



SOILS DESCRIPTIONS

Southwest District

Charlotte Harbor Region

Big Cypress Region

Terra Ceia Preserve State Park

Soil Type Descriptions

Terra Ceia Preserve State Park

Bradenton fine sand, limestone substratum - This is a nearly level, poorly drained soil on low-lying ridges and hammocks. Slopes are smooth and range from 0 to 2 percent. Typically, the surface layer is very dark gray fine sand 6 inches thick. The subsurface layer in the upper part is grayish brown fine sand 11 inches thick and the lower part is brown fine sand 2 inches thick. The subsoil is fine sandy loam to a depth of 47 inches. In the upper part it is grayish brown to a depth of 30 inches, and below that, it is mottled grayish brown, light brownish gray, and yellowish brown. Below the subsoil there is hard limestone that has fractures and solution holes. Many areas are used for citrus or urban development. Some areas are used for vegetables. The native vegetation consists of slash pine, laurel and live oak, cabbage palm, waxmyrtle, magnolia, bluestems, sawpalmetto, and various vines.

Canaveral fine sand, 0-5% slopes - This is a nearly level to gently sloping, moderately well drained to somewhat poorly drained soil on narrow to broad dunelike ridges on the larger islands and keys and in some places on the mainland. The most extensive areas are on Anna Maria and Longboat Keys, and they range from a few hundred yards to 2 miles in width. Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The underlying material to a depth of about 17 inches is yellowish brown fine sand. Below that, to a depth of 34 inches it is light yellowish brown fine sand and about 45 percent shell fragments. It is very pale brown sand and shell fragments to a depth of 65 inches or more. The natural vegetation consists of salt-tolerant grasses and scattered palmetto in areas near the Gulf of Mexico.

Chobee loamy fine sand - This is a nearly level, very poorly drained soil that is in small to large depressions, poorly defined drainageways, and on broad, low flats. Slopes are smooth to concave and range from 0 to 2 percent. Typically, the surface layer is black loamy fine sand about 8 inches thick. The subsoil is sandy clay loam 43 inches thick. In the upper part is very dark gray to a depth of 44 inches, and below that, it is dark gray. The substratum to a depth of 80 inches or more is calcareous gray loamy fine sand and fine sand. In some areas this soil is in improved pasture, vegetables, and citrus. The natural vegetation in swampy areas consists of red maple, water oak, and cabbage palm and an understory of ferns and water tolerant grasses. In areas of open marshes and depressions it consists of maidencane, pickerelweed, smartweed, and patches of Sawgrass.

Chobee Variant sandy clay loam - This is a nearly level, very poorly drained soil in shallow depressions. Slopes are concave and less than 2 percent. Typically, the surface layer is black to very dark gray sandy clay loam about 20 inches thick. The subsoil to a depth of 35 inches is sandy clay loam, and to a depth of 40 inches it is sandy loam. It is light gray and very high in carbonates. The substratum is light gray loamy sand to a depth of 70 inches and light gray and brownish yellow sand and common shell fragments to a depth of 80 inches or more. The natural vegetation consists of swamp oak, swamp maple, cypress, grasses, vines, and forbs. In some areas it consists of prairie growth of Sawgrass, pickerelweed, various weeds and grasses, and scattered swamp maple. Most areas are used for timber or as range. Some areas are used for truck crops.

Delray-EauGallie complex - This complex consists of soils in nearly level, broad grassy sloughs that have poorly defined stream channels in some places. Some areas are located around the larger ponds. The soils are in the western part of the county, generally at an elevation of less than 40 feet. The soils are so intermixed that they could not be mapped separately at the scale selected for mapping. Slopes are less than 2 percent. Delray soils make up about 45 percent of this complex, EauGallie soils make up 35

percent, and scattered areas of Anclothe, Felda, Floridana, and Wabasso soils make up 20 percent. Typically, Delray soils are at a slightly lower elevation than EauGallie soils. Typically, the surface layer of Delray soils is black fine sand about 15 inches thick. The subsurface layer is grayish brown and light brownish gray fine sand about 40 inches thick. The subsoil is grayish brown and greenish gray fine sandy loam and sandy clay loam to a depth of 80 inches or more. Typically, the surface layer of EauGallie soils is dark gray fine sand about 4 inches thick. The subsurface layer is light gray fine sand 9 inches thick. The subsoil in the upper part is dark reddish brown and dark brown fine sand. Below that, it is gray sand 5 inches thick. In the lower part it is gray fine sandy loam to a depth of 76 inches or more. The natural vegetation consists of scattered pine trees, clumps of sawpalmetto, gallberry, and a stand of grasses such as bluestem, lopsided indiagrass, maidencane, and pineland threeawn.

EauGallie fine sand - This is a nearly level, poorly drained soil in broad areas of flatwoods. Slopes are smooth and range from 0 to 2 percent. Typically, the surface layer is very dark gray fine sand 5 inches thick. The subsurface layer is grayish brown and light brownish gray fine sand to a depth of about 28 inches. The subsoil in the upper part is black fine sand that is coated with organic matter to a depth of 42 inches. In the lower part it is grayish brown sandy clay loam to a depth of 50 inches. The substratum is grayish brown fine sand, loamy fine sand, and fine sandy loam to a depth of 65 inches. The natural vegetation is slash pine, sawpalmetto, waxmyrtle, gallberry, and pineland threeawn in open forest and bluestem, panicum, and other grasses.

Floridana-Immokalee-Okeelanta association - This map unit consists of nearly level, very poorly drained Floridana soils, poorly drained Immokalee soils, and very poorly drained Okeelanta soils. It is about 35 percent Floridana soils, 30 percent Immokalee soils, 20 percent Okeelanta soils, and 15 percent minor soils. These soils are in small to large shallow grassy ponds mainly in the central and eastern parts of the country. Generally, Okeelanta soils are in the lowest places near the center of the ponds; Floridana soils are in an intermediate position; and Immokalee soils are along the edges of ponds. Slopes are less than 2 percent. Areas of the individual soils are large enough to map separately, but in considering the present and predicted use they were mapped as one unit. Most of the mapped areas are circular or oblong. Typically, the surface layer of Floridana soils is black and very dark gray fine sand about 19 inches thick. The subsurface layer is gray fine sand about 17 inches thick. The subsoil is dark gray sandy clay loam 17 inches thick. The substratum is light gray fine sand that extends to a depth of 80 inches or more. Typically, the surface layer of Immokalee soils is black fine sand about 5 inches thick. The subsurface layer is dark gray, gray, and light gray fine sand 29 inches thick. The subsoil is dark reddish brown and dark brown fine sand 9 inches thick. The substratum to a depth of 80 inches or more is grayish brown fine sand. Typically, Okeelanta soils in the uppermost 20 inches are black muck. Below that, to a depth of 54 inches or more, there is black and light brownish gray sand. The natural vegetation in the lowest places is Sawgrass, maidencane, willow, and, in places, a few cypress. In other areas, the vegetation is maidencane, St.-Johnswort, various bluestems, smooth cordgrass, and sedges.

Myakka fine sand, tidal - This is a nearly level, very poorly drained soil in high lying tidal marshes between the mangrove swamps and better drained upland soils. Slopes are smooth to concave and range from 0 to 2 percent. Typically, the surface layer is mixed very dark gray and light gray fine sand about 3 inches thick. The subsurface layer is fine sand 12 inches thick. In the upper 4 inches it is gray, and below that, it is mixed gray and very dark gray. The subsoil is black fine sand 22 inches thick. The substratum is dark grayish brown, brown, and pale brown fine sand to a depth of 75 inches or more. In most areas the native vegetation consists of sparse stands of pines, mangrove, needlerush, and Sawgrass. In some areas Brazilian pepper is common. In many areas there is no vegetation.

Okeelanta muck, tidal - This is very poorly drained organic soil in the tidal marsh, mainly along the Manatee and Braden Rivers. Slopes are less than 2 percent. Typically, the surface layer is black and dark reddish brown muck to a depth of 39 inches. Below the muck there is light brownish gray sand to a depth of 60 inches or more. The native vegetation consists dominantly of needlegrass rush, seashore saltgrass, marshhay cordgrass, big cordgrass and smooth cordgrass.

Wabasso fine sand - This is a nearly level, poorly drained soil in areas of broad flatwoods. Slopes are less than 2 percent. Typically, the surface layer is very dark gray fine sand about 7 inches thick. The subsurface layer is gray fine sand 14 inches thick. The subsoil is fine sand coated with organic material to a depth of about 28 inches. In the upper 4 inches it is black, and in the lower 3 inches it is dark reddish brown. The next layer, to a depth of 37 inches is brown fine sand. Below that, to a depth of 65 inches, there is grayish brown to gray loamy material. The substratum to a depth of 80 inches or more is sand and many shell fragments. The native vegetation consists of longleaf and slash pines, scattered cabbage palms, and an understory of sawpalmetto, inkberry, waxmyrtle, creeping bluestem, indiagrass, little bluestem, Florida paspalum, pineland threeawn, panicums, deertongue, grassleaf goldaster, huckleberry and running oak. Most areas are in native vegetation and are grazed. Areas with adequate water control are used for citrus, truck crops, and improved pasture.

Wulfert-Kesson association - This map unit consists of nearly level, very poorly drained Wulfert and Kesson soils. It is about 45 percent Wulfert soils, 35 percent Kesson soils, and 20 percent other soils. These soils occur in a regular and repeating pattern in mangrove swamps along the Gulf Coast and on coastal islands. Generally, Kesson soils are in the outer parts of areas of this complex near the water's edge, and Wulfert soils are in the inner parts. Areas of the individual soils are large enough to map separately, but in considering the present and predicted use they are mapped as one unit. Slopes are less than 1 percent. Typically, the surface layer of Wulfert soils is dark reddish brown and dark brown muck that extends to a depth of about 36 inches. Below that, there is gray fine sand to a depth of 60 inches or more. Typically, the surface layer of Kesson soils is black fine sand 6 inches thick. Below the surface layer there is pale brown, light gray and white fine sand to a depth of 80 inches or more. Shell fragments are few to common in these layers. The natural vegetation consists mostly of mangrove, but in some places it also consists of seashore saltgrass, batis, and oxeye daisy. Some places are bare.

thick. In the upper 5 inches it is black, and below that, it is dark gray. The subsurface layer is 24 inches thick. In the uppermost 13 inches it is grayish brown sand, and below that, it is light gray fine sand. The subsoil, to a depth of 51 inches, is black sand. The substratum to a depth of 80 inches or more is sand that has pockets of sandy loam. In the upper 6 inches it is dark grayish brown, in the next 9 inches it is grayish brown, and in the lower part it is olive. Included with this soil in mapping are small areas of Myakka, Ona, and Pomona soils. In most years, the water table is within a depth of 10 inches for 1 to 4 months out of the year and within a depth of 40 inches for 6 months or more out of the year. It is above the subsoil early in the summer rainy season and after periods of heavy rainfall in other seasons. The water table recedes to a depth of more than 40 inches in extended dry seasons. The available water capacity is low in the surface layer, very low in the subsurface layer, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface layers, very slow to slow in the subsoil, and moderate to rapid in the substratum. Natural fertility and organic matter content are low. Large areas are cleared and used for improved pasture. The native vegetation consists of South Florida slash pine and an understory of saw palmetto, wax myrtle, gallberry, huckleberry, fetterbush, lopsided indiagrass, creeping bluestem, chalky bluestem, Florida threeawn, and pineland threeawn.

Zolfo Fine Sand, 0-2% slopes - This is a somewhat poorly drained soil on low to high ridges and knolls in flatwoods. Typically, the surface layer is very dark gray fine sand about 7 inches thick. The subsurface layer is light brownish gray, pale brown, and light gray fine sand. The subsoil begins at a depth of 65 inches. In the upper 7 inches it is dark grayish brown fine sand, and below that, it is dark brown fine sand to a depth of 80 inches or more. Included with this soil in mapping are areas of Cassia, Duette, Orsino, Pomello, and Tavares soils. Also included are soils that are very similar to Zolfo soils except that the subsoil is less well developed. Permeability is very rapid in the surface and subsurface layers and moderate in the subsoil. In most years, if this soil is not drained, the high water table is at a depth of 24 to 40 inches for 2 to 6 months out of the year. In some years the water table is at a depth of 10 to 24 inches for periods of as much as 2 weeks. The water table is at a depth of 60 inches for more than 9 months of the year. The available water capacity is low to very low in the surface and subsurface and medium in the subsoil. Natural fertility is low and the content of organic matter is low to very low.

