than typical Pond Pine Woodland, but it is unclear if this is true. The few remnants in places where Peatland Canebrakes are historically documented include soils ranging from Terric Haplosaprists (Belhaven and Ponzer) to Histic Humaquepts (Wasda and Roper), to a Typic Endoaqualf (Hydeland).

Hydrology: Sites are seasonally to semipermanently saturated, but the full range of possible hydrology is not known.

Vegetation: Vegetation under natural conditions is believed to be a dense stand of *Arundinaria tecta*, likely 2-3 meters tall. Other details are poorly known. The few remnants tend to have abundant *Acer rubrum* var. *trilobum*, though presumably this species would quickly be eliminated under a natural fire regime. *Pinus serotina* is also abundant in some examples. Broadleaf pocosin shrubs such as *Lyonia lucida*, *Ilex glabra*, and *Cyrilla racemiflora* may be present, as may less typical pocosin shrubs such as *Clethra alnifolia*.

Range and Abundance: Ranked G1. Only small remnants, highly altered by exclusion of fire, remain. Historic references suggest this community once was common, or at least locally extensive, when fire was more common in peatlands. Hughes (1957), Biswell and Foster (1942), and some earlier writers described vast canebrakes on the wetlands of the Coastal Plain. Byrd (1728) describes one called The Green Sea that took several days to cross. The most plausible

remnant examples known are in outer Coastal Plain peatlands, but at least one possible example is reported on a stream terrace in the Sandhills. West (1934) described cane as abundant in the Embayed Region but did not mention dense canebrakes. However, he reported extant canebrakes in southeastern North Carolina. Both he and Wells (1946) mention *Arundinaria* in Holly Shelter, but it is not clear if it was this community. Peatland Canebrakes once ranged into Virginia, but occurrence in states to the south is less clear.

Associations and Patterns: Natural patterns and associations are poorly known. Most of the few remnants are associated with pocosins. However, the best documented historical canebrake, The Green Sea, appears associated with Coastal Plain Nonalluvial Wetlands, and other examples may also have been. Peatland Canebrakes at least sometimes occurred as large patch communities, similar to most pocosins. Remnant examples are associated with Pond Pine Woodland (Typic Subtype) and with various other pocosin communities. In more natural landscapes, this subtype may have occurred on edges where peatlands bordered more flammable vegetation.

Variation: Too little is known to recognize natural variation. The strong dominance of cane may have allowed little variation.

Dynamics: See the more extensive discussion under Pond Pine Woodland (Canebrake Subtype). Even more than that community, Peatland Canebrakes presumably depend on frequent fire. Frost (1989, 2000) suggests that Pond Pine Woodland-type sites with fire every 3-5 years would support dense, pure canebrake vegetation. With fire every 6-12 years they would alternate between canebrake and shrubby pocosin vegetation, while with less frequent fire *Pinus serotina* with dense shrubs would dominate. Peatland Canebrakes are often viewed as likely to have occurred in a shifting mosaic with other peatland communities. However, feedback presumably could help stabilize communities, with canebrakes promoting the frequent fire they need while broadleaf shrubs would reduce fire frequency. In addition, both cane and shrubs, if strongly dominant, would inhibit establishment by the other, allowing them to persist over a broader range of fire frequency.

Comments: This is one of the rarest and most altered natural communities in North Carolina, and therefore one of the hardest to understand. No substantial intact examples remain; the few unconverted remnants in places historically documented to be canebrakes are heavily altered by exclusion of fire and past land uses.

While vegetation called canebrake is believed to have been abundant in early settlement times throughout the Southeast, much was not comparable to these peatland communities of eastern North Carolina. The canebrake literature and descriptions reviewed by Platt and Brantley (1987) largely applies to very different communities of areas west of the Appalachians, where canebrakes are associated with large river bottoms. In the North Carolina Coastal Plain, however, despite the presence of abundant *Arundinaria* along rivers, true canebrakes appear to have been associated with peatlands and streamheads.

Cane was widely regarded as excellent forage, and overgrazing apparently led to its demise in many places (Hughes 1957, Biswell and Foster 1942). Where cane remains abundant, canebrakes potentially could be restored simply by burning frequently.

Rare species: *Amblyscirtes reversa*, *Amblyscirtes carolina*.

Bachman's warber (*Vermivora bachmanii*) has been believed to be associated with cane stands. This species is primarily associated with inland cane in bottomland hardwood, and it is unclear if it would have used these communities.

References:

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