

Longleaf Pine Ecosystems

Due to extensive burning throughout the early history of the Southeast, an estimated 72-92 millions acres of fire-dependant longleaf pine ecosystems once covered the landscape. Soon after early settlement, large amounts of these ecosystems were cleared for agriculture land and city construction. This created fragments of forests throughout the Southeast, impeding a low burning fire from traveling through much of the landscape as it once did. In addition, people then viewed fire as only a destructive force. Over-exploitation and fire suppression decreased the longleaf pine communities to just a few fragments. We now know that fire can actually enhance ecosystems and when utilized properly, longleaf pine ecosystems can be the most diverse ecosystems outside the tropics.



Figure 1. Indians setting fire to longleaf communities.
Source: The Longleaf Alliance

Xeric Sand Ridges

Some of the longleaf pine ecosystems within the SWA 1187 are present along xeric sand ridges and are normally associated with the sandy rims of Carolina Bays. These areas remain dry (xeric) due to the sandy soils, which allow more than adequate drainage. Longleaf (*Pinus palustris*) and loblolly pine (*Pinus taeda*) dominate these regions. The mid-story consists of turkey oak (*Quercus laevis*), live oak (*Quercus virginiana*), sand live oak (*Quercus geminate*), and persimmon (*Diospyros virginiana*). The common shrub and herbaceous layers consist of wiregrass (*Aristida spp.*), dropseed (*Sporobolis spp.*), meadow beauty (*Rhexia spp.*), and prickly pear (*Opuntia compressa*).



Figure 2. Xeric sand ridge

Pine Flatwoods

A majority of the longleaf pine throughout the SWA 1187 are present in these pine flatwood areas. These areas exist in higher flat areas along the moisture gradient between pocosins or Carolina Bays and xeric sand ridges. The generally sandy soils provide for adequate drainage with the water table being approximately 3 feet from the surface most of the year. The dominant canopy consists of longleaf and loblolly pine. The mid-story is mostly comprised of sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), inkberry (*Ilex glabra*), sweet gallberry (*Ilex coriacea*), and blackjack oak (*Quercus marilandica*). The herbaceous understory consists of many of the same species as the xeric sand ridges but with a more prominent shrub layer of blueberry (*Vaccinium spp.*) and huckleberry (*Gaylussacia spp.*)



Figure 3. Pine flatwoods

Longleaf as Wildlife Habitat

When properly managed, longleaf pine ecosystems provide for a high diversity of wildlife. Over 30 endangered and threatened species of plants and animals are known to be associated with longleaf pine ecosystems. White-tailed deer, bobwhite quail, wild turkey, and fox squirrels are all common species found in longleaf ecosystems, as well as around 68 species of birds. The large seeds of longleaf pine provide excellent forage for birds and smaller mammals. Feral hogs utilize seedling roots for food, which may pose a serious management concern. Although none of the longleaf pines on the SWA 1187 appear to have reached biological maturity, once mature, they will provide adequate nesting habitat for the endangered red-cockaded woodpecker.



Figure 4. Eastern fox squirrel

The hardwoods within the longleaf communities such turkey oaks and live oaks are especially important for wildlife. Black bears, white-tailed deer, bobwhite quail, squirrels, sapsuckers, and many other birds and mammals desire these hard masts as a fall food source because of their abundance and palatability. While the leaves and twigs of persimmon may provide some fall and winter forage for white-tailed deer, the fruits are an important food source for many birds and smaller mammals..



Figure 5. Deerberry (*Vaccinium stamineum*) Source: James H. Miller – USDA Forest service

The pine flatwood communities, where blueberry and hackberry shrubs are more abundant, provide more food resources in the shrub layer than the xeric sand ridges. In the summer months, wild turkeys and quail heavily utilize blueberries and huckleberries, with blueberries being the preferred due to its high-energy content. When blueberries are abundant, they can make up nearly twenty percent of a quail's summer diet. Many songbirds such as scarlet tanager, eastern bluebird, blue jay, eastern towhee, gray catbird, northern mockingbird, brown thrasher, northern cardinal, American robin, and many others also rely on these fruits to meet nutritional needs. The shrub layer also benefits mammal species throughout the SWA 1187 such as black bear, foxes, raccoons, squirrels, rabbits, and mice.