

Collier County, Florida  
Nontechnical Soil Descriptions



Nontechnical soil descriptions describe soil properties or management considerations specific to a soil map unit or group of map units. These descriptions are written in terminology that nontechnical users of soil survey information can understand and are used to create reports. By linking the description to the soil survey map units these reports can be generated by conservation planners and other NRCS employees for distribution to land users. These descriptions are available through both Toolkit and NASIS.

In this subsection nontechnical descriptions are available through four categories they are Agronomic, ecological community, urban, and Water Quality. Separate map unit to description links are provided for each category.

**AGRONOMIC**

The following agronomic categories are available and linked through the Land Capability Unit (LCU) that is listed below.

Category

- aSOI - Soil Characteristics
- bSAC - Soil Agronomic Characteristics
- cH2O - Seasonal High Water Table
- dCUL - Cultivation Limitations
- eERO - Erosion Control
- fIRR - Irrigation Needs
- gCIT - Citrus Production
- hPAS - Pasture and Hayland
- iWMG - Water Table Management

Map <u>Symbol</u>	Non hydric <u>LCU</u>	Hydric <u>LCU</u>	Drained <u>LCU</u>	Undrained <u>LCU</u>
2	4w3	4w22		
3	4w3	4w22		
4				7w3
6				7w3
		3w26		
7	4w2			
8	4w2			
10	4w3	4w22		

<u>Map Symbol</u>	<u>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
11	4w6			
14	3w2	3w21		
15	6s8			
16	4w3	4w22		
17	4w2	4w21		
18	3w6	3w21		
20	4w3	4w22		
21	3w6	3w25		
22				7w3
23				7w1
25				7w3
27	4w3	4w22		
28	3w2	3w21		
29	3w3	3w22		
31		3w21(Hilolo) 4w27(Margate) 4w25(Jupiter)		
32	8s1			
33	8s1(Urban Land)	4w22(Holopaw) 4w21(Basinger)		
34	8s1(Urban Land) 4w2(Immokalee) 4w3(Oldsmar)			
35	8s1			
36	8s1			
37	3w2	3w21		
38	8s1(Urban Land) 6s24(Matlacha) 3w6(Boca)			
39	6s9			
40				8w2
41	8s1(Urban Land) 6s9(Satellite)			
42	6s9(Canaveral)	8w1(Beaches)		
43				7w3
45	6s5			
48				8w2
49		5w2		
50		3w26		
51		3w26		
52				8w2
53				8w2

<u>Map Symbol</u>	<u>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
54		4w25(Jupiter) 5w2(Boca)		
56	5w1			

Map Units without an LCU listed are either not suited to these uses or suitability is so variable that it must be determined on-site.

## **ECOLOGICAL COMMUNITY**

The following categories are available and linked through the Ecological Community (EC) that is listed below.

kRNG - Rangeland Suitability  
IWLD - Wildlife Suitability  
mWOD - Woodland Suitability

EC 2 (South Florida Coastal Strand) - Map Unit 42

EC 3 (Sand Scrub) - Map Units 15, 39, 45

EC 6 (South Florida Flatwoods) - Map Units 7, 8, 10, 11, 16, 20\*, 21, 29, 31\*, 37\*

EC 8 (Cabbage Palm Flatwoods) - Map Unit 20\*

EC 12 (Wetland Hardwood Hammocks) - Map Units 37\*, 54\*

EC 14 (Tropical Hammocks) - Map Unit 56

EC 16 (Scrub Cypress) - Map Units 4\*, 6\*, 49\*

EC17 (Cypress Swamp) - Map Unit 25\*

EC 18 (Salt Marsh) - Map Units 52, 53

EC 19 (Mangrove Swamp) - Map Unit 40

EC 24 (Sawgrass Marsh) - Map Units 48\*, 50\*, 51\*

EC 26 (Slough) - Map Units 2, 3, 6\*, 17, 18, 27, 28, 48\*, 49\*, 50\*, 54\*

EC 25 (Freshwater Marshes and Ponds) - Map Units 4\*, 22, 23\*, 43

\* - These Map Units have more than one type of ecological community.

Map Units without an Ecological Community listed are not suited to these uses or suitability is so variable that it must be determined on-site.

## **URBAN USES**

The following additional nontechnical descriptions are available for urban interpretations:

oURB - Urban Use Statement  
pSEP - Septic Tank Absorption Fields  
qLRS - Local Roads and Streets

02 - Map Units 4, 22, 23, 40, and 52

03 - Map Units 2, 3, 7, 8, 10, 11, 14, 16, 17, 18, 20, 27, 28, 29, 31, 37, 48, 49, 50, 51, 54, and 56

04 -Map Units 15, 36, and 39

05 - Map Units 6, 24, 43, and 53

Map Units 32, 33, 34, 35, 38, 41, and 45

Map units without a link listed are either not suited to these uses or suitability is so variable that it must be determined on-site.

## **WATER QUALITY**

The last group of nontechnical description in this subsection of this FOTG is that group dealing with water quality, specifically pesticide and nutrient management. The link between the statements and the map units is listed below.

sWQ – Water Quality Statement  
tPES – Pesticide Management Statement  
uNUT – Nutrient Management Statement

01 - Map Units - None

02 - Map Units - 39, 45

03 - Map Units - 7, 8, 10, 12, 15, 17, 20, 21, 25, 31, 32, 33, 34, 35, 36, 38, 41, 42, 48, 49, 53, 54, and 56

04 - Map Units - 2, 3, 4, 6, 14, 16, 18, 22, 23, 27, 28, 29, 37, 40, 43, 50, 51, and 52,

## Nontechnical Soil Descriptions

### 3w2 Non-hydric, portions of Map Units 14, 28, 37

"aSOI", "3w2", "This map unit consists of nearly level, poorly drained soils on flatwoods, hammocks, and other flat areas. They have sandy surface and subsurface layers 20 to 40 inches thick over moderately to moderately rapidly permeable loamy layers."

"bSAC", "3w2", "The root zone is limited by a seasonal high water table that comes to near the surface in wet seasons. The available water capacity averages moderate in the root zone. Natural fertility is low but crop response to fertilization is good. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "3w2", "In normal years these soils have a seasonal high water table at a depth of between 6 and 18 inches for 1 to 4 months. In other months the water table is below these depths. Rarely, only during periods of high rainfall and only for a few days, is the water table above the normal seasonal high water table depth."

"dCUL", "3w2", "These soils have severe limitations for cultivated crops because of wetness. With a total water management system these soils are well suited to a variety of fruit and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. The cover crops and all other crop residue should be returned to the soil. Maximum yields require good soil tilth and nutrient management."

"eERO", "3w2", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "3w2", "Highest yields require irrigation during periods of low rainfall. Water can be supplied through subirrigation with a water table management system or by sprinklers."

"gCIT", "3w2", "With proper water table management these soils are suited to citrus crops where they occur in places relatively free from damaging cold in winter. Good management includes adequate water control to maintain the water table at least three feet below the surface. The trees should be planted on beds. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion."

"hPAS", "3w2", "These soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "3w2", "A total water table management system should remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **3w3 Non-hydric, portions of Map Unit 29**

"aSOI", "3w3", "This map unit consists of nearly level, poorly drained soils on flatwoods, hammocks, and other flat areas. They have sandy surface and subsurface layers over moderately to moderately rapidly permeable loamy or sandy subsoils. These soils have dark colored organic stained layers within 40 inches"

"bSAC", "3w3", "The root zone is limited by a seasonal high water table that comes to near the surface in wet seasons. The available water capacity averages low to very low in the root zone. Natural fertility is low but crop response to fertilization is good. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "3w3", "In normal years these soils have a seasonal high water table at a depth of between 6 and 18 inches for 1 to 4 months. In other months the water table is below these depths. Rarely, only during periods of high rainfall and only for a few days, is the water table above the normal seasonal high water table depth."

