USDA United States Department of Agriculture

Soil Science Division

Soil Survey Region 7

Fort Myers, Florida, MLRA Soil Survey Office

Order 1 Mapping in Little Manatee River State Park

Purpose

We assisted the staff of the Little Manatee River State Park, in Hillsborough County, Florida, in identifying and separating better drained soils in map unit 29—Myakka fine sand, 0 to 2 percent slopes (a poorly drained soil). Park specialists questioned the need for revisions to address management resource concerns for Florida goldenaster (*Chrysopsis floridana*), a threatened and endangered plant species endemic to Florida. Areas of the better drained soils represented sites where they could possibly reintroduce this plant species.

The areas correlated to map unit 29 included the map symbol Lk in the legacy soil survey. The concern is that the Lk map units may have better drainage than the current map units (symbol 29). The park has State and federally listed threatened and endangered species in areas of map unit 29. For the purposes of tracking, managing, and protecting these species, soil designations need to be accurate. If current designations are not corrected, these populations will appear as outliers in the overall study and information on what is required for the species to survive and prosper will be incorrect. Identifying the areas that have different drainage and delineating the proper soil types and mapping units are critical to the park's proper management of these areas.

Since this land is owned and managed by the State of Florida, and the soil classification may impact the needs of several agencies, we needed to provide the corrected soil map units and components. This information is provisional to the park and subject to change. Conservation management requirements differ between areas mapped as Myakka fine sand and areas of better drainage soils with deeper water tables.

The legacy Lk map units were identified, reviewed, and evaluated in GIS. These map units were located within the park, and point sites were selected for field evaluation. Based on the soils, drainage and hydrology, landscape position, and plants described, there is a correlation between the 26 ecological communities of Florida and the latest FNAI (Florida Natural Areas Inventory) ecological site descriptions that can be supported by the observations of the field soil scientists and by the model developed in GIS. This correlation indicates that there are distinct differences between the Lk map units and the rest of map unit 29 (Myakka fine sand, 0 to 2 percent slopes). The Lk map unit is clearly defined by landscape position, soil hydrology and drainage, and plant communities.

We collected around 27 soil field notes and pedon descriptions in 14 different locations throughout the park that were delineated as the Lk map unit. After collecting the field data, we found that most of the sites within the Lk map unit have a wavy Bh horizon (spodic) ranging from depths of 15 to 60 inches and a water table ranging from depths of 18 to 42 inches. We observed that these legacy map units are

slightly higher than delineations of map unit 29 and exhibit a different plant community and seasonal high water table (SHWT) depth. In some cases, a matter of inches is sufficient to change a soil from poorly drained (SHWT at depths ranging from 6 to 18 inches) to somewhat poorly drained (SHWT at depths ranging from 18 to 42 inches).

In the Lk map units, the dominant drainage class is somewhat poorly drained and the dominant depth range of the Bh horizon is from 15 to 30 inches. We determined that the Cassia series was a good fit as the dominant soil in the Lk map units, with Pomello, Zolfo, Duette, and Satellite soils as inclusions. The new map unit symbol and name will be 62, Cassia fine sand, 0 to 2 percent slopes. These changes will not be included in the official soil survey product of Hillsborough County until an official update of the soil survey area is completed. This product is for the use of the staff of the Little Manatee River State Park for management of the park only and is subject to change. A set of soil properties and interpretations will be developed and provided to the park for this new map unit. A GIS database with the new polygons will also be given to the park. A tutorial on the Web Soil Survey site will be provided to the park staff. The new information will be used in future update projects within Hillsborough County, Florida.

Key Outcomes

- Areas within map unit 29 (Myakka fine sand, 0 to 2 percent slopes) were found to have soil components with a better drainage class. These better drained areas corresponded to the legacy map unit Lk and were large enough to delineate as a separate map unit.
- A new correlated and updated soil map unit was developed and delineated into a spatial product.
- Documentation collected verified the FNAI and legacy map units.
- A NASIS and GIS dataset was provided to the park staff to manage sites where the endangered Florida goldenaster (*Chrysopsis floridana*) occurs or can be reintroduced.
- NRCS provided services to a cooperating agency within Florida.
- The legacy map unit (Lk) will need to be investigated within Hillsborough County to determine drainage class and new map unit development.