The native vegetation consists of slash and longleaf pines, laurel, bluejack, turkey, live and water oaks and an understory of, saw palmetto, pineland threeawn, broomsedge and chalky bluestems, and other perennial grasses.

Zolfo Fine Sand, 2-5% slopes - This is a somewhat poorly drained soil on slopes of ridges that border the larger streams and rivers. Typically, the surface layer is gray fine sand about 4 inches thick. The subsurface layer is light brownish gray, pale brown, light gray and white fine sand. The subsoil begins at a depth of 65 inches. In the upper 15 inches it is dark reddish brown fine sand, and below that, it is black fine sand to a depth of 80 inches or more. Included with this soil in mapping are areas of Cassia, Duette, Orsino, Pomello, and Tavares soils. Also included are soils that are very similar to Zolfo soils except that the subsoil is less well developed and areas of Zolfo soils on 5 to 8 percent slopes. Permeability is very rapid in the surface and subsurface layers and moderate in the subsoil. In most years, if this soil is not drained, the high water table is at a depth of 24 to 40 inches for 2 to 6 months out of the year. In some years the water table is at a depth of 10 to 24 inches for periods of as much as 2 weeks. The water table is at a depth of 60 inches for more than 9 months of the year. The available water capacity is low to very low in the surface and subsurface and medium in the subsoil. Natural fertility is low and the content of organic matter is low to very low. The native vegetation consists of slash and longleaf pines, laurel, bluejack, turkey, live and water oaks and an understory of, saw palmetto, pineland threeawn, broomsedge and chalky bluestems, and other perennial grasses.

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Canaveral, fine sand, 0-2% slope - This is a nearly level, moderately well drained soil and somewhat poorly drained soil on low ridges. The available water capacity is low. Natural fertility is low. Permeability is very rapid. Natural vegetation consists of cabbage palm, seagrape, wild coffee, and an understory of vines and weeds. Brazilian pepper, an invasive exotic, may also be present.

Hallendale fine sand, 0-2% slope - This is a nearly level, poorly drained soil on low, broad flatwood areas. The available water capacity is low. Natural fertility is low. Permeability is moderate or moderately rapid. Natural vegetation consists of saw palmetto, pineland threeawn, bluestem, panicums and south Florida slash pine.

Matlacha-urban land complex - This complex consists of nearly level Matlacha gravely fine sand and areas of urban land. The depth of the water table varies with the amount of fill material and the extent

of artificial drainage. Most of the natural vegetation has been removed. The existing vegetation consists of scattered slash pine and various weeds.

Hallendale fine sand, 0-2% slope, tidal - This is a nearly level, poorly drained soil on the outer edges of tidal flats. The water table fluctuates with the tide. This soil is subject to tidal flooding. The available water capacity is low. Natural fertility is low. Permeability is moderately rapid. Natural vegetation consists of seashore saltgrass, black mangrove, batis and sea daisy. When in good or excellent condition, the saltwater marsh is dominated by smooth cordgrass, seashore saltgrass, and other grasses and forbs. Burning management is required to maintain these sites in their most desirable condition.

EauGallie sand, <1% slope - This is a nearly level, poorly drained soil on flatwoods. The available water capacity is very low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderately slow or moderate in the subsoil. Natural vegetation consists of saw palmetto, fetterbush, pineland threeawn and south Florida slash pine.

Pompano fine sand, 0-1% slope - This is a nearly level, poorly drained soil on sloughs. The available water capacity is very low. Natural fertility is low. Permeability is rapid. Natural vegetation consists of South Florida slash pine, chalky bluestem, pineland threeawn and runner oak.

Myakka fine sand, 0-2% slope - This is a nearly level, poorly drained soil on broad flatwood areas. The available water capacity is medium in the subsoil and very low in the surface and subsurface layers. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of saw palmetto, fetterbush, pineland threeawn and south Florida slash pine.

Felda fine sand, 0-2% slope - This is a nearly level, poorly drained soil on broad, nearly level sloughs. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate or moderately rapid in the subsoil. Natural vegetation consists of cabbage palm, pineland threeawn, south Florida slash pine, wax myrtle and maidencane.

Boca fine sand, 0-2% slope - This is a nearly level, poorly drained soil on flatwoods. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural vegetation consists of saw palmetto, pineland threeawn, south Florida slash pine and wax myrtle.

Valkaria fine sand, 0-1% slope - This is a nearly level, very poorly drained soil on sloughs. The available water capacity is low. Natural fertility is low. Permeability is rapid. Natural vegetation consists of sparse saw palmetto, South Florida slash pine and maidencane. Melaleuca, and invasive exotic, may also be present.

Estero muck, 0-1% slope - This is a nearly level, very poorly drained soil on broad tidal marsh areas. The water table fluctuates with the tide and is subject to tidal flooding. Natural vegetation consists of seashore saltgrass, batis, oxeye daisies, black mangrove and scattered red mangrove. When in good or excellent condition, the saltwater marsh is dominated by various saltgrass, and numerous other grasses and forbs. Burning is required to maintain these sites in their most desirable condition.

Peckish mucky fine sand, 0-1% slope - This is a nearly level, very poorly drained soil on broad tidal swamp areas. This water level fluctuates with the tide and the soil is subject to tidal flooding. Natural vegetation consists of black mangrove, American mangrove and batis.

Daytona sand, 0-5% slope - This is a nearly level to gently sloping, moderately well drained soil on low ridges on the flatwoods. The available water capacity is very low, except in the subsoil where it is medium. Natural fertility is low. Permeability is very rapid in the surface layer and moderately rapid in the subsoil. The natural vegetation consists of oaks, saw palmetto, south Florida slash pine and gallberry.

Matlacha gravelly fine sand, limestone substratum, 0-2% slope - This is a nearly level, somewhat poorly drained soil that formed as a result of earthmoving operations in areas that are underlain by limestone bedrock. The available water capacity is low. Permeability is variable, but it is estimated to be moderately rapid-to-rapid in the fill material and rapid in the upper part of the underlying material. It is moderately slow in lower horizons. Natural fertility is estimated to be low. Most of the natural vegetation has been removed. The existing vegetation consists of South Florida slash pine, and various scattered weeds.

Terra Ceia muck, 0-1% slope - This is a nearly level, very poorly drained organic soil on freshwater marsh areas. Available water capacity is medium. Natural fertility is moderate. Permeability is rapid. Natural vegetation consists of sawgrass, sand cordgrass and waxmyrtle.

Wulfert muck, 0-1% slope - This is a nearly level, very poorly drained soil on broad tidal swamps. Areas are subject to tidal flooding and water table fluctuates with the tide. Natural vegetation consists of mangroves, needle rush, cordgrasses, and saltgrass. Burning is required to maintain these sites in their most desirable condition.

Kesson fine sand, 0-1% slope - This is a nearly level, very poorly drained soil in broad tidal swamps. Areas are subject to tidal flooding. The water table fluctuates with the tide. Natural fertility is low. Permeability is moderately rapid. This soil has a high salt and sulfur content. Natural vegetation consists of black mangrove, batis, oxeye daisy and American mangrove.

Pineda fine sand, 0-1% slope - This is a nearly level, poorly drained soil on sloughs. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and the upper sandy part of the subsoil and slow, or very slow in the lower, loamy part of the subsoil. Natural vegetation consists of pineland threeawn, panicums, sedges, maidencane, wax myrtle, south Florida slash pine, and scattered clumps of saw palmetto.

Pompano fine sand, depressional, <1% slope - This is a nearly level, poorly drained soil in depressions. The available water capacity is low. Natural fertility is low. Permeability is rapid. A large part of the acreage is in natural vegetation: St. Johnswort and wax myrtle.

Immokalee sand, 0-2% slope - This is a nearly level, poorly drained soil in flatwood areas. The available water capacity is medium in the subsoil and very low in the surface and subsurface layers. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of saw palmetto, fetterbush, pineland threeawn and south Florida slash pine.

Punta fine sand, 1-2% slope - This is a nearly level, poorly drained soil that occurs on slightly elevated landscapes on flatwoods. The available water capacity is low. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural vegetation consists of sawpalmetto, South Florida slash pine, pineland threeawn, waxmyrtle and some scrub oak.

Oldsmar sand, 0-2% slope - This is a nearly level, poorly drained soil on low, broad, flatwoods areas. The available water capacity is low in the surface layer and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate in the upper part of the subsoil, and slow or very slow in the lower part of the subsoil. Natural vegetation consists of sawpalmetto, South Florida slash pine, pineland threeawn and meadow beauty.

Malabar fine sand, 0-1% slope - This is a nearly level, poorly drained soil on sloughs. The available water capacity is low in the surface and subsurface layers and the upper part of the subsoil and medium in the lower part of the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and the upper part of the subsoil and slow or very slow in the lower part of the subsoil. Natural vegetation consists of pineland threeawn, waxmyrtle, scattered sawpalmetto, maidencane, panicums and South Florida slash pine.

Wabasso sand, 0-2% slope - This is a nearly level, poorly drained soil on flatwoods. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and slow or very slow in the lower part of the subsoil. Natural vegetation consists of sawpalmetto, South Florida slash pine, pineland threeawn, cabbage palm and bluestem.

Satellite fine sand 0-2% slope - This is a nearly level, somewhat poorly drained soil on low knolls and ridges. Available water capacity is low. Natural fertility is low. Permeability is very rapid. Natural vegetation consists of Florida rosemary, sand live oak, saw palmetto, South Florida slash pine and pineland threeawn.

Isles fine sand, depressional, 0-1% slope - This is a nearly level, poorly drained soil in depressions. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low. Natural vegetation consists of cabbage palm, water oak and maidencane.

Anclote sand, depressional, <1% slope - This is a nearly level, poorly drained soil in isolated depressions. The available water capacity is medium in the surface layer and low in the substratum. Natural fertility is medium. Permeability is rapid. Natural vegetation consists of cypress, leatherleaf fern, waxmyrtle, pickerelweed and greenbrier.

Wabasso sand, limestone substratum, 0-2% slope - This is a nearly level, poorly drained soil on broad flatwoods. The available water capacity is low in the surface and subsurface layers and the upper part of the subsoil and medium in the lower part of the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and the upper part of the subsoil and. It is slow in lower part of the subsoil. Natural vegetation consists of saw palmetto, south Florida slash pine, dwarf huckleberry, cabbage palm, gallberry, andw pineland threeawn.

Smyrna fine sand, 0-2% slope - This is a nearly level, poorly drained soil on flatwoods. The available water capacity is very low in the surface and subsurface layers and medium in the subsoil. Natural

fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of saw palmetto, south Florida slash pine, wax myrtle, inkberry, dwarf huckleberry and pineland threeawn.

Copeland sandy loam, depressional, <1% slope - This is a nearly level, very poorly drained soil in depressions. The available water capacity is medium. Natural fertility is medium. Permeability is rapid in the surface layer and moderate in the subsoil. Natural vegetation consists of scattered cypress, wax myrtle, cabbage palm, fern, redroot and other water-tolerant plants.

Olsmar fine sand, limestone substratum, 0-2% slope - This is a nearly level, poorly drained soil in the flatwoods. Natural fertility is low; permeability is rapid in the surface and subsurface layers, moderately slow in the upper part of the subsoil, and slow or very slow in the lower part of the subsoil. The natural vegetation consists of saw palmetto, South Florida slash pine, inkberry and pineland threeawn.

Myakka fine sand, depressional, <1% slope - This is a nearly level, poorly drained soil in depressions. The available water capacity is very low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of scattered cypress, St. Johnswort, sedges, maidencane, sand cordgrass and wax myrtle. Non-native vegetation includes melaleuca.

Isles muck, 0-1% slope - This is a nearly level, very poorly drained soil in tidal swamps. Areas are subject to tidal flooding and water table fluctuates with the tide. Natural vegetation consists of red and black mangrove, batis and sea purslane. When in good or excellent condition, the saltwater marsh is dominated by cordgrasses, saltgrass, and other grasses and forbs. Burning is required to maintain these sites in their most desirable condition.