"dCUL", "3w3", "These soils have severe limitations for cultivated crops because of wetness in wet seasons and droughtiness during periods of low rainfall. With a total water management system these soils are well suited to a variety of flower and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. All crop residue should be returned to the soil. Maximum yields require nutrient management."

"eERO", "3w3", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "3w3", "Highest yields require irrigation during periods of low rainfall. Water can be supplied through subirrigation with a water table management system or by sprinklers."

"gCIT", "3w3", "With proper water table management these soils are suited to citrus crops. Good management includes adequate water control to maintain the water table at least three feet below the surface. The trees should be planted on beds. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion. Irrigation is required for proper yields."

"hPAS", "3w3", "These soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "3w3", "A total water table management system should remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **3w6 Non-hydric, portions of Map Unit 18, 21, 38**

"aSOI", "3w6", "This map unit consists of nearly level poorly drained soils on flatwoods, hammocks, and upland hardwood hammocks. They have sandy surface and subsurface layers and loamy subsoils over limestone bedrock at a depth of 20 to 40 inches."

"bSAC", "3w6", "The root zone of these soils is limited by a seasonal high water table at or near the surface and the limestone bedrock. The available water capacity is low to very low in the root zone. Natural fertility is low but crop response to fertilization is moderate. The internal drainage is slow under natural conditions but the response to artificial drainage is rapid. The hazard of erosion is slight."

"cH2O", "3w6", "In normal years these soils have a seasonal high water table at a depth of between 6 and 18 inches for 1 to 4 months. In other months the water table is below these depths. Rarely, only during periods of high rainfall and only for a few days, is the water table above the normal seasonal high water table depth."

"dCUL", "3w6", "These soils have severe limitations for cultivated crops because of wetness and the depth to bedrock. The variety of crops is very limited without a total water table management system that is designed to remove excess water in wet seasons and provide subirrigation during dry periods. Crop rotations should include close growing crops on the land at least two-thirds of the time. Nutrient management maximizes yields. Soil improving cover crops and all crop residues should be left on the ground."

"eERO", "3w6", "Erosion control is not a management concern on these soils."

"fIRR", "3w6", "If cultivated, highest yields require irrigation during periods of low rainfall. Water can be supplied through subirrigation with a water table management system or by sprinklers."

"gCIT", "3w6", "These soils have poor suitability for citrus crops. Soil depth and the low to very low available water capacity are severe limitations that are difficult to overcome."

"hPAS", "3w6", "These soils are only fairly suited to pastures and hay crops. Low to very low available water capacity is the main limitation. Improved grasses such as the improved bahiagrasses are adapted. Several varieties of clovers are also well adapted where properly managed. Moderate yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "3w6", "If cropped, these soils need a total water table management system to remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths for the planted crop. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **3w21 Hydric, portions of Map Units 14, 18, 28, 31, 37**

"aSOI", "3w21", "This map unit consists of nearly level, poorly drained soils on low flatwoods, low hammocks, and sloughs. They have sandy surface and subsurface layers 20 to 40 inches thick over moderately to moderately rapidly permeable loamy layers."

"bSAC", "3w21", "The root zone is limited by a seasonal high water table that is at or slightly above the surface in wet seasons. The available water capacity averages moderate in the root zone. Natural fertility is low but crop response to fertilization is good. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "3w21", "In normal years these soils have a seasonal high water table at a depth of 6 inches or less for 2 to 6 months. In other months the water table is usually below this depths. During periods of high rainfall the water table may be above the surface for periods of brief duration."

"dCUL", "3w21", "Cultivation of these hydric soils is not recommended. If cultivated, these soils have severe limitations because of wetness. With a total water management system these soils are suited to a variety of fruit and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. The cover crops and all other crop residue should be returned to the soil. Maximum yields require good soil tilth and nutrient management."

"eERO", "3w21", "Crops produced on these hydric soils do not normally need special erosion control practices."

"fIRR", "3w21", "If cultivated, highest yields require irrigation during periods of low rainfall. Water can be supplied through subirrigation with a water table management system or by sprinklers."

"gCIT", "3w21", "With proper water table management these soils are suited to citrus crops where they occur in places relatively free from damaging cold in winter. Good management includes adequate water control to maintain the water table at least three feet below the surface. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion."

"hPAS", "3w21", "These hydric soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "3w21", "If cropped, these hydric soils need a total water table management system to remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **3w22 Hydric, portions of Map Unit 29**

"aSOI", "3w22", "This map unit consists of nearly level, poorly drained soils on low flatwoods, low hammocks, and sloughs. They have sandy surface and subsurface layers over moderately to moderately rapidly permeable loamy or sandy subsoils. These soils have dark colored organic stained layers within 40 inches"

"bSAC", "3w22", "The root zone is limited by a seasonal high water table that is at or slightly above the surface in wet seasons. The available water capacity averages low to very low in the root zone. Natural fertility is low but crop response to fertilization is good. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "3w22", "In normal years these hydric soils have a seasonal high water table at a depth of less than 6 inches for 2 to 6 months. In other months the water table is usually below these depths. During periods of high rainfall the water table may be above the surface for periods of brief duration."

"dCUL", "3w22", "Cultivation of these hydric soils is not recommended. If cultivated, severe limitations due to wetness in wet seasons and droughtiness during periods of low rainfall exist. With a total water management system these soils are suited to a variety of flower and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. All crop residue should be returned to the soil. Maximum yields require nutrient management."

"eERO", "3w22", "Crops produced on these hydric soils do not normally need special erosion control practices."

"fIRR", "3w22", "Highest yields on these hydric soils require irrigation during periods of low rainfall. Water can be supplied through subirrigation with a water table management system or by sprinklers."

"gCIT", "3w22", "With proper water table management these hydric soils are suited to citrus crops. Good management includes adequate water control to maintain the water table at least three feet below the surface. The trees should be planted on beds. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion. Irrigation is required for proper yields."

"hPAS", "3w22", "These hydric soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "3w22", "A total water table management system should remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **3w25 Hydric portions of Map Unit 21**

"aSOI", "3w25", "This map unit consists of nearly level poorly drained soils on low flatwoods, low hammocks, and wetland hardwood hammocks. They have sandy surface and subsurface layers and loamy subsoils over limestone bedrock at a depth of 20 to 40 inches.

"bSAC", "3w25", "The root zone of these hydric soils is limited by a seasonal high water table at or near the surface and the limestone bedrock. The available water capacity is low to very low in the root zone. Natural fertility is low but crop response to fertilization is moderate. The internal drainage is slow under natural conditions but the response to artificial drainage is rapid."

"cH2O", "3w25", "In normal years these soils have a seasonal high water table at a depth of 6 inches or less for 2 to 6 months. In other months the water table is usually below this depth. During periods of high rainfall the water table may be above the surface for periods of brief duration."

"dCUL", "3w25", "These hydric soils have severe limitations for cultivated crops because of wetness and the depth to bedrock and cultivation is not recommended. If they are cultivated the variety of crops is very limited without an adequate total water table management system. Crop rotations should include close growing crops on the land at least two-thirds of the time. Nutrient management maximizes yields. Soil improving cover crops and all crop residues should be left on the ground."

"eERO", "3w25", "Erosion control is not a management concern on these hydric soils."

"fIRR", "3w25", "If cultivated, highest yields require irrigation during periods of low rainfall. Water can be supplied through subirrigation with a water table management system or by sprinklers."

"gCIT", "3w25", "These hydric soils have poor suitability for citrus crops. Soil depth and the low to very low available water capacity are severe limitations that are difficult to overcome."

