

Bay 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 are listed below.

Category

- aSOI - Soil Characteristics
- bSAC - Soil Agronomic Characteristics
- ch2O - Seasonal High Water Table
- dCUL - Cultivation Limitations
- eERO - Erosion Control
- fIRR - Irrigation Needs
- hPAS - Pasture and Hayland
- iWMG - Water Table Management

<u>Map Symbol</u>	<u>Compname</u>	<u>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
1	Albany	3w7			
2	Albany	3e5			
3	Blanton	3s21			
4	Blanton	4s21			
5	Bonifay	3s21			
6	Bonifay	4s21			

<u>Map Symbol</u>	<u>Compname</u>	<u>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
9	Lakeland	4s7			
10	Lakeland	6s2			
11	Lakeland	6s2			
12	Leefield	2w4			
13	Leon	4w5	4w24		
15	Stilson	2s3			
16	Stilson	3e22			
17	Troup	3s20			
18	Troup	4s20			
19	Troup	6s21			
20	Foxworth	3s7			
21	Foxworth	4s6			
22	Pamlico		7w2		7w2
22	Dorovan		7w2		
23	Chipley	3s5			
24	Chipley	4s2			
25	Hurricane	3w7			
26	Centenary	3s7			
27	Mandarin	6s7	4w24		
28	Allanton		4w24		
29	Rutlege		4w24		
30	Pottsburg	4w5	4w24		
31	Osier	3s5	5w8		5w8
32	Plummer	4w7	4w26		4w26
33	Pelham	3w4	5w6		5w6
36	Alapaha	3w4	5w6		
37	Rains		4w23		
38	Pansey	4w4	4w23		4w23
39	Pantego	4w4	4w23		
40	Arents	--	--		
41	Dirego		8w2		
42	Resota	6s4			
43	Urban	8s1	8s1		
44	Beaches		8w1		
45	Kureb	7s1			
46	Sapelo	4w5	4w24		
47	Pits	8e1	8e1		
48	Fripp	7s1			
48	Corolla	7s20			
50	Pickney		6w3		7w5

<u>Map Symbol</u>	<u>Compname</u>	<u>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
51	Rutlege		7w5		
51	Pamlico		7w2		7w2
52	Bayvi		8w2		
53	Ebro		7w2		
53	Dorovan		7w2		

## **ECOLOGICAL COMMUNITY**

The following categories are available below.

kRNG - Rangeland (not developed, no significant application in the area served by this field office.)

IWLD - Wildlife Suitability

mWOD - Woodland Suitability

EC 1 (North Florida Coastal Strand) - Map Unit: 48

EC 3 (Sand Pine Scrub) - Map Units: 42, 45

EC 4 (Longleaf Pine-Turkey Oak Hills) - Map Units: 5, 6, 9, 10, 11, 17, 18, 19, 20, 21, 26

EC 5 (Mixed Hardwood and Pines) - Map Units: 1, 2, 3, 4, 15, 16, 23, 24

EC 7 (North Florida Flatwoods) - Map Units: 12, 13, 25, 27, 28, 30, 31, 32, 33, 36, 38, 46

EC 18 (Salt Marsh) - Map Units: 41, 52

EC 21 (Swamp Hardwoods) - Map Units: 22, 29\*, 50\*, 51\*, 53\*

EC 22 (Shrub Bogs - Bay Swamps) - Map Units: 29\*, 50\*, 51\*, 53\*

\* - 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

A101 - Map Units - 29, 31, 41, 44, 46, 48, 50, 51, 52, 53

A102 - Map Units - 13, 28, 30, 32, 33, 36, 37, 38, 39

A103 - Map Unit - none

A104 - Map Units - 1, 2, 12, 23, 24, 25, 26, 27, 42, 45

A105 - Map Units - 3, 4, 5, 6, 9, 10, 15, 16, 17, 18, 19, 20, 21

A106 - Map Units - none

A107 - Map Units - 11

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 - 3, 4, 5, 6, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21, 26, 42, 45, 48(Fripp part)

03 - Map Units - 1, 2, 13, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 37, 38, 46, 48(Corolla part), 50, 51(Rutledge part)

04 - Map Units - 12, 22, 36, 39, 41, 51(Pamlico part), 52, 53

## Nontechnical Soil Descriptions

### 2s3 Map Unit 15

"aSOI", "2s3", "This map unit consists of nearly level to gently sloping, moderately well drained soils on uplands. They have sandy surface and subsurface layers 20 to 40 inches thick, and moderately permeable loamy subsoil."

"bSAC", "2s3", "A well aerated root zone is limited by a seasonal high water table in wet seasons. The available water capacity averages low to moderate in the root zone. Natural fertility is low, but crops respond well to fertilization. The internal drainage rate under natural conditions is slow and response to artificial drainage is moderately slow."

"cH2O", "2s3", "In normal years these soils have a seasonal high water table at a depth of between 30 and 40 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", "2s3", "These soils have moderate limitations for cultivated crops due to wetness and the hazard of erosion. With conservation practices that include erosion control and water table management, they are suited to a wide variety of cultivated crops. Nutrient management maximizes yields."