Boca fine sand, tidal, <1% slope - This is a nearly level, poorly drained saline that is subject to tidal flooding. The available water capacity is low in the surface and subsurface layers and upper part of the subsoil and medium or high in the lower part of the subsoil. Natural fertility is low because of the excess sodium throughout the profile. Permeability is rapid in the surface and subsurface layers and the upper part of the subsoil and moderate in the lower part of the subsoil. Natural vegetation consists of buttonbush, sea daisy, seashore saltgrass, saltwort, scattered black and white mangrove and scattered cabbage palm. Brazilian pepper and invasive exotic species may also be scattered here.

Malabar fine sand, high, 0-2% slope - This is a nearly level, poorly drained soil in the flatwoods. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and the sandy part of the subsoil and moderately slow in the lower, loamy part of the subsoil. Natural vegetation consists of saw palmetto, cabbage palm, South Florida slash pine, wax myrtle and pineland threeawn.

Matlacha gravelly fine sand, 0-2% slope - This is a nearly level, somewhat poorly drained soil formed by filling and earthmoving operations. The available water capacity is variable, but it is estimated to be low. Permeability is variable within short distances, but it is estimated to be moderately rapid-to-rapid in the fill material and rapid in the underlying material. Natural fertility is estimated to be low. Most of the natural vegetation has been removed. The existing vegetation consists of South Florida Slash Pine and various scattered weeds.

Stump Pass Beach State Park

Canaveral Fine Sand - The soils of the Canaveral series are very rapidly permeable soils that formed in thick marine deposits of sand and shell fragments. These nearly level soils are on low ridges and in depressions along the Gulf Coast. They are associated with beaches. Canaveral Fine Sand is nearly level, moderately well drained and somewhat poorly drained soil on low ridges. Slopes are smooth to slightly convex and range from 0 to 2 percent. Typically, the surface layer is black and dark gray fine sand mixed with shell fragments and is about 15 inches thick. The underlying layers are light brownish gray and light gray fine sand mixed with shell fragments to a depth of 80 inches or more. The available water capacity is very low. Natural fertility is low. Permeability is very rapid. Natural vegetation includes seagrape, wild coffee and myrsine.

Kesson Fine Sand - Kesson Fine Sand is associated with Wulfert Muck. It is a nearly level, very poorly drained soil in tidal swamps. Areas are subject to tidal flooding. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is about 6 inches of sand that contains shell fragments. The underlying layers are fine sand that contains shell fragments, and they extend to a depth of 80 inches or more. Natural vegetation consists of mangrove trees, pickle weed and oxeye daisy.

Beaches. Canaveral Fine Sand - The soils of the Canaveral series are very rapidly permeable soils that formed in thick marine deposits of sand and shell fragments. These nearly level soils are on low ridges and in depressions along the Gulf Coast. They are associated with beaches. Canaveral Fine Sand is nearly level, moderately well drained and somewhat poorly drained soil on low ridges. Slopes are smooth to slightly convex and range from 0 to 2 percent. Typically, the surface layer is black and dark gray fine sand mixed with shell fragments and is about 15 inches thick. The underlying layers are light brownish gray and light gray fine sand mixed with shell fragments to a depth of 80 inches or more. The available water capacity is very low. Natural fertility is low. Permeability is very rapid. Natural vegetation includes seagrape, wild coffee and myrsine.

Kesson Fine Sand - Kesson Fine Sand is associated with Wulfert Muck. It is a nearly level, very poorly drained soil in tidal swamps. Areas are subject to tidal flooding. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is about 6 inches of sand that contains shell fragments. The underlying layers are fine sand that contains shell fragments, and they extend to a depth of 80 inches or more. Natural vegetation consists of mangrove trees, pickle weed and oxeye daisy.

Beaches - Beaches consist of narrow strips of nearly level, mixed sand and shell fragments along the Gulf of Mexico. These areas are covered with saltwater at daily high tides. Usually bare of vegetation, they are unstable and subject to being shifted by storms and longshore currents. Beaches are geographically with Canaveral soils. Beaches consist of narrow strips of nearly level, mixed sand and shell fragments along the Gulf of Mexico. These areas are covered with saltwater at daily high tides. Usually bare of vegetation, they are unstable and subject to being shifted by storms and longshore currents. Beaches are geographically with Canaveral soils.

Don Pedro Island State Park

Canaveral Fine Sand, 0-2% slopes - This soil is nearly level and is somewhat poorly drained. It is located on the deep, sandy ridges and flats on marine terraces. The mapped area is large and ranges approximately 11,520 acres. The slopes are linear and convex. Typically, this soil has a surface layer of black fine sand about 7 inches thick. The underlying material is fine sand. The upper part is dark gray in color and extends to a depth of 15 inches. The next layer is light brownish gray and 80 inches deep.

Included with this soil in mapping are some small areas of Captiva soil that makes up about 3 percent or less of the map unit. This soil has a water table at a depth of 12 to 36 inches. The available water capacity is very low. The permeability is very rapid.

Myakka Fine Sand, 0-2% slopes - This soil is nearly level and is poorly drained. It is on the broad flatwoods within the uplands of the county. The slopes of this soil are smooth to slightly concave. Typically, this soil has a surface layer of very dark gray fine sand about 3 inches thick. The subsurface layer is fine sand about 23 inches thick. The upper part, to a depth of 3 inches is gray. The lower part, to a depth of 23 inches, is light gray. The upper part of the subsoil to a depth of 27 inches is dark black and firm and the next 5 inches is dark reddish brown and friable. The lower part to a depth of 43 inches is mixed black and dark reddish brown. Included with this soil in mapping are small areas of EauGallie, Immokalee, Oldsmar, Smyrna and Wabasso soils. The included soils make up about 15 percent or less of the map unit. This soil has a high water table at a depth of 6-18 inches for 1 to 3 months and 10 to 40 inches below the surface for 2 to 6 months. It recedes to a depth of more than 40 inches during extended dry periods. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil.

Beaches - This soil is nearly level and poorly drained. These areas consist of narrow strips of shell and sand fragments along the Gulf of Mexico. Slopes are convex and range from 0 to 3 percent. The depth to water table can vary from 0-72 inches.

Kesson Fine Sand, 0-1% slopes - This is a nearly level, very poorly drained soil on broad tidal swamps. Areas are subject to tidal flooding. Slopes are smooth. Typically, the surface layer is about 6 inches of sand that contains shell fragments. The underlying layers are fine sand that contains shell fragments, and they extend to a depth of 80 inches or more. The upper 4 inches is pale brown, the next 3 inches is light brownish gray, the next 25 inches is light gray with dark gray streaks and the lower 42 inches is white. Included with this soil in mapping are areas of Captiva and Wulfert soils and soils that have organic surface layers. Also included are soils that have loamy material throughout. Included soils make up about 10 to 15 percent of any mapped area. The water table fluctuates with the tide and ranges from 0-6 inches. The available water capacity is low. Permeability is moderately rapid or rapid.

Immokalee sand, 0-2% slopes - This is a nearly level, poorly drained soil in flatwoods areas. Slopes are smooth to convex. Immokalee soil makes up about 90 percent of this map unit. Minor components included with this soil when mapping are EauGallie, Myakka, Oldsmar, Smyrna and Wabasso. Typically, the surface layer is black sand about 4 inches thick. The subsurface layer is dark gray sand in the upper 5 inches and light gray sand in the lower 27 inches. The subsoil is sand to a depth of 69 inches. The upper 14 inches is black and firm, the next 5 inches is dark reddish brown, and the lower 14 inches is dark yellowish brown. The substratum is very pale brown sand to a depth of 80 inches or more. The soil in this map unit has a high water table within 6-18 inches of the surface for 1 to 3 months and 10 to 40 inches below the surface for 2 to 6 months. It recedes to a depth of more than 40 inches during extended dry periods. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and moderate or moderately rapid in the subsoil.

Satellite fine sand, 0-2% slopes - This is a nearly level, somewhat poorly drained soil on low knolls and ridges. Slopes are smooth to convex. Typically, the surface layer is gray fine sand about 3 inches thick. The substratum extends to a depth of 80 inches or more and is white and light gray fine sand. Included with this soil in mapping are small areas of Immokalee, Myakka, Daytona and Pompano soils. Included

soils generally make up 10 percent or less of any mapped area. In most years, under natural conditions, this soil has a water table at a depth of 12 to 42 inches for 2 to 6 months and at a depth of 42 to 72 inches for 6 months or more. The available water capacity is very low. Permeability is very rapid.

St. Augustine sand, 0-2% slopes - This is a nearly level, somewhat poorly drained soil formed by fill and earthmoving operations. Most areas are former sloughs and depressions or other low areas that have been filled with sandy material. Slopes are smooth to slightly convex and range from 0 to 2 percent. There are no definite horizonation because the soil has been mixed during movement and reworking of the fill material. Typically, the upper 30 inches consists of mixed very dark grayish brown, very dark gray, dark gray and gray sand with a few lenses of silt loam and about 20 percent multicolored shell fragments less the 3 inches in diameter. Below this to a depth of 80 inches or more is undisturbed fine sand. The upper 10 inches is dark grayish brown with about 15 percent multicolored shell fragments. The lower 40 inches is light gray with about 30 percent multicolored shell fragments. Included with this soil in mapping are areas where the fill material is underlain by organic soils and other areas where the mixed fill material is less than 20 inches thick. Also included are areas that contain lenses or pockets of organic material throughout the fill. In addition, there are small-scattered areas with more than 35 percent shells or shell fragments within the fill. Several areas with some urban development or in related uses have been included. These areas typically make up less than 5 percent of the map unit. This soil has a water table that varies with the amount of fill material and artificial drainage within any mapped area. However, in most years, the water table is 24 to 36 inches below the surface of the fill material for 2 to 4 months. It is below a depth of 60 inches during extended dry periods. The available water capacity is low. Permeability is estimated to be rapid.

Gasparilla Island State Park

Canaveral fine sand - This is a nearly level, moderately well drained and somewhat poorly drained soil on low ridges. Slopes are smooth to slightly convex and range from 0 to 2 percent. Typically, the surface layer is black and dark gray fine sand mixed with shell fragments and is about 15 inches thick. The underlying layers are light brownish gray and light gray fine sand mixed with shell fragments to a depth of 80 inches or more. Included with this soil are small areas of Captiva and Kesson soils. Included soils generally make up less than 10 percent of any mapped areas. In most years, under natural conditions, this soil has a water table depth of 18 to 40 inches for 2 to 6 months. The water table recedes to a depth of more than 40 inches during February through July. The available water capacity is very low. Natural fertility is low. Permeability is very rapid. Natural vegetation consists of cabbage palm, seagrape, wild coffee, and an understory of vines and weeds.

Captiva fine sand - This is nearly level, poorly drained soil in sloughs. Slopes are smooth to concave and range from 0 to 1 percent. Typically, the surface layer is black fine sand about 6 inches thick. The underlying layers are fine sand mixed with shell fragments to a depth of 80 inches or more. The upper 9 inches is pale brown with light gray streaks, the next 11 inches is light gray with many pale brown mottles, the next 4 inches is light gray with about 30 percent multicolored shell fragments, and the lower 50 inches is light gray. Included with this soil in mapping are small areas of Canaveral and Kesson soils. Also included are scattered areas of Captiva fine sand that is ponded and soils that are similar to Captiva soils but have more than 35 percent multicolored shell fragments larger than 2 millimeters between depths of 10 and 40 inches. Included soils make up about 5 to 10 percent of any mapped area. In most years, under natural conditions, this soil has a water table within a depth of 10 inches for 1

to 2 months. The water table is at a depth of 10 to 40 inches for 10 months during most years. In some years, the soils are covered by standing water for several days. The available water capacity is low. Permeability is very rapid. Natural vegetation consists of cabbage palm, Brazilian pepper, sand cordgrass, leatherleaf fern, and waxmyrtle.

Wulfert Muck - This is a nearly level, very poorly drained soil in broad tidal swamps. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is muck that is dark reddish brown to a depth of 12 inches and dark brown to a depth of 36 inches. Beneath the muck is gray fine sand with light gray streaks and about 10 percent shell fragments. Included with this soil in mapping, and making up about 15 percent of the mapping unit, are small areas of Kesson soils and soils similar to Wulfert soils, but with limestone at a depth of 20 to 40 inches. The water table fluctuates with the tide. Areas are subject to tidal flooding. The available water capacity is high in the organic horizons and low in the horizons below. Natural fertility is medium. Permeability is rapid. Natural vegetation consists of American mangrove, black mangrove, and needlegrass.