"hPAS", "3w25", "These soils are only fairly suited to pastures and hay crops. Low to very low available water capacity is the main limitation. Improved grasses such as the improved bahiagrasses are adapted. Several varieties of clovers are also well adapted where properly managed. Moderate yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "3w25", "If cropped, these hydric soils need a total water table management system to remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths for the planted crop. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **3w26 Hydric Portions of Map Units 6, 50, 51**

"aSOI", "3w26", "This map unit consists of nearly level, poorly and very poorly drained hydric soils on low flatwood ridges and hammocks. These soils consist of sandy layers less than 20 inches thick over loamy calcareous material."

"bSAC", "3w26", "These soils have a root zone restricted by the underlying loamy calcareous material. The variety of crops is limited to those that are tolerant to alkaline conditions. Adapted crops include potatoes and West Indian vegetables. The available water capacity is moderate to high in the root zone. Natural fertility is moderate and crops respond well to the addition of nutrients."

"cH2O", "3w26", "In normal years these soils have a seasonal high water table at a depth of 6 inches or less for 2 to 6 months. In other months the water table is usually below this depth. During periods of high rainfall the water table may be above the surface for periods of brief duration."

dCUL", "3w26", "These soils have severe limitations for cultivated crops due to wetness and alkalinity. In their natural conditions these soils are not suited to cultivation; however, with an adequate water table management system, they are moderately well suited to a limited variety of locally important vegetable crops. Crop rotations should include close growing crops on the land at least two-thirds of the time. Nutrient management maximizes yields. Soil improving cover crops and all crop residues should be left on the ground."

eERO", "3w26", "Crops produced on these soils do not normally need special erosion control practices."

fIRR", "3w26", "Highest yields require irrigation during periods of low rainfall. Water can be supplied through subirrigation with a water table management system or by sprinklers."

gCIT", "3w26", "Due to alkalinity and the depth to loamy calcareous material these soils are not suited to the production of citrus crops."

hPAS", "3w26", "Due to alkalinity and the depth to limestone bedrock and the limited variety of grasses suited to these conditions, these soils are not suited to the production of pasture and hay crops."

iWMG", "3w26", "If cropped, these hydric soils need a total water table management system to remove excess water rapidly and consistently. Tile drains, canals, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depth for the crop grown. Slow soil permeability, frequent heavy rains, and the location of an adequate outlet are factors important to the design of a water table management system. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w2 Non-hydric portions of Map Units 7, 8, 17, 34**

aSOI", "4w2", "This map unit consists of nearly level, poorly drained soils on flatwoods, hammocks, and other flat areas. They have sandy layers more than 72 inches thick."

bSAC", "4w2", "The root zone is limited by a seasonal high water table that comes to near the surface in wet seasons. The available water capacity averages low in the root zone. Natural fertility is low but crop response to fertilization is moderate. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

ch2O", "4w2", "In normal years these soils have a seasonal high water table at a depth of between 6 and 18 inches for 1 to 4 months. In other months the water table is below these depths. Rarely, only during periods of high rainfall and only for a few days, is the water table above the normal seasonal high water table depth."

"dCUL", "4w2", "These soils have severe limitations for cultivated crops because of wetness. With a total water management system these soils are well suited to a variety of fruit and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. The cover crops and all other crop residue should be returned to the soil. Maximum yields require good soil tilth and nutrient management."

"eERO", "4w2", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "4w2", "Highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "4w2", "With proper water table management these soils are suited to citrus crops where they occur in places relatively free from damaging cold in winter. Good management includes adequate water control to maintain the water table at least three feet below the surface. The trees should be planted on beds. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion."

"hPAS", "4w2", "These soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "4w2", "A total water table management system should remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w3 Non-hydric portions of Map Units 2, 3, 10, 16, 20, 27, 34**

"aSOI", "4w3", "This map unit consists of nearly level, poorly drained soils on flatwoods, hammocks, and other flat areas. They are dominately sandy with a moderately slowly subsoil layer within 60 inches."

"bSAC", "4w3", "The root zone is limited by a seasonal high water table that comes to near the surface in wet seasons and by droughtiness during periods of low rainfall. The available water capacity averages low to very low in the root zone. Natural fertility is low and crop response to fertilization is moderate. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "4w3", "In normal years these soils have a seasonal high water table at a depth of between 6 and 18 inches for 1 to 4 months. In other months the water table is below these depths. Rarely, only during periods of high rainfall and only for a few days, is the water table above the normal seasonal high water table depth."

"dCUL", "4w3", "These soils have severe limitations for cultivated crops because of wetness in wet seasons and droughtiness during periods of low rainfall. With a total water management system these soils are well suited to a variety of flower and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. All crop residue should be returned to the soil. Maximum yields require nutrient management."

"eERO", "4w3", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "4w3", "Highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "4w3", "With proper water table management these soils are suited to citrus crops. Good management includes adequate water control to maintain the water table at least three feet below the surface. The trees should be planted on beds. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion. Irrigation is required for proper yields."

"hPAS", "4w3", "These soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "4w3", "A total water table management system should remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w6 Non-hydric portions of Map Units 11**

"aSOI", "4w6", "This map unit consists of nearly level poorly drained soils on flatwoods, hammocks, and upland hardwood hammocks. They have sandy surface and subsurface layers and loamy subsoils over limestone bedrock at a depth of less than 20 inches."

"bSAC", "4w6", "The root zone of these soils is limited by a seasonal high water table at or near the surface and the limestone bedrock. The available water capacity is low to very low in the root zone. Natural fertility is low and crop response to nutrients is low to moderate. The internal drainage is slow under natural conditions but the response to artificial drainage is rapid. The hazard of erosion is slight."

"cH2O", "4w6", "In normal years these soils have a seasonal high water table at a depth of between 6 and 18 inches for 1 to 4 months. In other months the water table is below these depths. Rarely, only during periods of high rainfall and only for a few days, is the water table above the normal seasonal high water table depth."

"dCUL", "4w6", "These soils have severe limitations for cultivated crops because of wetness and the depth to bedrock. The variety of crops is very limited without an adequate total water table management system that designed to remove excess water in wet seasons and provide subirrigation during dry periods. Crop rotations should include close growing crops on the land at least two-thirds of the time. Nutrient management maximizes yields. Soil improving cover crops and all crop residues should be left on the ground."

"eERO", "4w6", "Erosion control is not a management concern on these soils."

"fIRR", "4w6", "If cultivated, highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "4w6", "These soils have poor suitability for citrus crops. Soil depth and the low to very low available water capacity are severe limitations that are difficult to overcome."

"hPAS", "4w6", "These soils are only fairly suited to pastures and hay crops. Low to very low available water capacity is the main limitation. Improved grasses such as the improved bahiagrasses are adapted. Several varieties of clovers are also well adapted where properly managed. Moderate yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "4w6", "If cropped, these soils need a total water table management system to remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths for the planted crop. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w21 Hydric portions of Map Units 17, 33**

"aSOI", "4w21", "This map unit consists of nearly level, poorly drained soils on low flatwoods, low hammocks, and sloughs. They have sandy layers more than 72 inches thick and a spodic horizon within 30 inches."

"bSAC", "4w21", "The root zone is limited by a seasonal high water table that is at or slightly above the surface in wet seasons. The available water capacity averages moderate in the root zone. Natural fertility is low but crop response to fertilization is good. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "4w21", "In normal years these soils have a seasonal high water table at a depth of 6 inches or less for 2 to 6 months. In other months the water table is usually below this depths. During periods of high rainfall the water table may be above the surface for periods of brief duration."

"dCUL", "4w21", "Cultivation of these hydric soils is not recommended. If cultivated, these soils have severe limitations because of wetness. With a total water management system these soils are suited to a variety of fruit and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. The cover crops and all other crop residue should be returned to the soil. Maximum yields require good soil tilth and nutrient management."

