Ecological and Historical Significance of the Blackwater Preserve

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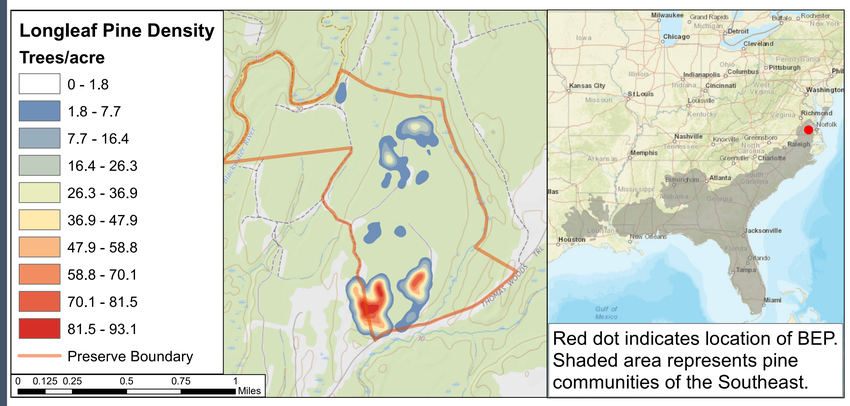
Introduction

The Blackwater Preserve (BEP) in Isle of Wight County, Virginia encompasses the northernmost extant assemblages of Longleaf Pine-savanna and Longleaf Pine-Turkey Oak communities. This is the only Condition Class 1 site in the entire historical range of longleaf in Virginia and North Carolina north of the Pamlico River (Frost, pers. comm.).



Botanical History

The botanical exploration of Merritt Lyndon Fernald and his Harvard collaborators conducted in the very site that is now the Blackwater Preserve provides a unique opportunity to monitor vegetation changes. Fernald reported numerous new records for the flora of Virginia including *Carphephorus tomentosus*, *Xyris caroliniana*, *Polygonella polygama*, and *Minuartia caroliniana*. Significantly, he reported finding *Ligustrum sinense* which is now widespread throughout much of the state. Not far from the Preserve he found *Crotalaria rotundifolia*. That species and *Minuartia caroliniana* are now considered extirpated in Virginia. Botanical novelties did not stop with Fernald's research. Since the restoration of prescribed burns *Calopogon pallidus* has appeared, the only site in Virginia. We have also found numerous other Longleaf associates not noted by Fernald. While the prescribed burns have restored rare species their populations have not returned to those noted by Fernald who wrote, for example, of *Zigadenus glaberrimus* and *Sarracenia flava* being "more widely dispersed than we had supposed". The large pitcher plant, *S. flava*, has not been seen and only a single plant of *Zigadenus* is extant.

Naval Stores

The naval stores industry in Virginia started in the earliest days of the colony. Because of the limited acreage of Longleaf, the supply of trees was exhausted and naval stores were in very sharp decline by the time of the Civil War. The last census to list naval stores was in 1840 when almost a thousand barrels were shipped from Isle of Wight County. Tar and turpentine were produced at the Blackwater Preserve using tar kilns ("tarkels") as well as boxing. Several tarkels of varying sizes are preserved(below, right). At least one tarkel is thought to have been constructed in the 1600's. Also present are turpentine stumps, one of which was more than three-hundred years old when it was felled at an unknown date (below, left two images).

The Hampton Roads area of Virginia supported a ship building industry in the earliest days and the tar, pitch, and rosin produced in tarkels was an essential material for the British and American naval warships. The Blackwater Preserve is the only site in Virginia where these archeological structures are preserved.

Above: *Calopogon pallidus, Zigadenus glaberrimus, Stipulicida setacea, Xyris caroliniana, Polygonella polygama*

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Research and Management

Prescribed burns have occurred every two years from 1984 to present. Since then, both monitored species and longleaf seedlings have increased. Management is coordinated with Virginia Department of Conservation and Recreation, Zuni Hunt Club, and Old Dominion University

Current research includes

- propagation of rare species in collaboration with Norfolk Botanical Garden
- monitoring longleaf seedling establishment in relation to fire and competition
- collaborative work with Sam Houston State University on understory composition beyond wiregrass range
- DNA fingerprinting for markers for longleaf of northern provenance

BLACKWATER RESEARCH TEAM
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