Kesson fine sand - This is a nearly level, very poorly drained soil in broad tidal swamps. Areas are subject to tidal flooding. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is about 6 inches of sand that contains shell fragments. The underlying layers are fine sand that contains shell fragments, and they extend to a depth of 80 inches or more. The upper 4 inches is pale brown, the next 3 inches is light brown, the next 25 inches is light gray with dark gray streaks, and the lower 42 inches is white. Included with this soil in mapping are areas of Captiva and Wulfert soils and soils that have organic surface layers. Also included are soils that have loamy material throughout. Included soils make up about 10 to 15 percent of any mapped area. The water table fluctuates with the tide. The available water capacity is low. Natural fertility is low. Permeability is moderately rapid or rapid. Natural vegetation consists of black mangrove, batis, oxeye daisy, and American mangrove.

St. Augustine sand - This is a nearly level, somewhat poorly drained soil that was formed by earthmoving operations. Most areas are former sloughs and depressions or other low areas that have been filled with sandy material. Slopes are smooth to slightly convex and range from 0 to 2 percent. This soil has no definite horizonation because of mixing during reworking of the fill material. Typically, the upper 30 inches consists of mixed very dark grayish brown, very dark gray, dark gray, and gray sand with a few lenses of silt loam; it is about 20 percent multicolored shell fragments less than 3 inches in diameter. Below this to a depth of 80 inches or more there is undisturbed fine sand. The upper 10 inches is dark grayish brown with about 15 percent multicolored shell fragments. The lower 40 inches is light gray with about 30 percent multicolored shell fragments. Included with this soil in mapping are areas where the fill material is underlain by organic soils and other areas where the fill material is less than 20 inches thick. Also included are areas that contain lenses or pockets of organic material throughout the fill. In addition, there are small scattered areas where the fill material is more than 35 percent shells or shell fragments. Several areas with some urban development have been included. The depth to the water table varies with the amount of fill material and the extent of artificial drainage. However, in most years, the water table is 24 to 36 inches below the surface of the fill material for 2-4 months. It is below a depth of 60 inches during extended dry periods. The available water capacity is low. Permeability is estimated to be rapid. Natural fertility is low. Most of the natural vegetation has been removed. The present vegetation consists of cabbage palm and various scattered weeds. This soil is poorly suited to most plants unless topsoil is spread over the surface to make a suitable root zone. This soil has severe

limitations for most urban and recreational uses. The sandy nature of the fill material, the high water table, and rapid permeability can cause pollution of ground water in areas with septic tank adsorption fields. This St. Augustine soil is in capability subclass VII.

Cayo Costa State Park

Canaveral fine sand - This is a nearly level, moderately well drained and somewhat poorly drained soil on low ridges. Slopes are smooth to slightly convex and range from 0 to 2 percent. Typically, the surface layer is black and dark gray fine sand mixed with shell fragments and is about 15 inches thick. The underlying layers are light brownish gray and light gray fine sand mixed with shell fragments to a depth of 80 inches or more. Included with this soil are small areas of Captiva and Kesson soils. Included soils generally make up less than 10 percent of any mapped areas. In most years, under natural conditions, this soil has a water table depth of 18 to 40 inches for 2 to 6 months. The water table recedes to a depth of more than 40 inches during February through July. The available water capacity is very low. Natural fertility is low. Permeability is very rapid. Natural vegetation consists of cabbage palm, seagrape, wild coffee, and an understory of vines and weeds.

Captiva fine sand - This is nearly level, poorly drained soil in sloughs. Slopes are smooth to concave and range from 0 to 1 percent. Typically, the surface layer is black fine sand about 6 inches thick. The underlying layers are fine sand mixed with shell fragments to a depth of 80 inches or more. The upper 9 inches is pale brown with light gray streaks, the next 11 inches is light gray with many pale brown mottles, the next 4 inches is light gray with about 30 percent multicolored shell fragments, and the lower 50 inches is light gray. Included with this soil in mapping are small areas of Canaveral and Kesson soils. Also included are scattered areas of Captiva fine sand that is ponded and soils that are similar to Captiva soils but have more than 35 percent multicolored shell fragments larger than 2 millimeters between depths of 10 and 40 inches. Included soils make up about 5 to 10 percent of any mapped area. In most years, under natural conditions, this soil has a water table within a depth of 10 inches for 1 to 2 months. The water table is at a depth of 10 to 40 inches for 10 months during most years. In some years, the soils are covered by standing water for several days. The available water capacity is low. Permeability is very rapid. Natural vegetation consists of cabbage palm, Brazilian pepper, sand cordgrass, leather fern, and wax myrtle.

Beaches - Beaches consist of narrow strips of nearly level, mixed sand and shell fragments along the Gulf of Mexico. These areas are covered with saltwater at daily high tides. The areas are subject to movement by the wind and tide and are bare of vegetation in most places. The only vegetation is salt-tolerant plants. Beaches are geographically associated with Canaveral soils. Beaches are used intensively for recreation during the entire year. Homes, condominiums, beach cottages and motels have been built on the fringes of beaches in many places.

Wulfert Muck - This is a nearly level, very poorly drained soil in broad tidal swamps. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is muck that is dark reddish brown to a depth of 12 inches and dark brown to a depth of 36 inches. Beneath the muck is gray fine sand with light gray streaks and about 10 percent shell fragments. Included with this soil in mapping, and making up about 15 percent of the mapping unit, are small areas of Kesson soils and soils similar to Wulfert soils, but with limestone at a depth of 20 to 40 inches. The water table fluctuates with the tide. Areas are subject to tidal flooding. The available water capacity is high in the organic horizons and low in the horizons below.

Natural fertility is medium. Permeability is rapid. Natural vegetation consists of American mangrove, black mangrove, and needlegrass.

Kesson fine sand - This is a nearly level, very poorly drained soil in broad tidal swamps. Areas are subject to tidal flooding. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is about 6 inches of sand that contains shell fragments. The underlying layers are fine sand that contains shell fragments, and they extend to a depth of 80 inches or more. The upper 4 inches is pale brown, the next 3 inches is light brown, the next 25 inches is light gray with dark gray streaks, and the lower 42 inches is white. Included with this soil in mapping are areas of Captiva and Wulfert soils and soils that have organic surface layers. Also included are soils that have loamy material throughout. Included soils make up about 10 to 15 percent of any mapped area. The water table fluctuates with the tide. The available water capacity is low. Natural fertility is low. Permeability is moderately rapid or rapid. Natural vegetation consists of black mangrove, batis, oxeeye daisy, and American mangrove.

St. Augustine sand - This is a nearly level, somewhat poorly drained soil that was formed by earthmoving operations. Most areas are former sloughs and depressions or other low areas that have been filled with sandy material. Slopes are smooth to slightly convex and range from 0 to 2 percent. This soil has no definite horizonation because of mixing during reworking of the fill material. Typically, the upper 30 inches consists of mixed very dark grayish brown, very dark gray, dark gray, and gray sand with a few lenses of silt loam; it is about 20 percent multicolored shell fragments less than 3 inches in diameter. Below this to a depth of 80 inches or more there is undisturbed fine sand. The upper 10 inches is dark grayish brown with about 15 percent multicolored shell fragments. The lower 40 inches is light gray with about 30 percent multicolored shell fragments. Included with this soil in mapping are areas where the fill material is underlain by organic soils and other areas where the fill material is less than 20 inches thick. Also included are areas that contain lenses or pockets of organic material throughout the fill. In addition, there are small scattered areas where the fill material is more than 35 percent shells or shell fragments. Several areas with some urban development have been included. The depth to the water table varies with the amount of fill material and the extent of artificial drainage. However, in most years, the water table is 24 to 36 inches below the surface of the fill material for 2-4 months. It is below a depth of 60 inches during extended dry periods. The available water capacity is low. Permeability is estimated to be rapid. Natural fertility is low. Most of the natural vegetation has been removed. The present vegetation consists of cabbage palm and various scattered weeds. This soil is poorly suited to most plants unless topsoil is spread over the surface to make a suitable root zone. This soil has severe limitations for most urban and recreational uses. The sandy nature of the fill material, the high water table, and rapid permeability can cause pollution of ground water in areas with septic tank adsorption fields. This St. Augustine soil is in capability subclass VIIc.

Mound Key Archaeological State Park

Kesson fine sand - This is a nearly level, very poorly drained soil in broad tidal swamps, subject to tidal flooding. Slopes are smooth and range from zero to one percent. Typically, the surface layer is sand, about six inches thick, which contains shell fragments. The underlying layers are fine sand, down to a depth of 80 inches or more. The upper four inches is pale brown; the next three inches is light brownish gray; the next 25 inches is light gray with dark gray streaks, and the lower 42 inches is white. Included with this soil in mapping are areas of Captiva and Wulfert soils, and soils that have organic surface

layers. Also included are soils that have loamy material throughout. Included soils make up about 10 to 15 percent of any mapped area. The water table fluctuates with the tide. The available water capacity is low. Natural fertility is low. Permeability is moderately rapid or rapid. Natural vegetation on Kesson fine sand is characterized by red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*), and sea oxeye daisy (*Borrchia frutescens*). This soil has severe limitations for urban development, and is poorly suited for cultivated crops, pasture grasses, citrus and woodland because of the flood hazard and salt and sulphur content.

Estero Bay Preserve State Park

Pompano fine sand, depressional - This is a nearly level, poorly drained soil in depressions. The available water capacity is low. Natural fertility is low. Permeability is rapid. A large part of the acreage is in natural vegetation: St. Johnswort and wax myrtle.

Immokalee sand - This is a nearly level, poorly drained soil in flatwood areas. The available water capacity is medium in the subsoil and very low in the surface and subsurface layers. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of saw palmetto, fetterbush, pineland threeawn, and South Florida slash pine.

Satellite fine sand - This is a nearly level, somewhat poorly drained soil on low knolls and ridges. The available water capacity is very low. Natural fertility is low. Permeability is very rapid. Natural vegetation consists of Florida rosemary, sand liveoak, saw palmetto, South Florida slash pine, and pineland threeawn.

Isles fine sand, depressional - This is a nearly level, poorly drained soil in depressions. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low. Natural vegetation consists of cabbage palm, cypress, fern, water oak, and popash. Non-native vegetation consists of melaleuca.

Wabasso sand limestone substratum - This is a nearly level, poorly drained soil on broad flatwoods. The available water capacity is low in the surface and subsurface layers and the upper part of the subsoil and medium in the lower part of the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and the upper part of the subsoil. It is slow in the lower part of the subsoil. Natural vegetation consists of saw palmetto, South Florida slash pine, dwarf huckleberry, cabbage palm, gallberry, and pineland threeawn.

Smyrna fine sand - This is a nearly level, poorly drained soil on flatwoods. The available water capacity is very low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of saw palmetto, South Florida slash pine, wax myrtle, inkberry, dwarf huckleberry, and pineland threeawn.

Copeland sandy loam, depressional - This is a low, nearly level, very poorly drained soil in depressions. The available water capacity is medium. Natural fertility is medium. Permeability is rapid in the surface layer and moderate in the subsoil. Natural vegetation is cypress, wax myrtle, cabbage palm, fern, redroot, and other water-tolerant plants.

Myakka fine sand, depressional - This is a nearly level, poorly drained soil in depressions. The available water capacity is very low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of scattered cypress, St. Johnswort, sedges, maidencane, sand cordgrass, and wax myrtle.

Isles muck - This is a nearly level, very poorly drained soil in tidal swamps. Areas are subject to tidal flooding and water table fluctuates with the tide. Natural vegetation consists of red and black mangrove, batis, and sea purslane. When in good or excellent condition, the saltwater marsh is dominated by various cordgrasses, saltgrass, and other grasses and forbs. Burning is required to maintain these sites in their most desirable condition.

Matlacha gravelly fine sand - This is a nearly level, somewhat poorly drained soil formed by filling and earthmoving operations. The available water capacity is variable, but it is estimated to be low. Permeability is variable within short distances, but is estimated to be moderately rapid to rapid in the fill material and rapid in the underlying material. Natural fertility is estimated to be low. Most of the natural vegetation has been removed. The existing vegetation consists of South Florida slash pine and various scattered weeds.