"eERO", "4w21", "Crops produced on these hydric soils do not normally need special erosion control practices."

"fIRR", "4w21", "If cultivated, Highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "4w21", "With proper water table management these soils are suited to citrus crops where they occur in places relatively free from damaging cold in winter. Good management includes adequate water control to maintain the water table at least three feet below the surface. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion."

"hPAS", "4w21", "These hydric soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "4w21", "If cropped, these hydric soils need a total water table management system to remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w22 Hydric portions of Map Units 2, 3, 10, 16, 20, 27, 33**

"aSOI", "4w22", "This map unit consists of nearly level, poorly drained soils on low flatwoods, low hammocks, and sloughs. They are dominately sandy with a moderately slowly subsoil layer within 60 inches."

"bSAC", "4w22", "The root zone is limited by a seasonal high water table that is at or near the surface in wet seasons and by droughtiness during periods of low rainfall. The available water capacity averages low to very low in the root zone. Natural fertility is low and crop response to fertilization is moderate. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "4w22", "In normal years these hydric soils have a seasonal high water table at a depth of less than 6 inches for 2 to 6 months. In other months the water table is usually below these depths. During periods of high rainfall the water table may be above the surface for periods of brief duration."

"dCUL", "4w22", "Cultivation of these hydric soils is not recommended. If cultivated, severe limitations due to wetness in wet seasons and droughtiness during periods of low rainfall exist. With a total water management system these soils are suited to a variety of flower and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. All crop residue should be returned to the soil. Maximum yields require nutrient management."

"eERO", "4w22", "Crops produced on these hydric soils do not normally need special erosion control practices."

"fIRR", "4w22", "Highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "4w22", "With proper water table management these hydric soils are suited to citrus crops. Good management includes adequate water control to maintain the water table at least three feet below the surface. The trees should be planted on beds. Nutrient management is a preferred practice. Close growing vegetation between the trees is needed to protect the soil from erosion. Irrigation is required for proper yields."

"hPAS", "4w22", "These hydric soils are well suited to pastures and hay crops. Improved grasses such as pangola grass and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "4w22", "A total water table management system should remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths of within 18 inches for vegetables and below four feet for citrus. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w25 Hydric, portions of Map Units 31(Jupiter), 54**

"aSOI", "4w25", "This map unit consists of nearly level poorly drained soils on low flatwoods, low hammocks, and wetland hardwood hammocks. They have sandy surface and subsurface layers and loamy subsoils over limestone bedrock at a depth of less than 20 inches.

"bSAC", "4w25", "The root zone of these hydric soils is limited by a seasonal high water table at or near the surface and the limestone bedrock. The available water capacity is low to very low in the root zone. Natural fertility is low but crop response to nutrients is moderate. The internal drainage is slow under natural conditions but the response to artificial drainage is rapid."

"cH2O", "4w25", "In normal years these soils have a seasonal high water table at a depth of 6 inches or less for 2 to 6 months. In other months the water table is usually below this depth. During periods of high rainfall the water table may be above the surface for periods of brief duration."

"dCUL", "4w25", "These hydric soils have severe limitations for cultivated crops because of wetness and the depth to bedrock and cultivation is not recommended. If they are cultivated the variety of crops is very limited without an adequate total water table management system. Crop rotations should include close growing crops on the land at least two-thirds of the time. Nutrient management maximizes yields. Soil improving cover crops and all crop residues should be left on the ground."

"eERO", "4w25", "Erosion control is not a management concern on these hydric soils."

"fIRR", "4w25", "If cultivated, highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "4w25", "These hydric soils have poor suitability for citrus crops. Soil depth and the low to very low available water capacity are severe limitations that are difficult to overcome."

"hPAS", "4w25", "These soils are only fairly suited to pastures and hay crops. Low to very low available water capacity is the main limitation. Improved grasses such as the improved bahiagrasses are adapted. Several varieties of clovers are also well adapted where properly managed. Moderate yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "4w25", "If cropped, these hydric soils need a total water table management system to remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths for the planted crop. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w27 Hydric portions of Map Unit 31 (Margate)**

"aSOI", "4w27", "This map unit consists of nearly level poorly drained soils on low flatwoods, low hammocks, and wetland hardwood hammocks. They have sandy surface and subsurface layers and loamy subsoils over limestone bedrock at a depth of 20 to 40 inches.

"bSAC", "4w27", "The root zone of these hydric soils is limited by a seasonal high water table at or near the surface and the limestone bedrock. The available water capacity is low to very low in the root zone. Natural fertility is low but crop response to nutrients is moderate. The internal drainage is slow under natural conditions but the response to artificial drainage is rapid."

"cH2O", "4w27", "In normal years these soils have a seasonal high water table at a depth of 6 inches or less for 2 to 6 months. In other months the water table is usually below this depth. During periods of high rainfall the water table may be above the surface for periods of brief duration."

"dCUL", "4w27", "These hydric soils have severe limitations for cultivated crops because of wetness and the depth to bedrock and cultivation is not recommended. If they are cultivated the variety of crops is very limited without an adequate total water table management system. Crop rotations should include close growing crops on the land at least two-thirds of the time. Nutrient management maximizes yields. Soil improving cover crops and all crop residues should be left on the ground."

"eERO", "4w27", "Erosion control is not a management concern on these hydric soils."

"fIRR", "4w27", "If cultivated, Highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "4w27", "These hydric soils have poor suitability for citrus crops. Soil depth and the low to very low available water capacity are severe limitations that are difficult to overcome."

"hPAS", "4w27", "These soils are only fairly suited to pastures and hay crops. Low to very low available water capacity is the main limitation. Improved grasses such as the improved bahiagrasses are adapted. Several varieties of clovers are also well adapted where properly managed. Moderate yields require nutrient management, water table management, and controlled grazing to prevent overgrazing."

"iWMG", "4w27", "If cropped, these hydric soils need a total water table management system to remove excess water rapidly and provide a means of applying subirrigation. Tile drains, open ditches, and/or tail-race recovery systems may be needed to maintain the preferred water table depths for the planted crop. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **5w1 Hydric portions of Map Unit 56**

"aSOI", "5w1", "This map unit consists of nearly level, poorly drained and very poorly drained soils on flood plains. These soils are subject to common flooding during the growing season."

"bSAC", "5w1", "Wetness and flooding severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w1", "In normal years these hydric soils have a seasonal high water table within 6 inches of the surface for 2 to 6 months or more. In other months the water table is usually below these depths. These soils are also flooded frequently for long duration. Most often flooding occurs in the spring, but it may occur during any wet season."

"dCUL", "5w1", "These hydric soils are not suited to cultivated crops without an extensive water table management system."

"eERO", "5w1", "Erosion is not a management concern on crops produced on these hydric soils."

"fIRR", "5w1", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w1", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w1", "If these hydric soils are cultivated, an extensive water table management system is needed for crop and pasture production on these soils. It should remove excess water rapidly and provide a means of applying subirrigation. Dikes and a pumping systems are needed for flood control and tile drains and open ditches are needed to maintain the preferred water table depth. Rarely are drainage and flood protection economically feasible and environmentally sound."

### **5w2 Map Unit 49, 54**

"aSOI", "5w2", "This map unit consists of nearly level, poorly drained soils on low flatwoods. These soils have sandy and loamy layers 8 to 40 inches thick over limestone bedrock."

"bSAC", "5w2", "Wetness, depth to limestone bedrock, and shallow flowing water severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w2", "In normal years these soils have a seasonal high water table 6 to 12 below the surface for 2 to 6 months or more. In other months the water table is usually below these depths."

"dCUL", "5w2", "These soils have severe limitations for cultivated crops because of wetness, depth to bedrock, and droughtiness during periods of low rainfall. With a total water management system these soils are well suited to a variety of flower and vegetable crops. Management should include crop rotations that keep the soil in close growing cover crops at least two-thirds of the time. All crop residue should be returned to the soil. Maximum yields require nutrient management."

