

FLORIDA'S STATE SOIL – MYAKKA FINE SAND



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STATE SOIL

What do the sabal palm, orange blossom, mockingbird, and Myakka fine sand have in common? They are all state symbols. Sabal palm is the Florida state tree, orange blossom is the state flower, mockingbird is the state bird, and Myakka fine sand is the state soil. What is Myakka fine sand? How extensive is this soil? Why was Myakka fine sand selected to be designated as Florida's state soil? How many different soils do we recognize in Florida?

COMMEMORATION

The State of Florida has the largest total acreage of Aquods (wet sandy soils with an organic stained subsoil layer) on flatwood landforms in the nation. Myakka is a native soil of Florida and does not occur in any other state. There are more than one and one half million acres of Myakka (pronounced My-yak-ah' - Indian word for Big Waters) soil in Florida. It is the most extensive soil in the state.

The Florida Association of Professional Soil Classifiers and the Florida Chapter of the Soil and Water Conservation Society worked together to commemorate the State's unique soil legacy. It is very fitting that Myakka fine sand, a typical flatwoods soil, was adopted as the state soil to acknowledge the heritage that has made agriculture the State's major industry.

On May 22, 1989, Governor Bob Martinez signed Senate bill number 524 into law, making Myakka fine sand Florida's Official State Soil. The technical taxonomic classification of the Myakka soil is sandy, siliceous, hyperthermic Aeric Haplaquods.

WHY ARE SOILS SO IMPORTANT ?

Soils are one of the basic components our lives depend on. Soils have taken thousands of years to form. Too many people view soils as an unlimited resource, failing to realize they can be easily damaged or almost complete-

ly destroyed by poor management. Soils have important socioeconomic value in addition to producing timber, food, and fiber. They have aesthetic value and support open space; wildlife and bird habitats; recreational areas; and serve as an engineering media for construction purposes. They are instrumental in ground water recharge and are nature's only acceptable waste disposal medium. Florida's state soil admirably fulfills most of the above uses.

AN UNSEEN JEWEL

Agriculture is a very important industry in Florida. The state is ranked number 1 in the nation in the sale of oranges, grapefruit, fresh tomatoes, watermelons, foliage (flowers and fern), sugarcane, tropical fish, and aquatic plants. Florida is ranked nationally as the eighth leading state in overall agricultural sales. Responsible for this phenomenal production is an unusual combination of mild winter climate and well-managed soils. Florida's soils also produce beef and dairy cattle, timber, fruits and nuts, poultry, swine, tobacco, vegetables, and other products. Profiles of soils and their unique properties below the surface are not readily seen, but they contain the keys to soil productivity.

Buildings, highways, cities and countless other improvements are graphic illustrations of the long-enduring past productivity of Florida's soils. Forest products, agricultural crops and the livestock they nourished financed a sizable portion of these impressive urban improvements.

FLATWOOD SOILS - A TREASURE

The most extensive landform in Florida and perhaps the one most disturbed by human activities, is the pine-saw palmetto flatwoods. Early European settlers originated the term flatwoods because native forests occurred on this landform of nearly level relief. Typical flatwood soils are somewhat poorly to poorly drained, sandy textured, acidic, and are usually underlain by a spodic (organic stained) horizon. Sometimes they are underlain by loamy/clayey materials or limestone. Flatwood soils have low amounts of organic matter, extractable nutrients, clay, silt, a low cation exchange capacity (measure of the availability of plant nutrients), and a low moisture-holding capacity.

Organic matter accumulates in the soil surface from plant roots and litter fall. This combination of mineral and organic matter supports all life in the flatwoods. For eons,

On the Cover: Flatwoods landform on nearly level Myakka fine sand.

flatwood plants used photosynthesis to convert solar energy, carbon dioxide, and water to carbohydrates, proteins, and fats that nourished native herbivores. Animal waste and plant remains contributed compounds of carbon, hydrogen and oxygen to the soil. Over time this carbon-rich mixture of lignins, tanins, fats and waxes (known as humus) accumulated to as much as 1 to 4 percent and darkened the soil's surface layer. Slightly lower landform areas occurring in depressions contain as much as 20 percent or more organic matter. Accumulating with the organic-rich plant and animal residue also are plant-nutrient elements, notably nitrogen, phosphorus, and potassium, that help to sustain the native vegetation, pasture, fruit, field, and vegetable crops.