Koreshan Historic State Park

Hallandale Fine Sand - This is a nearly level, poorly drained soil on low, broad flatwoods areas. Slopes are smooth and range from 0 to 2 percent. Typically, the surface layer is gray fine sand about 2 inches thick. The subsurface layer is light gray fine sand about 5 inches thick. The substratum is very pale brown fine sand about 5 inches thick. At a depth of 12 inches is fractured limestone bedrock that has solution holes extending to a depth of 25 inches. These solution holes contain mildly alkaline, loamy material. Included with this soil in mapping are small areas of Boca soils and soils that have yellowish horizons or a brownish stain between the subsurface layer and limestone. Also included are scattered areas of rock outcrop, which are less than 1 acre, and soils that have hard calcareous material at a depth of less than 20 inches. Included soils generally make up about 5 to 10 percent of any mapped area. In most years, under natural conditions, the water table is less than 10 inches below the surface for 1 to 3 months. It recedes below the limestone for about 7 months. The available water capacity is very low. Natural fertility is low. Permeability is moderate or moderately rapid. Natural vegetation consists of sawpalmetto, pineland threeawn, bluestem, panicum, and south Florida slash pine. This soil is poorly suited to cultivated crops because of wetness, shallow depth, and sandy texture. The number of adapted crops is limited unless good water control measures and soil improving measures are used. This soil can be made suitable for some vegetable crops by using a water control system that will remove excess water in wet seasons and provide water through subsurface irrigation in dry seasons. The presence of rock near the surface, however, makes construction of such a system difficult. Row crops should be rotated with close-growing, soil-improving crops on the land three-fourths of the time. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be added according to the need of the crops. This soil is well suited to pasture. Pangolagrass, improved bahiagrass, and white clover grow well if they are well managed. Water control measures are needed to remove excess surface water after heavy rains. Regular applications of fertilizer and lime are needed and grazing should be controlled to prevent overgrazing and weakening of the plants.

Matlacha-Urban land complex - This complex consists of nearly level Matlacha gravelly fine sand and areas of Urban land. The areas of the Matlacha soil and of Urban land are so intermingled that it was not practical to map them separately at the scale used for mapping. The mapped areas range from about 20 to 640 acres. About 35 to 50 percent is Urban land presently covered by houses and other buildings and by streets and other forms of pavement. There are canals in some of the areas. Typically, the surface layer of the Matlacha soil is about 40 inches of light gray, gray, very pale brown, grayish brown, very dark grayish brown, and dark gray mixed gravelly fine sand and sandy material. The surface layer contains lenses of loamy sand and coated sandy fragments of a former subsoil and is about 25 percent coarse fragments of limestone and shell. Below the surface layer, to a depth of 80 inches or more, there is undisturbed fine sand. The upper 6 inches is dark gray and the rest is light gray with dark grayish brown stains and streaks along old root channels. Included in mapping, and scattered throughout the survey area, are soils that are similar to the Matlacha soil, but they have heavy loamy material and soils that have boulders or are more than 35 percent shell or rock fragments larger than 3 inches. In addition, there are areas of similar soils that have a limestone ledge below the mixed fill

material. Also included are areas of fill material that are less than 20 inches thick over undisturbed soils. The included soils make up about 10 to 15 percent of any mapped area. The depth to the water table varies with the amount of fill material and the extent of artificial drainage. However, in most years, the water table is 24 to 36 inches below the surface of the fill material for 2 to 4 months. It is below a depth of 60 inches during extended dry periods. The available water capacity is variable, but it is estimated to be low. Permeability is variable within short distances, but it is estimated to be moderately rapid or rapid in the fill material and rapid in the underlying material. Natural fertility is estimated to be low. Most of the natural vegetation has been removed. The existing vegetation consists of scattered South Florida slash pine and various weeds.

Pompano fine sand - This is a nearly level, poorly drained soil on sloughs. Slopes are smooth to concave and range from 0 to 1 percent. Typically, the surface layer is dark gray fine sand about 4 inches thick. The underlying layers are light gray, very pale brown, or white fine sand and extend to a depth of 80 inches or more. Included with this soil in mapping are small areas of Malabar, Anclothe, and Valkaria soils. Also included are small areas of a soil that has limestone at a depth of 40 to 80 inches. The included soils make up about 10 to 15 percent of any mapped area. In most years, under natural conditions, the water table is at a depth of less than 10 inches for 2 to 4 months and at a depth of 10 to 40 inches for about 6 months. It recedes to a depth of more than 40 inches for about 3 months. During periods of high rainfall, the soil is covered by slowly moving water for periods of about 7 to 30 days or more. The available water capacity is very low. Natural fertility is low. Permeability is rapid. Natural vegetation consists of pineland threeawn, scattered South Florida slash pine, bluestem, maidencane, and scattered saw palmetto. This soil is poorly suited to cultivated crops because of wetness and sandy texture. The kinds of crops that will grow on this soil are limited unless very intensive management practices are followed. With good water control measures and soil-improving measures, this soil can be made suitable for some vegetable crops. A water control system is needed to remove excess water in wet seasons and provide water through subsurface irrigation in dry seasons. Row crops should be rotated with close-growing, soil-improving crops. The rotation should keep the soil-improving crops on the land three-fourths of the time. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be added according to the needs of the crops. The soil is poorly suited to citrus. It is suitable for citrus only after a carefully designed water control system has been installed that will maintain the water table below a

depth of 4 feet. The trees should be planted on beds and a vegetative cover maintained between the trees. Regular applications of fertilizer and lime are needed. The soil is well suited to pasture. Pangolagrass, improved bahiagrass, and white clover grow well when they are well managed. Water control measures are needed to remove excess surface water after heavy rains. Regular applications of fertilizer and lime are needed. Controlling grazing helps to prevent overgrazing and weakening of the plants. The soil has moderately high potential productivity for South Florida slash pine. This soil has high potential for desirable range plant production. The dominant forage consists of blue maidencane, chalky bluestem, and bluejoint panicum. Management practices should include deferred grazing. This Pompano soil is in the Slough range site. The soil has severe limitations for urban and recreational uses because of the high water table. This Pompano soil is in capability subclass IVw.

Myakka fine sand - This is a nearly level, poorly drained soil on broad flatwoods areas. Slopes are smooth to slightly concave and range from 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 3 inches thick. The subsurface layer is fine sand about 23 inches thick. In the upper 3 inches it is gray, and in the lower 20 inches it is light gray. The subsoil is fine sand to a depth of 80 inches or more. The upper 4 inches is black and firm, the next five inches is dark reddish brown and friable, the next 17 inches is mixed black and dark reddish brown and friable. Included with this soil in mapping are EauGallie, Immokalee, Oldsmar, Smyrna, and Wabasso soils. Also included are small areas of similar soils with subsoils low in organic matter content and less than 12 inches thick. Included soils make up 10 to 15 percent of any mapped area. In most years, under natural conditions, the water table is within 10 inches of the surface for 1 to 3 months and 10 to 40 inches below the surface for 2 to 6 months. It is more than 40 inches below the surface during extended dry periods. The available water capacity is medium in the subsoil and very low in the surface and subsurface layers. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of saw palmetto, fetterbush, pineland threeawn, and South Florida slash pine.

Boca fine sand - This is a nearly level, poorly drained soil on flatwoods. Slopes are smooth and range from 0 to 2 percent. Typically, the surface layer is gray fine sand about 3 inches thick. The subsurface layer is fine sand about 22 inches thick. The upper 11 inches is light gray and the lower 11 inches is very pale brown. The subsoil, about 5 inches thick, is gray fine sandy loam with brownish yellow mottles and calcareous nodules. At a depth of 30 inches is a layer of fractured limestone. Included with this soil in mapping are small areas of Hallandale, Wabasso, and Felda that have a yellowish horizon between the subsurface layer and subsoil. Also included are soils with limestone at a depth of 40 to 72 inches and small areas where the soil is better drained than is typical. Included soils make about 15 percent of any mapped area. In most years, under natural conditions, the water table is within 10 inches of the surface for 2 to 4 months. It recedes below the limestone for about 6 months. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility is low. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural vegetation consists of saw palmetto, pineland threeawn, South Florida slash pine, and wax myrtle.

Daytona sand - This is a nearly level to gently sloping, moderately well drained soil on low ridges on the flatwoods. Slopes are smooth to convex and are 0 to 5 percent. Typically, the surface layer is dark gray sand about 4 inches thick. The subsurface layers are light gray and white sand about 39 inches thick. The subsoil is sand to a depth of 80 inches or more. The upper 7 inches is mixed black and dark reddish

brown, and the lower 30 inches is dark brown. Included with this soil in mapping are small areas of Immokalee, Myakka, Orsina, and Pompano soils. Also included are similar soils with a combined surface and subsurface layer that is more than 51 inches thick. All included soils except the Orsina soils are in lower positions on the landscape. Included soils make up less than 15 percent of any mapped area. In most years, under natural conditions, the water table is at a depth of 24 to 40 inches for about 1 to 4 months. It is at a depth of 40 to 60 inches for 8 months. The available water capacity is very low, except in the subsoil where it is medium. Natural fertility is low. Permeability is very rapid in the surface layer and moderately rapid in the subsoil. The natural vegetation consists of oak, saw palmetto, South Florida slash pine, and gallberry.

Pineda sand - This is a nearly level, poorly drained soil on sloughs. Slopes are smooth to slightly concave and range from 0 to 1 percent. Typically, the surface layer is black fine sand about 1 inch thick. The subsurface layer is very pale brown fine sand about 4 inches thick. The upper part of the subsoil is brownish yellow fine sand about 8 inches thick. The next 10 inches is strong brown fine sand. The next 6 inches is yellowish brown fine sand. The next 7 inches is light gray fine sand with brownish yellow mottles. The lower part of the subsoil is light brownish gray fine sandy loam with light gray sandy intrusions about 18 inches thick. The substratum is light gray fine sand to a depth of 80 inches or more. Included with this soil in mapping are small areas of Wabasso, Valkaria, Felda, Hallandale, Boca, and Malabar soils. Also included are small areas of Pineda soils that are in higher positions on the landscape. Small areas of Pineda, depressional, soils are included. Some areas of this soil are underlain by limestone or shell fragments at a depth of 60 inches or more. In a few places, a thin layer of very friable calcareous material is at a depth of 10 to 30 inches, and other places a thin dark brown or black layer occurs at the base of the subsurface layer. Included soils make up about 10 to 15 percent of any mapped area. In most years, under natural conditions, the water table is within 10 inches of the surface for 2 to 4 months. It is 10 to 40 inches below the surface during extended dry periods. During periods of high rainfall, the soil is covered by a shallow layer of slowly moving water for periods of about 7 to 30 days or more. The available water capacity is very low in the surface and subsurface layers and in the upper, sandy part of the subsoil and medium in the lower loamy part of the subsoil. Natural fertility is low. Permeability is rapid in the surface layers and in the upper, sandy part of the subsoil and slow or very slow in the lower, loamy part of the subsoil. Natural vegetation consists of pineland threeawn, panicum, sedge, maidencane, waxmyrtle, South Florida slash pine, and scattered clumps of saw palmetto.

Immokalee sand - Immokalee sand is a nearly level, poorly drained soil in flatwoods areas. Slopes are smooth to convex and range from 0 to 2 percent. Typically, the surface layer is black sand about 4 inches thick. The subsurface layer is dark gray sand in the upper 5 inches and light gray in the lower 27 inches. The subsoil is sand to a depth of 69 inches. The upper 14 inches is black and firm, the next 5 inches is dark reddish, brown, and the lower 14 inches is dark yellowish brown. The substratum is very pale brown sand to a depth of 80 inches or more. Included with this soil in mapping are Eau Gallie, Myakka, Oldsmar, Smyrna, and Wabasso soils. Also included are small areas of soils with a subsoil that is low in organic matter content and less than 12 inches thick. Included soils make up less than 15 percent of any mapped area. In most years, under natural conditions, the water table is within 10 inches of the surface for 1 to 3 months and 10 to 40 inches below the surface for 2 to 6 months. It recedes to a depth of more than 40 inches during extended dry periods. The available water capacity is medium in the subsoil and very low in the surface and subsurface layers. Natural fertility is low. Permeability is rapid in the surface

and subsurface layers and moderate to moderately rapid in the subsoil. Natural vegetation consists of saw palmetto, fetterbush, pineland threeawn, and South Florida slash pine.