"eERO", "5w2", "Erosion is not a management concern on crops produced on these soils."

"fIRR", "5w2", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w2", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w2", "If these soils are cultivated, an extensive water table management system is needed for crop and pasture production. It should remove excess water rapidly and provide a means of applying subirrigation. Tile drains and open ditches are needed to maintain the preferred water table depth. Rarely is drainage economically feasible and environmentally sound."

#### **6s5 Non-hydric portion of Map Unit 45**

"aSOI", "6s5", "This map unit consists of well to excessively drained, nearly level to sloping soils on ridges along the coast and inland. They have sandy layers to depths of more than 80 inches."

"bSAC", "6s5", "The soils have a loose, well aerated root zone to depths of more than 80 inches. The available water capacity averages very low in the root zone. Natural fertility is very low and nutrients are rapidly leached from the soil. Rainfall is rapidly absorbed on protected areas, and there is little runoff. Erosion is not a serious hazard."

"cH2O", "6s5", "In normal years these soils do not have a seasonal high water table within a depth of 72 inches."

"dCUL", "6s5", "Due to the very low natural fertility, droughtiness, and the rapid leaching of plant nutrients, these soils are not suited to cultivated field crops."

"eERO", "6s5", "If these soils are cultivated, erosion control measures that would adequately protect the soil and water resource base are difficult to install and/or maintain."

"fIRR", "6s5", "Irrigation of high value crops is usually feasible where irrigation water is readily available. The rate of water application should be low enough to prevent runoff and erosion." A well designed irrigation system to maintain optimum moisture conditions is needed to assure acceptable citrus yields."

"gCIT", "6s5", "These soils are fairly suited to citrus trees even where they are in places relatively free from freezing temperatures. A good ground cover of close growing plants is needed between the trees to protect the soil from blowing and washing. Poor to fair yields of oranges and grapefruit are usually obtained without irrigation."

"hPAS", "6s5", "These soils have only fair suitability for pastures. Grasses such as hybrid bermudagrass and bahiagrass make only fair growth where an intensive nutrient management system is maintained. Clovers are not adapted."

"iWMG", "6s5", "Water table management is not normally practiced on these soils."

### **6s8 Map Unit 15**

"aSOI", "6s8", "This map unit consists of nearly level, somewhat poorly and moderately well drained soils on low ridges of the flatwoods. They have sandy layers to more than 72 inches deep. A layer 20 to 60 inches below the surface is weakly cemented with dark colored organic material. In some soils this layer is not present"

"bSAC", "6s8", "The root zone is limited by a water table during wet seasons and by droughtiness during periods of low rainfall. The available water capacity is very low in the root zone. Natural fertility is very low and crop response to nutrient management is only fair. The internal drainage rate is slow under natural conditions but response to artificial drainage is rapid."

"cH2O", "6s8", "In normal years these soils have a seasonal high water table at a depth of 18 and 40 inches for 1 to 4 months. In other months the water table is usually below this depth. Only rarely, during periods of high rainfall, is the water table above 18 inches."

"dCUL", "6s8", "Due to the very low natural fertility, wetness in wet seasons, droughtiness during periods of low rainfall, and the rapid leaching of plant nutrients, these soils are not suited to cultivated field crops."

"eERO", "6s8", "If these soils are cultivated, erosion control measures are not normally needed."

"fIRR", "6s8", "Irrigation of high value crops is usually feasible where irrigation water is readily available. The rate of water application should be low enough to prevent runoff and erosion." A well designed irrigation system to maintain optimum moisture conditions is needed to assure acceptable citrus yields."

"gCIT", "6s8", "These soils are only fairly to poorly suited for citrus trees even where they are in places relatively free from freezing temperatures. A good ground cover of close growing plants is needed between the trees to protect the soil from blowing and washing. Poor to fair yields of oranges and grapefruit are usually obtained without irrigation."

"hPAS", "6s8", "These soils have only fair suitability for pastures. Grasses such as pangola grass and bahiagrass make only fair growth where an intensive nutrient management system is maintained. Clovers are not adapted."

"iWMG", "6s8", "Water table management is not normally practiced on these soils."

### **6s9 Map Unit 39, 41(Satellite), 42(Canaveral)**

"aSOI", "6s9", "This map unit consists of gently rolling, somewhat excessively soils on old dunes. They have sandy layers to more than 72 inches deep."

"bSAC", "6s9", "The root zone is limited by droughtiness. The available water capacity is very low in the root zone. Natural fertility is very low and crop response to nutrient management is only fair. The internal drainage rate is rapid to very rapid."

"cH2O", "6s9", "In normal years these soils have a seasonal high water table from 24 to 40 inches from the surface."

"dCUL", "6s9", "Due to the very low natural fertility, droughtiness, and the rapid leaching of plant nutrients, these soils are not suited to cultivated field crops."

"eERO", "6s9", "If these soils are cultivated, erosion control measures are not normally needed."

"fIRR", "6s9", "Irrigation of high value crops is usually feasible where irrigation water is readily available. The rate of water application should be low enough to prevent runoff and erosion." "A well designed irrigation system to maintain optimum moisture conditions is needed to assure acceptable citrus yields."

"gCIT", "6s9", "These soils are only fairly to poorly suited for citrus trees. A good ground cover of close growing plants is needed between the trees to protect the soil from blowing and washing. Poor to fair yields of oranges and grapefruit are usually obtained with irrigation."

"hPAS", "6s9", "These soils have poor suitability for pastures. Grasses such as pangola grass and bahiagrass make only fair growth where an intensive nutrient management system is maintained. Clovers are not adapted."

"iWMG", "6s9", "Water table management is not normally practiced on these soils."

### **6s24 Map Unit 38(Matlacha)**

"aSOI", "6s24", "This map unit consists of nearly level some what poorly drained soils by fill material by earth-moving operations."

"bSAC", "6s24", "This soil is not normally used for agricultural operations."

"cH2O", "6s24", "In normal years these soils have a seasonal high water table at a depth of between 2 and 3 feet for 1 to 3 months annually."

"dCUL", "6s24", "Due to the gravelly nature of this soil these soils are not suited to cultivated crops."

"eERO", "6s24", "Due to the lack of these soils being cultivated, erosion control, is not a management concern."

"fIRR", "6s24", "Due to lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "6s24", " Due to the gravelly nature of this soil these soils are not suited to hay and pasture."

"iWMG", "6s24", "When used for sanitary facilities water table control is needed."

### **7w1 Map Units 23**

"aSOI", "7w1", "This map unit consists of nearly level, very poorly drained mineral and organic soils in depressional areas. They have thin to thick layers of partially decomposed remains of aquatic plants."

"bSAC", "7w1", "The root zone is limited by water that is above the surface in wet seasons. The available water capacity averages high in the root zone. Natural fertility is high. The internal drainage rate is very slow in the natural condition and seepage water seeps from the soil in wet seasons."

"cH2O", "7w1", "In normal years these soils have a seasonal high water table within 6 inches of the surface for 2 to 6 months of most years. During other months the water table is deeper. These soils are also subject to frequent ponding and/or flooding. Only rarely is the water table below the surface for an extended period."

"dCUL", "7w1", "If water control measures are established, these soil would be moderately well to well suited to cultivated crops. Due to the difficulty of installing these measures and the lack of outlets in most areas, they have seldom, if ever, been used for crops."

"eERO", "7w1", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "7w1", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "7w1", "If water control measures are established, these soil would be moderately well to well suited to improved pastures. Due to the difficulty of installing these measures and the lack of outlets in most areas, they have seldom, if ever, been used for pasture."

"iWMG", "7w1", "Water table management is not a normal practice on these soils because of the lack of cultivation."