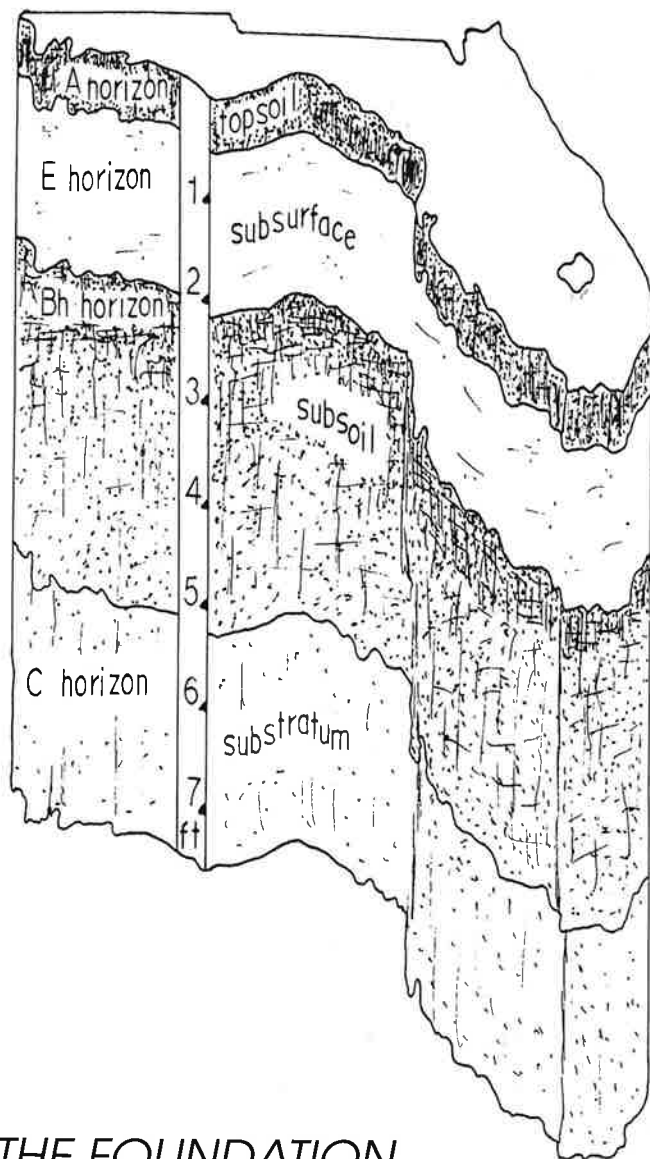
A gray and light gray subsurface layer develops through the acid-leaching process in which organic complexes of iron and aluminum are translocated downward in the profile by water percolation.

The spodic horizon (hardpan) is developed because of changes in hydraulic conductivity (soil permeability by water) and/or pH which cause the organic complex to accumulate by precipitation.

WHAT IS A SOIL SERIES ?

A soil series includes the different colors, textures, layers and other morphological, physical, and chemical properties unique to a given soil. Some 450 different kinds of soils (soil series) are recognized in Florida. The Myakka series occurs on the flatwoods landform, throughout the peninsula part of Florida. It is also found in sloughs, depressional, tidal, and floodplain landforms. It's thermic (cooler annual soil temperatures) counterpart, the Leon series, also occurs on the flatwoods landform, but only in north and northwest Florida. Leon at one time was recognized throughout Florida, however, when Soil Taxonomy (the official United States soil classification system) was published, the Leon series was restricted to the thermic zone of Florida (north of a line between St. Augustine and Cedar Key). Soils with similar profiles occurring south of this line were renamed the Myakka series.

MYAKKA FINE SAND



THE FOUNDATION OF FLORIDA

Figure 1. State soil logo

MYAKKA FINE SAND

Established in Lake County in 1970, the Myakka series was named for the city of Myakka in Manatee County, Florida.



Figure 2. Myakka fine sand profile. A six-inch surface layer of friable gray fine sand, a twenty-inch subsurface layer of light gray fine sand, a six-inch subsoil of dark reddish brown fine sand organic stained layer, with a brown and yellowish brown fine sand substratum.

Other soils in Florida differ from the Myakka fine sand because they have different characteristics or properties, much like a cypress tree is different from other kinds of trees. Most soils on the central ridge and the better drained areas of north and northwest Florida have yellow, red and brown colors and some have loamy subsoils. The more poorly drained (wetter) soils commonly have darker surface horizons due to their higher content of organic matter.

Since Florida soils comprise a complex and variable mosaic, it is unlikely that one individual can learn them all. However, one can learn the properties of a model soil, in this case Myakka, and compare other soils to it.

Soil is the foundation of nearly all of the important facets of life as we know it in Florida. It is worth protecting. Myakka fine sand is the symbol needed to help increase public awareness of Florida soils.

FOR FURTHER READING

Persons interested in learning more about soils are advised to refer to their county soil survey report, available at the local Soil Conservation Service and Agriculture Extension Service offices.



The Florida Association of Professional Soil Classifiers and the Florida Chapter of the Soil and Water Conservation Society are non-profit organizations dedicated to the wise use and conservation of Florida's soil and water resources.