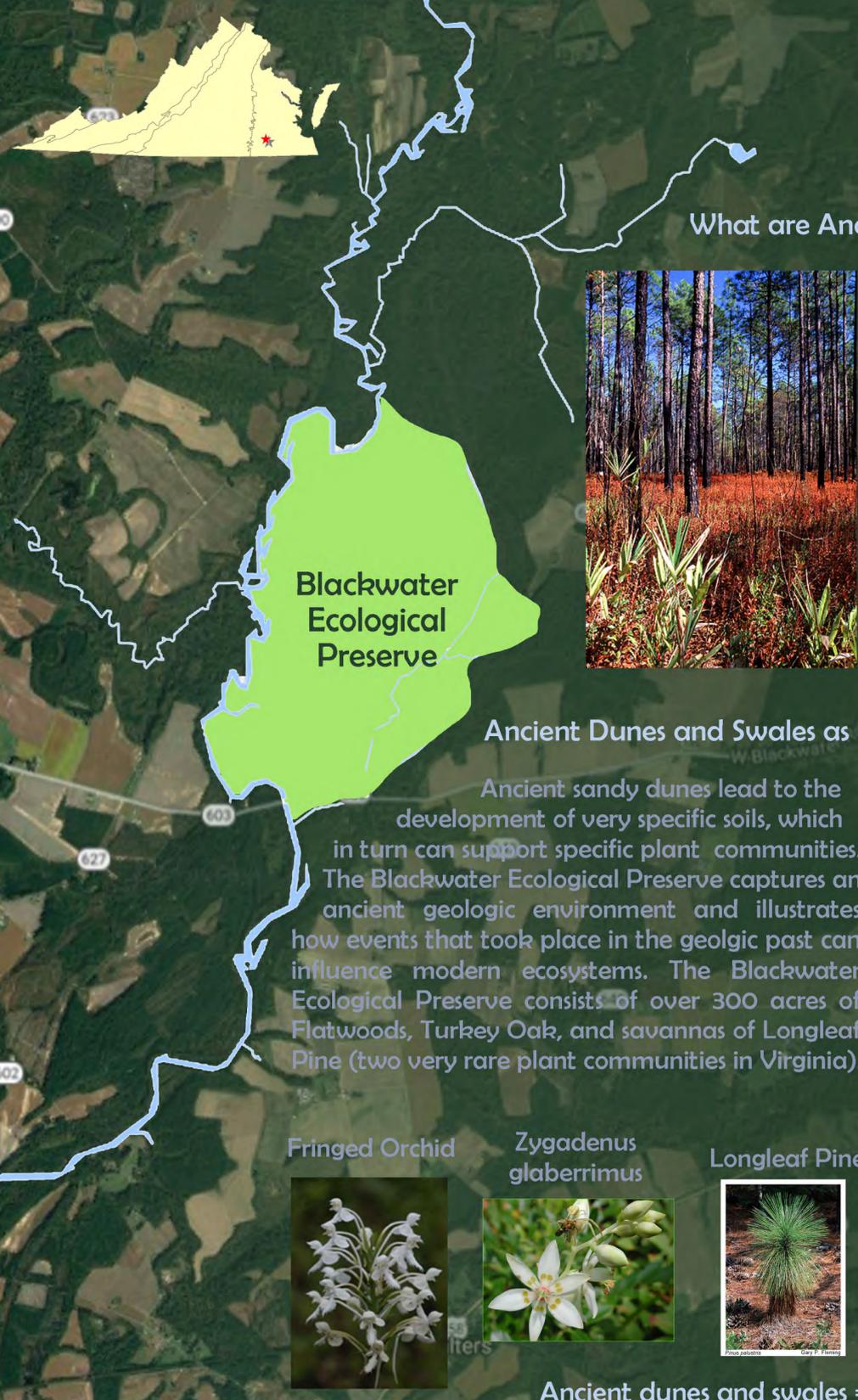


Ancient Dunes and Swales Provide a Unique Geologic Habitat



What are Ancient Dunes and Swales?



Hundreds of thousands of years ago, during the Pleistocene Epoch, the Virginia coastline lay further to the west. Sediments were deposited that would eventually become the current coastal plain and eastern shore. At that time, a beach environment existed across the area that is now Isle of Wight county. Ancient dunes and the lower topographic swales that formed in between have been preserved over time and can be seen today as gently undulating topography. Such ancient dunes and swales form the foundation of the Blackwater Ecological Preserve.



Historic Practices

During the 1700s and 1800s, the United States Navy used resinous conifer trees in order to make materials for building wooden ships. The plentiful longleaf pine trees in the southeastern portion of Virginia were excellent resource for the navy and a major motivation for Europeans to explore North America. Eventually the area that is now Hampton Roads became a shipbuilding center due to the plentiful longleaf pines. Tar kilns were built which separated tar from sections of pine wood by a dry distillation process. The tar was then used as a ship sealant. Workers would 'box and face' living pines in order to collect resin that would be made into turpentine. The tall, straight, and strong longleaf pines were also a desirable commodity for producing ship masts. Pine forests were devastated by these processes until the late 1800s when they ceased. Today, longleaf pines are protected in areas such as the Blackwater Ecological Preserve.



an old tar kiln

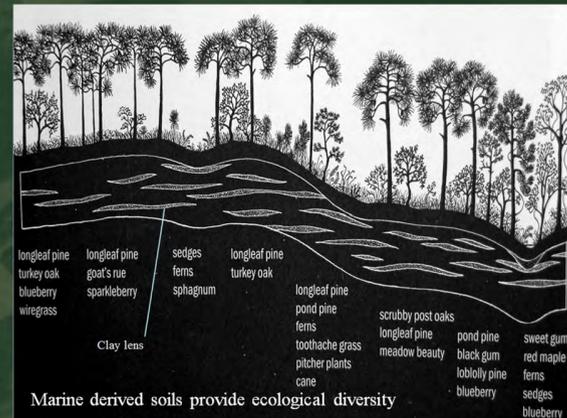


collecting tree resin for producing turpentine



Ancient Dunes and Swales as Habitat

Ancient sandy dunes lead to the development of very specific soils, which in turn can support specific plant communities. The Blackwater Ecological Preserve captures an ancient geologic environment and illustrates how events that took place in the geologic past can influence modern ecosystems. The Blackwater Ecological Preserve consists of over 300 acres of Flatwoods, Turkey Oak, and savannas of Longleaf Pine (two very rare plant communities in Virginia).



Sarracenia flava



Forest Fires are Critical to Species Survival

Regular forest fires are necessary in order to maintain this ecosystem. The fires increase light penetration, allow a greater diversity of shrubs and herbaceous plants to grow, and aid germination. Several species require fire in order to thrive, such as the Calopogon pallidus, Polygonella polygama, and the Zornia bracteata, among many others (see images below). After decades of wildfire suppression, prescribed burns were reintroduced in the late 20th century. Following these burns, hundreds of longleaf pines and other plants can germinate.



Fringed Orchid



Zygadenus glaberrimus



Longleaf Pine



Pixie Moss



Huckleberry



Bluejack Oak



Longleaf Pine



Sarracenia purpurea



Zornia bracteata



Polygonella polygama



Pyxidantha barbulate



Calopogon pallidus



Ancient dunes and swales = Pine/scrub sandhill community