### **7w3 Map Units 4, 22, 25, 43**

"aSOI", "7w3", "This map unit consists of nearly level, very poorly drained soils on depressions. They have sandy or loamy surface layers and sandy, loamy or clayey subsoil layers."

"bSAC", "7w3", "The root zone is limited by water that is above the surface in wet seasons. The available water capacity averages moderate in the root zone. Natural fertility is moderate. The internal drainage rate is very slow in the natural condition and seepage water seeps from the soil in wet seasons."

"cH2O", "7w3", "In normal years these soils have a seasonal high water table within 6 inches of the surface for 2 to 6 months of most years. During other months the water table is deeper. These soils are also subject to frequent ponding. Only rarely is the water table below the surface for an extended period."

"dCUL", "7w3", "Due to extreme wetness, these soils are not suited to cultivated crops."

"eERO", "7w3", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "7w3", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "7w3", "If water control measures are established, these soil would be moderately well suited to improved pastures. Due to the difficulty of installing these measures and the lack of outlets in most areas, they have seldom, if ever, been used for pasture."

"iWMG", "7w3", "Water table management is not a normal practice on these soils because of the lack of cultivation."

### **8s1 Map Unit 32, 33, 34, 35, 36, 38, 41**

"aSOI", "8s1", "This map unit consists of miscellaneous areas where no soil exists and has no value for agricultural uses."

"bSAC", "8s1", "Due to an impervious surface these areas are not vegetated."

"cH2O", "8s1", "These soils have a highly variable water table."

"dCUL", "8s1", "Due to the impervious surface, these soils are not suited to cultivated crops."

"eERO", "8s1", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "8s1", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "8s1", "Due to the impervious surface, actions, these soils are not suited to hay and pasture."

"iWMG", "8s1", "Water table management is not a normal practice on these soils because of the lack of cultivation."

### **8w1 Map Unit 42**

"aSOI", "8w1", "This map unit consists of narrow strips of land between water and the inland. These strips of land consist of quartz sand and shell fragments that are constantly shifted by wave action."

"bSAC", "8w1", "Beaches are not vegetated due to tidal and wave actions."

"cH2O", "8w1", "In normal years these soils have a seasonal high water table at the surface throughout the year. These soils are also subject to daily tidal flooding. Only rarely is the water table below the surface for an extended period."

"dCUL", "8w1", "Due to tidal and wave actions, these soils are not suited to cultivated crops."

"eERO", "8w1", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "8w1", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "8w1", "Due to tidal and wave actions, these soils are not suited to hay and pasture."

"iWMG", "8w1", "Water table management is not a normal practice on these soils because of the lack of cultivation."

**8w2 Map Units 40, 48, 52, 53,**

"aSOI", "8w2", "This map unit consists of nearly level, very poorly drained soils of tidal mangrove swamps. They have organic layers of varying thickness over limestone bebrock."

"bSAC", "8w2", "The root zone is limited by water that is above the surface daily and by salinity."

"cH2O", "8w2", "In normal years these soils have a seasonal high water table within 6 inches of the surface for 2 to 6 months of most years. During other months the water table is deeper. These soils are also subject to frequent ponding. Only rarely is the water table below the surface for an extended period."

"dCUL", "8w2", "Due to wetness, tidal flooding, and salinity these soils are not suited to cultivated crops."

"eERO", "8w2", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "8w2", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "8w2", "If water control measures are established, these hydric soils would be poorly to improved pastures due to salinity. Due to the difficulty of installing these measures and the lack of outlets in most areas, they have seldom, if ever, been used for pasture."

"iWMG", "8w2", "Water table management is not a normal practice on these soils because of the lack of cultivation."

## **ECOLOGICAL COMMUNITIES**

kRNG - Rangeland  
IWLD - Wildlife  
mWOD - Woodland

### **South Florida Coastal Strand - Map Unit 2**

"kRNG", "02", "This South Florida Coastal Strand site has little or no range value and is not used for rangeland."

"IWLD", "02", "This South Florida Coastal Strand site is well suited to a variety of shorebirds, gulls, and terns. The native grasses and legumes are good food sources and nesting sites. The area is important as a nesting ground for sea turtles. It is suited to mammals such as mice, raccoons, bobcats, foxes, and skunks. Many songbirds also inhabit the area."

"mWOD", "02", "This South Florida Coastal Strand site is not generally used for commercial production of wood or timber."

### **Sand Scrub - Map Units 15, 39, 45**

"kRNG", "03", "This Sand Scrub range site supports a dense stand of trees and shrubs and has limited potential for producing native forage. Sites in excellent condition produce 1500 to 3500 pounds per acre annually. Fifteen to 40 acres or more are usually needed per animal unit. Little forage will be available if the tree canopy cover exceeds 60%. Forage is usually 75% grasses and grass-like plants, 15% trees and shrubs, and 10% forbs."

"IWLD", "03", "This Sand Scrub site is suited to deer and turkey, especially as escape cover. Many birds inhabit the area including warblers, towhees, flycatchers, scrub jays, and quail. Native legumes furnish food (seeds) for the birds. Fruits of palmetto, gopher apple, and various species of oak are also a good food source. Timber harvest and other disturbances increase wildlife food by increasing the amount and types of Herbaceous plants and by sprout production."

"mWOD", "03", "This Sand Scrub site has a low potential for commercial production of wood and timber. The soils create severe equipment limitations and moderate seedling mortality problems. Sand pine is a commercial species suited to planting. It has a potential annual growth of approximately 0.4 to 0.5 cords per acre."

## **South Florida Flatwoods - Map Units 7, 8,10, 11, 16, 20, 21, 29, 31, 37, 48, 50**

"kRNG", "06", "This South Florida Flatwoods range site has the potential for producing significant amounts of high quality forage from creeping bluestem, chalky bluestem, and indiangrass. Sites in excellent condition produce 3000 to 6000 pounds per acre annually. Three to 16 acres or more are usually needed per animal unit. Little forage will be available if the tree canopy cover exceeds 60%. Forage is usually 75% grasses and grass-like plants, 15% trees and shrubs, and 10% herbaceous plants."

IWLD", "06", "This South Florida Flatwoods site is well suited to deer, turkey, and quail. It is fairly suited to squirrels and well suited to many songbirds. Palmetto fruit, pine mast, oak acorns, legume seed, and grasses are good sources of wildlife food. Mature hardwoods and snags provide good nesting sites for birds. This site is also well suited to bobcat, raccoons, opossums, and skunks. It is poorly suited to dove."

"mWOD", "06", "This South Florida Flatwoods site has a moderate potential for commercial production of wood and timber. The soils create moderate equipment limitations and moderate seedling mortality rates. Commercial species suited to planting and their potential annual growth in cords are as follows: Slash pine, 0.9 to 0.7. Longleaf pine, 0.5 to 0.4."

## **Upland Hardwoods Hammock -Map Unit 31\***

"kRNG", "11", "This Upland Hardwood Hammock range site provides good quality and high quantity forage especially in its early stages of succession before canopy cover becomes excessive and reduces forage value. Sites in excellent condition produce 3000 to 4500 pounds per acre annually. Eight to 23 acres or more are usually needed per animal unit. Little forage will be available if the tree canopy cover exceeds 60%. Forage is usually 50% grasses and grass-like plants, 30% trees and shrubs, and 20% forbs."

"IWLD", "11", "This Upland Hardwood Hammock site is well suited to deer, turkey, squirrel, black bear, and many songbirds. Hardwood mast (acorns, nuts, fruits, buds, and berries) furnish a good source of wildlife food. Mature hardwoods and snags provide good nesting sites for birds. Habitat is good for raccoons and opossums; poor for quail and dove; fair for reptiles; and poor for most amphibians."

