STREAMHEAD POCOSIN

Concept: Type covers pocosin vegetation in mucky, seepage-fed drainages in the Sandhills Region and rarely in similar terrain with sandy uplands and seepage-fed streams.

Sites: Headwater and small stream bottoms in sandhill areas, where soils are kept saturated by seepage.

Soils: Mucky mineral soils, most often mapped as Bibb or Johnston

Hydrology: Saturated permanently or for long periods, but with only rare surface flooding.

Vegetation: Open woodlands or savannas. The tree canopy can range from sparse to dense, depending on recent fire history. Understory trees generally are sparse. The shrub layer is generally dense and tall, and herbs are sparse.

The canopy is dominated by Pinus serotina. Liriodendron tulipifera is often present and sometimes abundant. Nyssa biflora or Acer trilobum may be present in small numbers, large where fire has long been suppressed. Other trees, usually in the understory but occasionally in the canopy, include Persea palustris, Magnolia virginiana, and Oxydendrum arboreum. The dense shrub layer is generally dominated by Lyonia lucida, Ilex glabra, Ilex coriacea, and Cyrilla racemiflora. Clethra alnifolia, Vaccinium fuscatum, Vaccinium formosum, and Toxicodendron vernix are often present, and the rare shrubs Lindera subcoriacea or Kalmia cuneata may occur. Arundinaria tecta may be present in small amounts. Smilax laurifolia is often dense. Other vines are few, and limited to acidic wetland species such as Smilax rotundifolia and Muscadania rotundifolia. The most frequent herb is Woodwardia virginica. Other herbs may include Woodwardia areolata, Osmundastrum cinnamomeum, Carex lonchocarpa, Carex collinsii, and other Carex species. Sphagnum spp. is often present as scattered clumps. Streamhead Pocosins that have repeated burned through may have areas of boggy herbaceous vegetation dominated by species such as Osmundastrum cinnamomeum, Andropogon glomeratus, and Erianthus spp.

Where Streamhead Pocosin borders upland communities, a distinct ecotonal zone often occurs, where the more frequent fire of the uplands interacts with the wetter soils of the pocosin. This ecotonal zone, while too small to be classified as a separate community, often resembles a Pine Savanna or Sandhill Seep, with a high diversity of herbaceous plants absent from both of the adjoining communities. This ecotone is the primary habitat for a number of rare plant species.

Dynamics: Under natural fire regimes, Streamhead Pocosins are exposed to the frequent fires in the adjacent uplands, but may not always be flammable. Therefore, their natural fire frequency is presumed to be lower, and is not well known. Prescribed fires are often deliberately set under conditions when the pocosins will not burn, but ignition might be more likely in the broader range of conditions for natural fires. Fire intensity is quite patchy, leaving unburned shrub patches, top-killed or consumed shrubs, and patches with dead or scorched trees. This is the primary cause of
the variable vegetation structure. Trees may also blow down in wind storms, but fire is likely the predominant cause of tree mortality where it occurs.

Even when Streamhead Pocosins do not burn with the adjacent uplands, they are affected by scorching along the ecotone, and by input of nutrients released in the ash. The combination of more frequent disturbance and somewhat more nutrients may account for the higher shrub and tree diversity in these communities than in other pocosin types.

The natural successional patterns of Streamhead Pocosins are not entirely clear. With relatively frequent fire they are dominated by shrubs, with an open to sparse tree canopy, but they may rapidly change in structure as woody vegetation regenerates. With an increase in fire frequency, some areas may become Streamhead Canebrakes. With infrequent fire, Streamhead Atlantic White Cedar Forest may develop. Even longer absence of fire is thought to lead to Sandhill Streamhead Swamp. They may also be flooded by beaver ponds to produce Coastal Plain Semipermanent Impoundment communities, or develop from such communities when ponds are abandoned. In practice, all of these communities may potentially occur along the length of a given stream, sometimes in an alternating pattern. It may be that such patterns represent shifting mosaics driven by accidents of history. But they might also represent differing site conditions, with variation in topography, seepage, chronic fire behavior, and suitability to beaver dams supporting a more stable mosaic.

**Range and Abundance:** Abundant through the Sandhills region of North Carolina and South Carolina. Rarely occurs in sandhill-like terrain in the outer Coastal Plain.

**Associations and Patterns:** The ecological relationship between the different communities of Sandhills streamheads is not entirely clear. While there is a general trend from Streamhead Pocosin upstream to Sandhills Streamhead Swamp downstream, these communities and also Streamhead Atlantic White Cedar Forest, Streamhead Canebrake, and Coastal Plain Semipermanent Impoundment may alternate along the length of a given drainage.

Streamhead Pocosins are generally bordered by Pine/Scrub Oak Sandhill communities, less commonly by Xeric Sandhill Scrub. Sandhill Seeps may sometimes occur adjacent to them, and may have boundaries that are difficult to distinguish.

**Distinguishing Features:** Streamhead Pocosins are distinguished from other pocosin communities by their occurrence in drainages in sandhill terrain, with flowing or seepage water, rather than on peat domes or in depressions fed mainly by rain water. *Liriodendron tulipifera* is often, but not always, a component of this type and is never present in other pocosin types. *Clethra alnifolia, Toxicodendron vernix,* and *Oxydendrum arboreum* are often present in this type and seldom present in other types of pocosins. Streamhead Pocosins are distinguished from Streamhead Atlantic White Cedar Forest and Sandhill Streamhead Swamp by canopy predominance of *Pinus serotina.* Streamhead Pocosins that have repeatedly burned through have boggy herbaceous vegetation. In places with long absence of fire, vegetation resembling Streamhead Pocosin spreads uphill into Sandhill Seep sites and even into less wet areas.
**Variation:** No variants have been defined. Examples vary in structure and composition over a wide range, apparently in response to fire history.

**Comments:**

**Synonyms:** *Pinus serotina* - *(Liriodendron tulipifera)* / *Lyonia lucida* - *Clethra alnifolia* - *Ilex glabra* Woodland (CEGL004435).

Ecological Systems: Atlantic Coastal Plain Streamhead Seepage Swamp, Pocosin and Baygall (CES203.252).

**Rare species:** *Lindera subcoriacea*

**References:**