Cocoa fine sand - This is a nearly level to gently sloping, moderately well drain soil on ridges. Slopes are smooth to slightly convex and range from 0 to 2 percent. Typically, the surface layer is brown fine sand about 3 inches thick. The subsurface layer is reddish yellow fine sand about 10 inches thick. The next layer is yellowish red fine sand about 4 inches thick. The next 10 inches is reddish yellow fine sand, and below this is 4 inches of strong brown fine sand. Fractured limestone bedrock is at a depth of 31 inches. Included with this soil in mapping are small areas of Boca and Hallandale soils and soils that are similar to Cocoa soils but that have a loamy subsoil below a depth of 40 inches. Also included are small areas of soils that are similar but that have a loamy subsoil below a depth of 40 inches and sandy soils that do not have a clay increase and have limestone at a depth of 10 to 40 inches. Included soils make up about 15 percent of any mapped area. In most years, under natural conditions, the water table is within 24 inches of the surface for 1 to 2 months and 24 to 40 inches below the surface during extended dry periods. The available water capacity is low. Natural fertility is low. Permeability is rapid. Natural vegetation consists of bluejack oak, South Florida slash pine, saw palmetto, bluestem, and pineland threeawn.

Hallandale-Urban land complex - This map unit consists of nearly level Hallandale fine sand and Urban land. The areas of Hallandale soil and Urban land are so intermingled that they cannot be separated at the scale used for mapping. About 50 to 70 percent of each mapped area consists of nearly level Hallandale soils or Hallandale soils that have been reworked or reshaped but which are still recognizable as Hallandale soils. Areas of these soils that have been modified by grading and shaping are not as extensive in the older communities as in the newer ones. Typically, Hallandale soils have a surface layer of dark gray fine sand about 2 inches thick. The subsurface layer is light gray fine sand about 9 inches thick. Hard, fractured limestone is at a depth of 11 inches. About 15 to 50 percent of each mapped area is Urban land that is used for houses, streets, driveways, buildings, parking lots, and other related uses. Most areas have drainage ditches that alter the depth to the seasonal high water table. In undrained areas, the water table is within 10 inches of the surface for 2 to 4 months in most years. It recedes below the limestone during the dry season. Unoccupied areas are mostly areas of Hallandale soils in lawns, vacant lots, or playgrounds. Boca, Felda, Malabar, and Pineda soils make up as much as 15 percent of the land not covered by urban facilities. Present land use precludes using this soil for cultivated crops, citrus, woodland, or improved pasture. This complex has not been assigned to a capability subclass.

Lovers Key State Park

Canaveral fine sand - This is a nearly level, moderately well drained and somewhat poorly drained soil on low ridges. Slopes are smooth to slightly convex and range from 0 to 2 percent. Typically, the surface layer is black and dark gray fine sand mixed with shell fragments and is about 15 inches thick. The underlying layers are light brownish gray and light gray fine sand mixed with shell fragments to a depth of 80 inches or more. Included with this soil are small areas of Captiva and Kesson soils. Included soils generally make up less than 10 percent of any mapped areas. In most years, under natural conditions, this soil has a water table depth of 18 to 40 inches for 2 to 6 months. The water table recedes to a depth of more than 40 inches during February through July. The available water capacity is very low. Natural

fertility is low. Permeability is very rapid. Natural vegetation consists of cabbage palm, seagrape, wild coffee, an understory of vines and weeds.

Beaches - Beaches consist of narrow strips of nearly level, mixed sand and shell fragments along the Gulf of Mexico. These areas are covered with saltwater at daily high tides. The areas are subject to movement by the wind and tide and are bare of vegetation in most places. The only vegetation is salt-tolerant plants. Beaches are geographically associated with Canaveral soils. Beaches are used intensively for recreation during the entire year. Homes, condominiums, beach cottages, and motels have been built on the fringes of beaches in many places.

Wulfert Muck - This is a nearly level, very poorly drained soil in broad tidal swamps. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is muck that is dark reddish brown to a depth of 12 inches and dark brown to a depth of 36 inches. Beneath the muck is gray fine sand with light gray streaks and about 10 percent shell fragments. Included with this soil in mapping, and making up about 15 percent of the mapping unit, are small areas of Kesson soils and soils similar to Wulfert soils, but with limestone at a depth of 20 to 40 inches. The water table fluctuates with the tide. Areas are subject to tidal flooding. The available water capacity is high in the organic horizons and low in the horizons below. Natural fertility is medium. Permeability is rapid. Natural vegetation consists of American mangrove (red mangrove), black mangrove, and needlegrass.

Kesson fine sand - This is a nearly level, very poorly drained soil in broad tidal swamps. Areas are subject to tidal flooding. Slopes are smooth and range from 0 to 1 percent. Typically, the surface layer is about 6 inches of sand that contains shell fragments. The underlying layers are fine sand that contain shell fragments, and they extend to a depth of 80 inches or more. The upper 4 inches is pale brown, the next 3 inches is light brown, the next 25 inches is light gray with dark gray streaks, and the lower 42 inches is white. Included with this soil in mapping are areas of Captiva and Wulfert soils and soils that have organic surface layers. Also included are soils that have loamy material throughout. Included soils make up about 10 to 15 percent of any mapped area. The water table fluctuates with the tide. The available water capacity is low. Natural fertility is low. Permeability is moderately rapid or rapid. Natural vegetation consists of black mangrove, batis, oxeye daisy, and American mangrove (red mangrove).

St. Augustine sand - This is a nearly level, somewhat poorly drained soil that was formed by earthmoving operations. Most areas are former sloughs or depressions or other low areas that have been filled with sandy material. Slopes are smooth to slightly convex and range from 0 to 2 percent. This soil has no definite horizonation because of mixing during reworking of the fill material. Typically, the upper 30 inches consists of mixed very dark grayish brown, very dark gray, dark gray and gray sand with a few lenses of silt loam; it is about 20 percent multicolored shell fragments less than 3 inches in diameter. Below this, to a depth of 80 inches or more, there is undisturbed fine sand. The upper 10 inches is dark grayish brown with about 15 percent multicolored shell fragments. The lower 40 inches is light gray with about 15 percent multicolored shell fragments. Included with this soil are areas where the fill material is underlain by organic soils and other areas where the fill material is less than 20 inches thick. Also included are areas that contain lenses or pockets of organic material throughout the fill. In addition, there are small scattered areas where the fill material is more than 35 percent shells or shell fragments. The depth to the water table varies with the amount of fill material and the extent of artificial drainage. However, in most years, the water table is 24 to 36 inches below the surface of the fill material for 2 to 4 months. It is below a depth of 60 inches during extended dry periods.

The available water capacity is low. Permeability is estimated to be rapid. Natural fertility is low. Most of the vegetation has been removed. The present vegetation consists of cabbage palm and various scattered weeds.

Delnor-Wiggins Pass State Park

Mangrove swamp - This land type occurs along the western and southwestern coast and on most of the Ten Thousand Islands. It occupies low-lying areas always covered by salt water during high tide and in some places covered even at low tide. The layers vary in color, texture, composition, and thickness. The surface layer is usually brown peat, composed of partly decayed leaves, limbs, and roots from dead mangrove trees and remains from a few other salt-tolerant plants. The peat is a few inches to several feet deep. It is underlain by light-gray or gray fine sands or marl. In places the very shallow peat layer is underlain by moderately hard limestone. The natural vegetation consists mainly of different varieties of mangrove, buttonwood, saltwort, glasswort, and a few grasses. The red mangroves occur on the outer zone of the mangrove swamps and are characterized by their many arching prop roots. These roots collect soil materials and aid materially in building the coasts farther into shallow waters, in forming islands, and in protecting the shores from storm. The soils in the red mangrove areas are nearly always flooded, even at low tides. The black and white mangroves grow on the inshore mud flats that are usually exposed during low tide and covered by water at high tide. All of this land is covered with natural vegetation and serves as feeding and breeding ground for many birds and animals. The streams, bays, and lagoons within and adjacent to the mangrove swamps contain many fish, clams, crabs, and oysters.

Collier-Seminole State Park

Holopaw fine sand, limestone substratum - This nearly level, poorly drained soil is in sloughs and broad, poorly defined drainageways. Individual areas are elongated and irregular in shape, and they range from 20 to 300 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is dark gray fine sand about 5 inches thick. The subsurface layer is fine sand to a depth of about 57 inches. The upper part of the subsurface layer is white, and the lower part is light gray and dark grayish brown. The subsoil extends to a depth of about 62 inches. It is dark grayish brown fine sandy loam. Limestone bedrock is at a depth of about 62 inches. In 95 percent of the areas mapped as Holopaw fine sand, limestone substratum, Holopaw and similar soils make up 78 to 97 percent of the map unit. In the remaining areas, the Holopaw soil makes up either a higher or lower percentage of the mapped areas. The characteristics of Malabar, Pineda, and Riviera soils that have a limestone substratum are similar to those of the Holopaw soil. The dissimilar soils in this map unit are small areas of Basinger, Boca, and Chobee soils in landscape positions similar to those of the Holopaw soil. These soils make up about 3 to 22 percent of the unit. The permeability of this soil is moderate to moderately slow. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of scattered areas of South Florida slash pine, cypress, cabbage palm, saw palmetto, waxmyrtle, sand cordgrass, chalky bluestem, and gulf muhly.

Immokalee fine sand - This nearly level, poorly drained soil is on flatwoods. Individual areas are elongated and irregular in shape, and they range from 10 to 500 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is black fine sand about 6 inches thick. The subsurface layer is light gray fine sand to a

depth of about 35 inches. The subsoil is fine sand to a depth of about 58 inches. The upper part of the subsoil is black, the next part is dark reddish brown, and the lower part is dark brown. The substratum is pale brown fine sand to a depth of about 80 inches. In 95 percent of the areas mapped as Immokalee fine sand, Immokalee and similar soils make up 89 to 99 percent of the map unit. In the remaining areas, the Immokalee soil makes up either a higher or lower percentage of the mapped areas. The characteristics of Myakka and Oldsmar soils are similar to those of the Immokalee soil. The dissimilar soils in this map unit are small areas of Basinger and Holopaw soils in sloughs. These soils make up about 1 to 11 percent of the unit. The permeability of this soil is moderate. The available water capacity is low. Under natural conditions, the seasonal high water table is at a depth of 6 to 18 inches for 1 to 6 months during most years. During the other months, the water table is below a depth of 18 inches, and it recedes to a depth of more than 40 inches during extended dry periods. The natural vegetation consists of South Florida slash pine, saw palmetto, waxmyrtle, chalky bluestem, creeping bluestem, and pineland threeawn.

Oldsmar fine sand, limestone substratum - This nearly level, poorly drained soil is on flatwoods. Individual areas are elongated and irregular in shape, and they range from 10 to 300 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is dark grayish brown fine sand about 4 inches thick. The subsurface layer is fine sand to a depth of about 35 inches. The upper part of the subsurface layer is light gray, and the lower part is light brownish gray. The subsoil extends to a depth of about 60 inches. The upper part of the subsoil is black fine sand, the next part is very dark grayish brown fine sand, and the lower part is dark grayish brown fine sandy loam. Limestone bedrock is at a depth of about 60 inches. In 95 percent of the areas mapped as Oldsmar fine sand, limestone substratum, Oldsmar and similar soils make up 85 to 98 percent of the map unit. In the remaining areas, the Oldsmar soil makes up either a higher or lower percentage of the mapped areas. The characteristics of Immokalee and Wabasso soils are similar to those of the Oldsmar soil. The dissimilar soils in this map unit are small areas of Malabar, Pineda, and Riviera soils in sloughs. These soils make up about 0 to 15 percent of the map unit. The permeability of this soil is slow. The available water capacity is low. Under natural conditions, the seasonal high water table is between a depth of 6 to 18 inches for 1 to 6 months during most years. During the other months, the water table is below a depth of 18 inches, and it recedes to a depth of more than 40 inches during extended dry periods. The natural vegetation consists mostly of cabbage palm, South Florida slash pine, saw palmetto, waxmyrtle, and chalky bluestem.

Basinger fine sand - This nearly level, poorly drained soil is in sloughs and poorly defined drainageways. Individual areas are elongated and irregular in shape, and they range from 20 to 800 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is grayish brown fine sand about 3 inches thick. The subsurface layer is light gray fine sand to a depth of about 25 inches. The subsoil is brown fine sand to a depth of about 44 inches. The substratum is brown fine sand to a depth of about 80 inches. In 95 percent of the areas mapped as Basinger fine sand, Basinger and similar soils make up 83 to 98 percent of the map unit. In the remaining areas, the Basinger soil makes up either a higher or lower percentage of the mapped areas. The characteristics of Malabar soils are similar to those of the Basinger soil. The dissimilar soils in this map unit are small areas of Immokalee soils on the flatwoods. These soils make up 17 percent or less of the map unit. The permeability of this soil is rapid. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of scattered areas of South

Florida slash pine, cypress, cabbage palm, saw palmetto, waxmyrtle, blue maidencane, sand cordgrass, pineland threeawn, chalky bluestem, and St. Johnswort.