"mWOD", "11", "This Upland Hardwood Hammock site, when managed for hardwood production, produces high quality products. It also has a high potential for commercial production of wood and timber. The soils create no serious management problems. Commercial coniferous species suited to planting and their potential annual growth in cords are as follows: Slash pine, 1.6 to 1.4. Loblolly pine, 1.3 to 1.1. Longleaf pine, 0.9 to 0.7."

#### **Wetlands Hardwood Hammock - Map Unit 54**

"kRNG", "12", "This Wetlands Hardwood Hammock site is sometimes used for woodland grazing but it has little or no range value."

"IWLD", "12", "This Wetlands Hardwood Hammock site is well suited to diverse wildlife population including deer, turkey, squirrel, black bear, feral and wild hogs, woodpeckers, owls, and many other furbearers. Hardwood mast (acorns, nuts, fruits, buds, and berries) furnish a good source of wildlife food. Habitat is poor for quail and dove; fair for many songbirds; and, because of the moist to wet soils, excellent for reptiles and amphibians."

"mWOD", "12", "This Wetland Hardwood Hammock site, when managed for hardwood production, produces high quality products. It also has a potential for commercial production of wood and timber. The soils must be drained for production of commercial conifers and many areas have been drained and planted to pine. Commercial pine species planted include slash pine and loblolly pine; however, this site is best suited to hardwoods and should be used for that purpose."

#### **Tropical Hammocks - Map Unit 56**

"kRNG", "14", "This Tropical Hammock site has little or no range value."

"IWLD", "14", "This Tropical Hammock site is well suited to most local and migratory birds. Mink, squirrels, deer, mice, and rabbits utilize this site. It also serves as a source of cover for many mammals during periods of high water and resting and feeding areas for migratory birds."

"mWOD", "14", "This Tropical Hammock site has little or no value for the commercial production of wood and timber."

#### **Scrub Cypress - Map Units 6, 49**

"kRNG", "16", "This Shrub Cypress site has little or no range value."

"IWLD", "16", "This Shrub Cypress site is poorly suited to most wildlife due to the sparseness of vegetative growth. Deer will range through the area, but the habitat is poor. During periods of high rainfall frogs, turtles, snakes, and salamanders utilize this habitat as do their predators such as raccoons, mink, and wading birds."

"kRNG", "16", "This Shrub Cypress site is seldom used for the commercial production of wood and timber although a moderate potential exists for areas with adequate drainage. The soils create severe equipment limitations and severe seedling mortality rates in all but the most drastically altered sites.. A commercial species that is suited to planting is slash pine with a potential annual growth of 0.8 to 0.6 cords."

### **Cypress Swamp - Map Unit 25**

"kRNG", "17", "This Cypress Swamp site has little or range value."

"IWLD", "17", "This Cypress Swamp site is well suited to a variety of waterfowl and wading birds. Although permanent wildlife residence are few, much of the wildlife from surrounding areas utilize this area for breeding, escape and resting, and as a water source. It is also a very important habitat for turkey roosting."

"mWOD", "17", "This Cypress Swamp site is seldom used for the commercial production of wood and timber. The soils create very severe limitations."

### **Salt Marsh - Map Units 52, 53,**

"kRNG", "18", "This Salt Marsh range site has the potential for producing significant amounts of high quality forage from cordgrasses, saltgrasses, and other grasses and forbs. Sites in excellent condition produce 4000 to 8000 pounds per acre annually. Three to 15 acres or more are usually needed per animal unit. Poor trafficability is a hazard. Forage is usually 90% grasses and grass-like plants, 5% trees and shrubs, and 5% herbaceous plants and vines."

"IWLD", "18", "This Salt Marsh site is well suited to a variety of wildlife including otter, raccoons, pelicans, alligators, coots, and many waterfowl. Species suitability depends upon salinity which varies seasonally and by management style. Dikes can be used to maintain a saline wildlife population or a fresh water population. Prescribed burning can also be used to improve forage value."

"mWOD", "18", "This Salt Marsh site is unsuited to the commercial production of wood and timber."

### **Mangrove Swamp - Map Unit 40**

"kRNG", "19", "This Mangrove Swamp site has little or no range value."

"IWLD", "19", "This Mangrove Swamp site is well suited to mink, raccoons, alligators, and snakes. It serves as a roosting and breeding area for many birds including grackle, herons, gulls, hawks, pelicans, ibis, eagles, osprey and many other. Both local and migratory birds use the area."

"mWOD", "19", "This Mangrove Swamp site is unsuited to the commercial production of wood and timber."

### **Sawgrass Marsh - Map Units 51**

"kRNG", "24", "This Sawgrass Marsh site has little or no range value."

"IWLD", "24", "This Sawgrass Marsh site is well suited to alligators, snakes, blackbirds, ibis, herons, bitterns, egrets, and kites. Wading birds and many types of waterfowl especially like this habitat. Frogs, snails, and crayfish are also common and serve as food for larger animals."

"mWOD", "24", "This Sawgrass Marsh site is unsuited to the commercial production of wood and timber."

### **Freshwater Marshes and Ponds - Map Units 4, 22, 23, 43**

"kRNG", "25", "This Freshwater Marsh and Ponds range site has the potential for producing significant amounts of high quality forage from a variety of high quality forage plants. Sites in excellent condition produce 5000 to 10000 pounds per acre annually. Three to 13 acres or more are usually needed per animal unit. Forage is usually 80% grasses and grass-like plants, 5% trees and shrubs, and 15% herbaceous plants."

"IWLD", "25", "This Freshwater Marsh and Ponds site is well suited to a wide variety of wetland wildlife species including waterfowl, reptiles, amphibians, and mammals. These species must withstand ponding of long or very long duration. Inhabitants include mink, otter, raccoons, herons, bitterns, ibis, cranes, snipe, ducks, kites, killdeer, caracara, and hawks. This community also serves as a water source for species from surrounding communities."

"mWOD", "25", "This Freshwater Marsh and Ponds site is seldom used for the commercial production of wood and timber. The soils create very severe limitations that are difficult to overcome."

### **Slough - Map Units 2, 3, 14, 17, 18, 27, 28**

"kRNG", "26", "This Slough range site has the potential for producing significant amounts of high quality forage from a variety of high quality forage plants such as maidencanes, bluestems, and panicums. Sites in excellent condition produce 3000 to 6000 pounds per acre annually. Four to 16 acres or more are usually needed per animal unit. Forage is usually 85% grasses and grass-like plants and 15% herbaceous plants."

"IWLD", "26", "This Slough site is well suited to snakes, frogs, salamanders, raccoons, and wading birds. The grass dominated vegetation is a highly valued food source for quail and deer; however, it provides poor cover for these and most other wildlife species except at its confluence with other communities."

"mWOD", "26", "This Slough site is seldom used for the commercial production of wood and timber. The soils create very severe limitations that are difficult to overcome."

## **URBAN USES**

oURB - Urban Use Statement

pSEP - Septic Tank Absorption Fields

qLRS - Local Roads and Streets

### **Map Units 4, 22, 23, 25, and 43**

"oURB", "02", "This soil is generally unsuited to most urban uses because of ponding and low bearing strength of the soil. Dwellings and small buildings can be constructed on pilings driven to suitable depths, however, access may be limited during periods when water tables are highest. Drainage may be impractical in many areas because of a lack of suitable outlets. Landscaping considerations should include use of species that are adapted to ponded water and organic soils."

"pSEP", "02", "This soil has severe limitations for septic tank absorption fields. Ponded water tables and organic soil materials interfere with the absorption of effluent from septic tanks and pose risks of contamination to adjacent surface waters."

"qLRS", "02", "This soil has severe limitations for local roads and streets. Road and street surfaces may subside, crack or ripple if sufficient fill is not used as a base. When possible, organic soil material should be removed and filled with suitable soil material to prevent subsidence and damage to road surfaces."