Ft. Drum and Malabar, high, fine sands - These nearly level, poorly drained soils are on ridges along sloughs. Individual areas are elongated and irregular in shape, and they range from 10 to 200 acres in size. The slope is 0 to 2 percent. Typically, the Ft. Drum soil has a surface layer of very dark grayish brown fine sand about 5 inches thick. The subsoil is fine sand to a depth of about 20 inches. The upper part of the subsoil is light brownish gray, and lower part is light gray. The substratum is fine sand to a depth of about 80 inches. The upper part of the substratum is brownish yellow, the next part is white, and the lower part is brown. Typically, the Malabar, high, soil has a surface layer of dark gray fine sand about 2 inches thick. The subsurface layer is light brownish gray fine sand to a depth of about 15 inches. The subsoil extends to a depth of about 72 inches. The upper part of the subsoil is brownish yellow and yellow fine sand, the next part is very pale brown and light gray fine sand, and the lower part is grayish brown, mottled sandy clay loam. The substratum is light gray fine sand to a depth of about 80 inches. Mapped areas consist entirely of the Ft. Drum soil, entirely of the Malabar soil, or any combination of the two soils. The two soils were not separated in mapping because of similar management needs and soil characteristics. The dissimilar soils in this map unit are small areas of Basinger, Holopaw, and Pineda soils in sloughs. These soils make up about 0 to 18 percent of the unit. The permeability in the Ft. Drum soil is rapid. The permeability in the Malabar soil is slow or very slow. The available water capacity of both soils is low. Under natural conditions, the seasonal high water table is within a depth of 6 to 18 inches for 1 to 6 months during most years. During the other months, the water table is below a depth of 18 inches, and it recedes to a depth of further than 40 inches during extended dry periods. The natural vegetation consists mostly of South Florida slash pine, saw palmetto, live oak, cabbage palm, waxmyrtle, chalky bluestem, creeping bluestem, low panicum, and pineland threeawn.

Holopaw and Okeelanta soils, depressional - These level, very poorly drained soils are in depressions and marshes. Individual areas are circular or elongated in shape, and they range from 5 to 200 acres in size. The slope is 0 to 1 percent. Typically, the Holopaw soil has a surface layer of dark gray fine sand about 5 inches thick. The subsurface layer is fine sand to a depth of about 52 inches. The upper part of the subsurface layer is light gray, and the lower part is light brownish gray. The subsoil extends to a depth of about 62 inches. The upper part of the subsoil is dark grayish brown fine sand, and lower part is dark grayish brown fine sandy loam. The substratum is gray loamy fine sand to a depth of about 80 inches. Typically, the Okeelanta soil has surface soil of black and dark reddish brown muck about 20 inches thick. The substratum extends to a depth of about 80 inches. The upper part of the substratum is dark grayish brown fine sand, and the lower part is light brownish gray loamy fine sand. Mapped areas can consist entirely of the Holopaw soil, entirely of the Okeelanta soil, or any combination of the two soils. The two soils were not separated in mapping because of similar management needs resulting from the ponding. The characteristics of Riviera soils are similar to those of the major soils. The dissimilar soils in this map unit are small areas of Basinger and Gator soils in similar landscape positions. These soils make up about 10 percent or less of the unit. The permeability in the Holopaw soil is moderate to moderately slow, and the available water capacity is low. The permeability in the Okeelanta soil is slow or very slow, and the available water capacity is high. Under natural condition, These soils are ponded for 6 months or more each year. During the other months, the water table is within a depth of 12 inches, and it recedes to a depth of 12 to 40 inches during extended dry periods. These soils are used for natural wetlands. The

natural vegetation consists of St. Johnswort, maidencane, rushes, primrose willow, fireflags, pickerelweed, sawgrass, Florida willow, and a few cypress trees.

Boca, Riviera, limestone substratum, and Copeland fine sands, depressional - These level, very poorly drained soils are in depressions, cypress swamps, and marshes. Individual areas are elongated and irregular in shape, and they range from 100 to 3,000 acres in size. The slope is 0 to 1 percent. Typically, the Boca soil has a surface layer of very dark gray fine sand about 4 inches thick. The subsurface layer is fine sand to a depth of about 26 inches. The upper part of the subsurface layer is light gray, and lower part is brown. The subsoil is dark grayish brown fine sandy loam to a depth of about 30 inches. Limestone bedrock is at a depth of about 30 inches. Typically, the Riviera soil has a surface layer of gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 32 inches. The upper part of the subsurface layer is light brownish gray, and the lower part is light gray. The subsoil is sandy clay loam to a depth of about 54 inches. The upper part of the subsoil is grayish brown, and the lower part is dark gray. Limestone bedrock is at a depth of about 54 inches. Typically, the Copeland soil has a surface layer of black fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 18 inches. The upper part of the subsurface layer is very dark grayish brown, and the lower part is dark gray. The subsoil is light gray, mottled sandy clay loam to a depth of about 24 inches. The substratum is light gray marl to a depth of about 30 inches. Limestone bedrock is at a depth of about 30 inches. Mapped areas can consist entirely of the Boca soil, entirely of the Riviera soil, entirely of the Copeland soil, or any combination of the three soils. These three soils were not separated in mapping because of similar management needs resulting from the ponding. The characteristics of Holopaw, Malabar, and Pineda soils are similar to those of the major soils. The dissimilar soils in this map unit are small areas of Basinger, Dania, Gator, and Hallandale soils in similar landscape positions. These soils make up about 20 percent or less of the map unit. The permeability in the Boca soil is moderate, and the available water capacity is very low. The permeability in the Riviera soil is moderately rapid to moderately slow, and the available water capacity is low. The permeability in the Copeland soil is moderately slow, and the available water capacity is moderate. Under natural conditions, these soils are ponded for 6 months or more each year. During the other months, the water table is within a depth of 12 inches, and it recedes to a depth of 12 to 40 inches during extended dry periods. The natural vegetation consists that found in natural wetlands: baldcypress, pickerelweed, rushes, fireflag, sawgrass, and Florida willow.

Holopaw fine sand - This nearly level, poorly drained soil is in sloughs and poorly defined drainageways. Individual areas are elongated and irregular in shape, and they range from 10 to 400 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is dark gray fine sand about 5 inches thick. The subsurface layer is fine sand to a depth of about 52 inches. The upper part of the subsurface layer is light gray, and the lower part is light brownish gray. The subsoil extends to a depth of about 62 inches. The upper part of the subsoil is dark grayish brown fine sand, and the lower part is dark grayish brown fine sandy loam. The substratum is gray loamy fine sand to a depth of about 80 inches. In 90 percent of the areas mapped as Holopaw fine sand, Holopaw and similar soils make up 87 to 98 percent of the map unit. In the remaining areas, the Holopaw soil makes up either a higher or lower percentage of the mapped areas. The characteristics of Malabar, Pineda, and Riviera soils are similar to those of the Holopaw soil. The dissimilar soils in this map unit are small areas of Basinger and Oldsmar soils in landscape positions similar to those of the Holopaw soil. These soils make up about 13 percent or less of the unit. The permeability of this soil is moderate to moderately slow. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. During the

other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of scattered areas of slash pine, cypress, cabbage palm, saw palmetto, waxmyrtle, sand cordgrass, gulf muhly, panicums, chalky bluestem, plumgrass, gulf dune paspalum, and blue maidencane.

Durbin and Wulfert mucks, frequently flooded - These level, very poorly drained soils are in tidal mangrove swamps. Individual areas are elongated and irregular in shape, and they range from 50 to 1,000 acres in size. The slopes are 0 to 1 percent. Typically, the Durbin soil has a surface soil of dark reddish brown to black muck about 63 inches thick. The substratum is dark gray fine sand to a depth of about 80 inches. Typically, the Wulfert soil has a surface soil of dark reddish brown to black muck about 40 inches thick. The substratum is dark gray fine sand to a depth of about 80 inches. Mapped areas can consist entirely of the Durbin soil, entirely of the Wulfert soil, or any combination of the two soils. The two soils were not separated in mapping because of similar management needs resulting from the tidal flooding. The dissimilar soils in this map unit are small areas of Kesson and Pennsuco soils in similar landscape positions. These soils make up about 0 to 10 percent of the unit. The permeability in the Durbin soil is rapid, and the available water capacity is high. The permeability in the Wulfert soil is rapid, and the available water capacity is moderate. The water table fluctuates with the tide. It is within a depth of 12 inches for most of the year. The soil is subject to tidal flooding. The natural vegetation consists of red, white, and black mangroves.

Kesson muck, frequently flooded - This level, very poorly drained soil is in frequently flooded tidal marshes. Individual areas are elongated and irregular in shape, and they range from 300 to 1,000 acres in size. The slope is 0 to 1 percent. Typically, the surface layer is black muck about 5 inches thick. The subsurface layer is dark gray fine sand to a depth of about 10 inches. The substratum is fine sand to a depth of about 80 inches. The upper part of the substratum is gray, the next part is light brownish gray, and the lower part is pale brown. In 80 percent of the area mapped as Kesson muck, frequently flooded, the Kesson soil makes up 75 to 90 percent of the map unit. In the remaining areas, it makes up either a higher or lower percentage of the mapped areas. The dissimilar soils in this map unit are small areas of Basinger, Dania, and Peckish soils in landscape positions similar to those of the Kesson soil. These soils make up about 10 to 25 percent of the unit. The permeability of this soil is rapid to moderately rapid. The available water capacity is high. The water table fluctuates with tidal action and seasonal rainfall. It is at or near the surface for long periods. This soil is frequently flooded. The natural vegetation consists of cordgrass, saltgrass, rushes, needlegrass, saltwort, and scattered areas of mangroves.

Estero and Peckish soils, frequently flooded - These level, very poorly drained soils are in frequently flooded tidal marshes. Individual areas are elongated and irregular in shape, and they range from 300 to 1,000 acres in size. The slopes are 0 to 1 percent. Typically, the Estero soil has a surface layer of black muck about 6 inches thick. The subsurface layer is fine sand to a depth of about 40 inches. The upper part of the subsurface layer is black, and lower part is dark grayish brown. The subsoil is dark brown and very dark brown fine sand to a depth of about 62 inches. Typically, the Peckish soil has a surface layer of very dark grayish brown mucky fine sand about 9 inches thick. The subsurface layer is grayish brown fine sand to a depth of about 37 inches. The subsoil is dark brown fine sand to a depth of about 42 inches. The substratum is light brownish gray fine sand to a depth of about 80 inches. Mapped areas can consist entirely of the Estero soil, entirely of the Peckish soil, or any combination of the two soils. The two soils were not separated in mapping because of similar management needs resulting from the flooding. The

dissimilar soils in this map unit are small areas of Wulfert soils in similar landscape positions. These soils make up about 0 to 5 percent of the unit. The permeability in the Estero soil is moderately rapid, and the available water capacity is moderate. The permeability in the Peckish soil is rapid, and the available water capacity is moderate. The water table fluctuates with tidal action and seasonal rainfall. It is at or near the surface for long periods. These soils are frequently flooded. The natural vegetation consists of cordgrass, saltgrass, rushes, needlegrass, saltwort, and scattered mangrove.

Fakahatchee Strand Preserve State Park

Riviera, limestone substratum-Copeland fine sands - These nearly level, poorly drained soils are in sloughs and cypress swamps. Individual areas are elongated and irregular in shape, and they range from 40 to 400 acres in size. The slope is 0 to 2 percent. Typically, the Copeland soil has a surface layer of black fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 18 inches. Limestone bedrock is at a depth of about 30 inches. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soils are covered by shallow, slowly moving water for about 7 days. These soils are presently used for natural wetlands. The natural vegetation consists of cypress, red maple, ferns, and other wetland plants.