### **Map Units 2, 3, 6, 7, 8, 10, 11, 14, 16, 17, 18, 20, 21, 27, 28, 29, 31, 37, 48, 49, 50, 51, and 54**

"oURB", "03", "This soil is poorly suited to most urban uses because of a seasonal high water table at or near the soil surface. Housing pads, driveways, and other home site areas can be elevated using suitable fill. Area drainage can be installed to lower the water table if suitable outlets are available. Fill may also be used to elevate sites for small commercial buildings. Landscaping considerations should include use of species that are adapted to wetness."

"pSEP", "03", "This soil has severe limitations for septic tank absorption fields. High water tables interfere with the absorption of effluent from septic tanks and pose risks of contamination to adjacent surface waters. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table."

"qLRS", "03", "This soil has severe limitations for local roads and streets. For any construction, care should be taken not to impede natural drainage or impound water on the site and adjacent areas. Well designed culvert placement beneath any fill and use of existing water conveying landscapes can help minimize disturbance to natural drainage"

### **Map Units 15**

"oURB", "06", "Suitability is generally fair for most urban uses. A seasonal high water table is generally below a depth of concern. In areas without fill, house or small building pads can be elevated using suitable fill. The fill can be placed with a slight grade to allow water to drain away from the house or building. Landscaping considerations should include use of species that are adapted to wetness during periods of high rainfall and droughtiness during periods of low rainfall."

"pSEP", "06", "This soil has limitations for septic tank absorption fields. A seasonal high water table can interfere with the absorption of effluent from septic tanks and creates a risk of contamination to adjacent surface waters and system failure. Absorption fields can be mounded. Absorption field laterals should be installed downslope from dwellings and on the contour where slope is a concern."

"qLRS", "06", "This soil has some limitations for local roads and streets. They can be elevated using suitable fill. The fill can be placed with a slight grade to allow water to drain away from the house or building. Erosion control measures should be used during construction."

### **Map Units 32, 33, 34, 35, 36, 38, and 41**

"oURB", "15", "This soil survey map unit is so variable that no general suitability for urban land use can be given. On-site investigation by a soil scientist and/or engineer is recommended for any urban land use."

"pSEP", "15", "This soil survey map unit is so variable that no general interpretations for the installation of any type on-site sewage disposal system can be given. On-site investigation by a soil scientist and/or engineer is recommended."

"qLRS", "15", "This soil survey map unit is so variable that no general interpretations for the construction of local roads and streets can be given. On-site investigation by a soil scientist and/or engineer is recommended."

### **Map Units 39, 42, and 45**

"oURB", "17", "This map unit is unsuited to most urban uses. Shifting sands, salt spray, and very rapid permeability are the major limitations. Existing natural vegetation should be protected since it helps protect the site from coastal erosion. Where vegetation has been removed or has not grown naturally, salt and drought tolerant vegetation is best adapted for landscaping. Irrigation and nutrient management helps establish and maintain vegetation."

"pSEP", "17", "Septic tank absorption fields should be placed landward of coastal waters. Cut and fill can be used to reduce most limitations. Low density development of home sites on septic tanks is recommended since there is risk of pollution to coastal waters. In most areas, homes should be constructed on pilings to reduce risk of flooding during severe coastal storms.

"qLRS", "17", "This soil has moderate limitations for local roads and streets. Cut and fill is required. This leads to a cut bank caving problem and a revegetation problem."

### **Map Units 40, 52, 53, and 56**

"oURB", "19", "This soil is not suited to urban uses due to tidal flooding."

"pSEP", "19", "This soil is not suited to any on-site sewage disposal system due to wetness and tidal flooding."

"qLRS", "19", "This soil is not suited to local roads and streets due to wetness and tidal flooding."

## **WATER QUALITY: PESTICIDE AND NUTRIENT MANAGEMENT**

sWQ – Water Quality Statement

tPES – Pesticide Management Statement

uNUT – Nutrient Management Statement

### **Map Units - None**

"sWQ", "01", "These soils have a low potential for pesticide leaching to groundwater and a low potential for pesticide runoff to surface water. They have a medium or high potential for nitrogen leaching to groundwater and a low potential for phosphorous runoff to surface runoff."

"tPES", "01", "The Florida Pest Control Guide contains a listing of pesticides suitable for each type of pest and is available from the Cooperative Extension Service. Read and follow pesticide labels."

"uNUT", "01", "A soil test will be used as a guide to determine plant nutrient needs. In addition, a listing of nitrogen and phosphorous requirements by crop type is available from the Cooperative Extension Service. Nutrients should be added at the rate needed by the crop grown or according to the producer's goals, whichever is lower."

### **Map Units - 39, 45**

"sWQ", "02", "These soils have a medium or high potential for pesticide leaching to the groundwater and a low potential for pesticide runoff from the field(s) to surface water. They have a medium or high potential for nitrogen leaching to the groundwater and a low potential for phosphorous runoff to surface runoff."

"tPES", "02", "The Florida Pest Control Guide from the Cooperative Extension Service contains a list of pesticides suited to each pest. This list also contains Relative Leaching Potential Index (RLPI) values. While any approved pesticide listed in the guide can be used, the applicator should consider for use pesticides with a larger RLPI value and Health Advisory Level (HAL or HALEQ) value. Read and follow pesticide labels."

"uNUT", "02", "A soil test will be used as a guide to determine plant nutrient needs. In addition, a listing of nitrogen and phosphorous requirements by crop type is available from the Cooperative Extension Service. Nutrients shall be added at the rate needed by the crop grown or according to the producer's goals, whichever is lower."

### **Map Units - 7, 8, 10, 11, 15, 17, 20, 21, 25, 31, 32, 33, 34, 35, 36, 38, 41, 42, 48, 49, 53, 54, 56**

"sWQ", "03", "These soils have a medium or high potential for pesticide leaching to groundwater and a medium to high potential for pesticide runoff to surface water. They have a medium or high potential for nitrogen leaching to the groundwater and a medium or high potential for phosphorous runoff to surface runoff."

"tPES", "03", "The Florida Pest Control Guide from the Cooperative Extension Service contains a list of pesticides suited to each pest. This list also contains Relative Leaching Potential Index (RLPI) and Relative Runoff Potential Index (RRPI) values. While any approved pesticide listed in the guide can be used, the applicator should consider for use pesticides with a larger RLPI value, RRPI value, Health Advisory Level (HAL or HALEQ) value, and Aquatic Toxicity value. Read and follow pesticide labels."

"uNUT", "03", "A soil test will be used as a guide to determine plant nutrient needs. In addition, a listing of nitrogen and phosphorous requirements by crop type is available from the Cooperative Extension Service. Nutrients shall be added at the rate needed by the crop grown or according to the producer's goals, whichever is lower."

**Map Units 2, 3, 4, 6, 14, 16, 18, 22, 23, 27, 28, 29, 37, 40, 43, 50, 51, 52**

"sWQ", "04", "These soils have a low potential for pesticide leaching to groundwater and a medium or high potential for pesticide runoff to surface water. They have a medium or high potential for nitrogen leaching to groundwater and a medium or high potential for phosphorous runoff to surface runoff."

"tPES", "04", "The Florida Pest Control Guide from the Cooperative Extension Service contains a listing of pesticides suited to each pest. This list also contains Relative Runoff Potential Index (RRPI) values. While any approved pesticide listed in the guide can be used, the applicator should consider for use pesticides with a larger RRPI value and a larger Aquatic Toxicity value. Read and follow pesticide labels."

"uNUT", "04", "A soil test will be used as a guide to determine plant nutrient needs. In addition, a listing of nitrogen and phosphorous requirements by crop type is available from the Cooperative Extension Service. Nutrients shall be added at the rate needed by the crop grown, or according to the producer's goals, whichever is lower."