Hallandale fine sand - This nearly level, poorly drained soil is on flatwoods. Individual areas are elongated and irregular in shape, and they range from 20 to 1,000 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 3 inches thick. The subsurface layer is grayish brown fine sand to a depth of about 9 inches. The subsoil is yellowish brown fine sand to a depth of about 12 inches. Limestone bedrock is at a depth of about 12 inches. Under natural conditions, the seasonal high water table is between a depth of 6 to 18 inches for 1 to 6 months during most years. During the other months, the water table is below a depth of 18 inches, and it recedes to a depth of more than 40 inches during extended dry periods. The natural vegetation consists of South Florida slash pine, saw palmetto, creeping bluestem, chalky bluestem, and pineland threeawn.

Riviera fine sand, limestone substratum - This nearly level, poorly drained soil is in sloughs and broad, poorly defined drainageways. Individual areas are elongated and irregular in shape, and they range from 25 to 500 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 32 inches. The subsoil is sandy clay loam to a depth of about 54 inches. Limestone bedrock is at a depth of about 54 inches. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of scattered areas of South Florida slash pine, cypress, cabbage palm, waxmyrtle, sand cordgrass, gulf muhly, blue maidencane, South Florida bluestem, and chalky bluestem.

Ft. Drum and Malabar, high, fine sands - These nearly level, poorly drained soils are on ridges along sloughs. Individual areas are elongated and irregular in shape, and they range from 10 to 200 acres in size. The slope is 0 to 2 percent. Typically, the Ft. Drum soil has a surface layer of very dark grayish brown fine sand about 5 inches thick. The subsoil is fine sand to a depth of about 20 inches. The substratum is fine sand to a depth of about 80 inches. Typically, the Malabar, high, soil has a surface

layer of dark gray fine sand about 2 inches thick. The subsurface layer is light brownish gray fine sand to a depth of about 15 inches. The subsoil extends to a depth of about 72 inches. The substratum is light gray fine sand to a depth of about 80 inches. Under natural conditions, the seasonal high water table is at a depth of 6 to 18 inches for 1 to 6 months during most years. During the other months, the water table is below a depth of 18 inches, and it recedes to a depth of more than 40 inches during extended dry periods. The natural vegetation consists mostly of South Florida slash pine, saw palmetto, live oak, cabbage palm, waxmyrtle, chalky bluestem, creeping bluestem, low panicum, and pineland threeawn.

Boca, Riviera, limestone substratum, and Copeland fine sands, depressional - These level, very poorly drained soils are in depressions, cypress swamps, and marshes. Individual areas are elongated and irregular in shape, and they range from 100 to 3,000 acres in size. The slope is 0 to 1 percent. Typically, the Boca soil has a surface layer of very dark gray fine sand about 4 inches thick. The subsurface layer is fine sand to a depth of about 26 inches. The subsoil is dark grayish brown fine sandy loam to a depth of about 30 inches. Limestone bedrock is at a depth of about 30 inches. The Riviera soil has a surface layer of gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 32 inches. The subsoil is sandy clay loam to a depth of about 54 inches. Limestone bedrock is at a depth of about 54 inches. Under natural conditions, these soils are ponded for 6 months or more each year. During the other months, the water table is within a depth of 12 inches, and it recedes to a depth of 12 to 40 inches during extended dry periods. They are used for natural wetlands. The natural vegetation consists mostly of baldcypress, pickerelweed, rushes, fireflag, sawgrass, and Florida willow.

Hilolo, Jupiter, and Margate fine sands - These nearly level, poorly drained soils are on hammocks and flatwoods. Individual areas are elongated and irregular in shape, and they range from 5 to 600 acres in size. The slope is 0 to 2 percent. Typically, the Hilolo soil has a surface layer of very dark grayish brown fine sand about 9 inches thick. The subsurface layer is dark grayish brown fine sand to a depth of about 12 inches. The subsoil extends to a depth of about 50 inches. The substratum is light olive gray loam fine sand to a depth of about 61 inches. Limestone bedrock is at a depth of about 61 inches. The Jupiter soil has a surface layer of black fine sand about 4 inches thick. The subsurface layer is very dark grayish brown fine sand to a depth of about 10 inches. Limestone bedrock is at a depth of about 10 inches. The Margate soil has a surface layer of black fine sand about 6 inches thick. The subsurface layer is light brownish gray fine sand to a depth of about 17 inches. The subsoil is brown fine sand to a depth of about 35 inches. Limestone bedrock is at a depth of about 35 inches. Under natural conditions, the seasonal high water table is at a depth of 6 to 18 inches for 1 to 6 months during most years. During the other months, the water table is below a depth of 18 inches, and it recedes to a depth of more than 40 inches during extended dry periods. The natural vegetation consists mostly of cabbage palm, saw palmetto, chalky bluestem, broomsedge bluestem, scattered areas of water oaks, and pineland threeawn.

Urban land-Holopaw-Basinger complex - these areas of Urban land and nearly level, poorly drained soils are in urban areas. Individual areas are blocky to irregular in shape, and they range from 20 to 500 acres in size. Typically, the Holopaw soil has a surface layer of dark gray fine sand about 5 inches thick. The subsurface layer is fine sand to a depth of about 52 inches. The subsoil extends to a depth of about 62 inches. The substratum is gray loamy fine sand to a depth of about 80 inches. The Basinger soil has a surface layer of grayish brown fine sand about 3 inches thick. The subsurface layer is light gray fine sand to a depth of about 25 inches. The subsoil is brown fine sand to a depth of about 44 inches. The substratum is brown fine sand to a depth of about 80 inches. Under natural conditions, the seasonal

high water table is within a depth of 12 inches for 3 to 6 months during most years. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. Urban land consists of commercial buildings, houses, parking lots, streets, sidewalks, recreational areas, shopping centers, and other urban structures where the soil cannot be observed.

Urban land-Aquents complex, organic substratum - This map unit consists of Urban land and soil materials that have been dug from different areas in the county and have been spread over the muck soils for coastal urban development. The depth of fill material used in the construction of urban areas ranges from 30 to more than 80 inches.

Urban land-Matlacha-Boca complexes - These areas of Urban land and nearly level, somewhat poorly drained and poorly drained soils are in urban areas and rock quarries. The slope is 0 to 2 percent. Typically, the Matlacha soil has a surface soil of dark brown and light brownish gray gravelly fine sand about 21 inches thick. The next layer is fine sand to a depth of about 51 inches. The subsoil is pale brown fine sandy loam to a depth of about 54 inches. Limestone bedrock is at a depth of about 54 inches. The Boca soil has a surface layer of very dark gray fine sand about 4 inches thick. The subsurface layer is fine sand to a depth of about 26 inches. The subsoil is dark grayish brown fine sandy loam to a depth of about 30 inches. Limestone bedrock is at a depth of about 30 inches. The depth to the water table varies depending upon the amount of fill material and the extent of artificial drainage.

Durbin and Wulfert mucks, frequently flooded - These level, very poorly drained soils are in tidal mangrove swamps. Individual areas are elongated and irregular in shape, and they range from 50 to 1,000 acres in size. The slopes are 0 to 1 percent. Typically, the Durbin soil has a surface soil of dark reddish brown to black muck about 63 inches thick. The substratum is dark gray fine sand to a depth of about 80 inches. The Wulfert soil has a surface soil of dark reddish brown to black muck about 40 inches thick. The substratum is dark gray fine sand to a depth of about 80 inches. The water table fluctuates with the tide. It is within a depth of 12 inches for most of the year. The soil is subject to tidal flooding. The natural vegetation consists of red, white, and black mangrove.

Pennsuco silt loam - This level, poorly drained soil is on low prairies. Typically the surface layer is very dark gray silt loam about 5 inches thick. The subsoil is dark gray silt loam to a depth of about 40 inches. The substratum is grayish brown fine sand to a depth of about 48 inches. Limestone bedrock is at a depth of about 48 inches. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 4 to 6 months during most years. A few inches of water is above the surface during extremely wet periods. The natural vegetation consists of sawgrass, reeds, scattered areas of cypress, maidencane, needlegrass, sedges, waxmyrtle, and other wetland plants.

Hallandale and Boca fine sands - These nearly level, poorly drained soils are in sloughs and poorly defined drainageways. The slope is 0 to 2 percent. Typically, the Hallandale soil has a surface layer of very dark gray fine sand about 3 inches thick. The subsurface layer is grayish brown fine sand to a depth of about 9 inches. The subsoil is yellowish brown fine sand to a depth of about 12 inches. Limestone bedrock is at a depth of about 12 inches. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended

dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of scrub cypress, sand cordgrass, waxmyrtle, and maidencane.

Ochopee fine sandy loam, low - This level, poorly drained soil is on low prairies. Individual areas are elongated and irregular in shape, and they range from 20 to 400 acres in size. The slope is 0 to 1 percent. Typically, the surface layer is very dark gray fine sandy loam about 5 inches thick. The subsoil is dark gray fine sandy loam to a depth of about 17 inches. Limestone bedrock is at a depth of about 17 inches. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. During the other months, the water table is below a depth of 12 inches. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of scrub cypress, cordgrass rushes, sedges, and South Florida bluestem.

Ochopee fine sandy loam - This nearly level, poorly drained soil is in low wetland hardwood areas. Individual areas are elongated and irregular in shape, and they range from 20 to 400 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sandy loam about 5 inches thick. The subsoil is dark gray fine sandy loam to a depth of about 17 inches. Limestone bedrock is at a depth of about 17 inches. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of scrub cypress, waxmyrtle, Ryncoapusa, South Florida bluestem, and sedges.

Kesson muck, frequently flooded - This level, very poorly drained soil is in frequently flooded tidal marshes. Individual areas are elongated and irregular in shape, and they range from 300 to 1,000 acres in size. The slope is 0 to 1 percent. Typically, the surface layer is black muck about 5 inches thick. The subsurface layer is dark gray fine sand to a depth of about 10 inches. The substratum is fine sand to a depth of about 80 inches. The water table fluctuates with tidal action and seasonal rainfall. It is at or near the surface for long periods. This soil is frequently flooded. It is used for natural wetlands. The natural vegetation consists of cordgrass, saltgrass, rushes, needlegrass, saltwort, and scattered areas of mangroves.

Estero and Peckish soils, frequently flooded - These level, very poorly drained soils are in frequently flooded tidal marshes. Individual areas are elongated and irregular in shape, and they range from 300 to 1,000 acres in size. The slope is 0 to 1 percent. Typically, the Estero soil has a surface layer of black muck about 6 inches thick. The subsurface layer is fine sand to a depth of about 40 inches. The subsoil is dark brown and very dark brown fine sand to a depth of about 62 inches. The Peckish soil has a surface layer of very dark grayish brown mucky fine sand about 9 inches thick. The subsurface layer is grayish brown fine sand to a depth of about 37 inches. The subsoil is dark brown fine sand to a depth of about 42 inches. The substratum is light brownish gray fine sand to a depth of about 80 inches. The water table fluctuates with tidal action and seasonal rainfall. It is at or near the surface for long periods. These soils are frequently flooded, and are used for natural wetlands. The natural vegetation consists of cordgrass, saltgrass, rushes, needlegrass, saltwort, and scattered mangrove.

Jupiter-Boca complex - These nearly level, very poorly drained and poorly drained soils are in sloughs and low wetland hardwood areas. Individual areas are elongated and irregular in shape, and they range from 30 to 400 acres in size. The slope is 0 to 2 percent. Under natural conditions, the seasonal high

water table is within a depth of 12 inches for 4 to 8 months during most years. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 30 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow, slowly moving water for about 7 days. The natural vegetation consists of laurel oak, red maple, scrub cypress, cabbage palm, saw palmetto, waxmyrtle, pondapple, vines, panicum, ferns, plumegrass, Rhyncosporia (rush), South Florida bluestem, and gulf dune paspalum.

Basinger fine sand, occasionally flooded - This nearly level, poorly drained soil is on occasionally flooded low ridges that are surrounded by tidal marshes. Individual areas are elongated and irregular in shape, and they range from 5 to 40 acres in size. The slope is 0 to 2 percent. Typically, the surface layer is grayish brown fine sand about 3 inches thick. The subsurface layer is light gray fine sand to a depth of about 25 inches. The subsoil is brown fine sand to a depth of about 44 inches. The substratum is brown fine sand to a depth of about 80 inches. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months. During the other months, the water table is below a depth of 12 inches, and it recedes to a depth of more than 40 inches during extended dry periods. During periods of storm tides, the soil is briefly flooded. The natural vegetation consists of sabal palm, gumbo limbo, strangler fig, oaks, orchids, and other wetland plants.