"eERO", "2s3", "Moderate erosion control measures that include crop rotations are needed. These measures should provide cover crops on the land at least half the time. Soil improving cover crops and all crop residues should be left on the land."

"hPAS", "2s3", "These soils are well suited to pastures. Grasses such as hybrid bermudagrass and bahiagrasses grow well when well managed. White clovers and other legumes are moderately adapted. Best yields require nutrient management and carefully controlled grazing to maintain plant vigor."

"iWMG", "2s3", "Ditches and/or tile drains, to remove excess surface water during rains, are needed to prevent crop damage for most crops produced on these soils. Some crops such as tobacco require more intensive water control measures. Tile drains can also be used to provide supplemental water through subirrigation."

### 2w4 Map Unit 12

"aSOI", "2w4", "This map unit consists of nearly level, moderately well drained and somewhat poorly drained soils on uplands. They have sandy surface and subsurface layers 20 to 40 inches thick and moderately permeable loamy subsoil layers."

"bSAC", "2w4", "A well aerated root zone is limited by a seasonal high water table in wet seasons. The available water capacity averages moderate in the root zone. Natural fertility is low, but the soils respond well to fertilization. Internal drainage rate is moderate, and the soils respond well to water table management. Water table management is needed for highest yields of some crops."

"cH2O", "2w4", "In normal years these soils have a seasonal high water table at a depth of between 18 and 36 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", "2w4", "These soils have moderate limitations for cultivated crops due to wetness. In their natural condition the variety of adapted crops is limited to those that are tolerant of slight wetness. Crop rotations should include close growing crops, on the land at least half the time. All crop residues should be left on the land. Best yields require good seedbed preparation and nutrient management."

"eERO", "2w4", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "2w4", "Crops produced on these soils are not normally irrigated."

"hPAS", "2w4", "These soils are well suited to pastures and hay crops. Such grasses as hybrid bermudagrass and improved bahiagrasses grow well where well managed. Several legumes are also well adapted. These plants require nutrient management and controlled grazing for highest yields."

"iWMG", "2w4", "These soils need a water table management system designed to remove excess water rapidly after heavy rains. Carefully designed tile or open drains are needed. Tile drains can also be used to supply water to plants during periods of low rainfall by subirrigation."

### **3e5 Map Unit 2**

"aSOI", "3e5", "This map unit consists of sloping, moderately well and somewhat poorly drained soils on uplands and ridges on lowlands. The soils have sandy surface and subsurface layers 20 to 40 inches thick and moderately permeable, loamy subsoil layers."

"bSAC", "3e5", "A well aerated root zone is limited by a seasonal high water table. The available water capacity averages low to moderate in the root zone. The soils have low natural fertility but crops respond well to fertilization. Runoff is rapid on unprotected areas and the hazard of erosion is moderate to severe."

"cH2O", "3e5", "In normal years these soils have a seasonal high water table at a depth of between 18 and 36 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", "3e5", "These soils have moderate to severe limitations for cultivated crops because of the hazard of erosion. The variety of crops that grow well is limited to those that are tolerant of slightly wet conditions. Such crops as corn, soybeans, and peanuts grow moderately where properly managed. Erosion control measures are needed. Maximum yields require proper seedbeds. Tile drains to remove water during wet seasons are needed for crops such as tobacco. Nutrient management maximize yields."

"eERO", "3e5", "Erosion control measures are needed on these soils. These include contour cultivation of row crops in alternate strips with cover crops. Crop rotations are needed that include cover crops at least two-thirds of the time. Soil improving cover crops and all crop residues should be left on the soil. Conservation tillage or no-till best protect the soil."

"fIRR", "3e5", "Crops produced on these soils are not normally irrigated."

"hPAS", "3e5", "These soils are moderately well suited to pastures and hay crops. Clovers, hybrid bermudagrass, and bahiagrass are well adapted. They produce moderate yields where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields and good cover."

"iWMG", "3e5", "A water table management system that includes ditches to remove excess surface water during rains is needed to prevent crop damage for most crops produced on these soils."

### **3e22 Map Unit 16**

"aSOI", "3e22", "This map unit consists of sloping, moderately well and somewhat poorly drained soils on uplands and ridges of the lowlands. The soils have sandy surface and subsurface layers 20 to 40 inches thick and moderately permeable, loamy subsoil layers."

"bSAC", "3e22", "A well aerated root zone is limited by a seasonal high water table. The available water capacity averages low to moderate in the root zone. The soils have low natural fertility but crops respond well to fertilization. Runoff is rapid on unprotected areas and the hazard of erosion is moderate to severe."

"cH2O", "3e22", "In normal years these soils have a seasonal high water table at a depth of between 18 and 36 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", "3e22", "These soils have moderate to severe limitations for cultivated crops because of the hazard of erosion. The variety of crops that grow well is limited to those that are tolerant of slightly wet conditions. Such crops as corn, soybeans, and peanuts grow moderately where properly managed. Erosion control measures are needed. Maximum yields require proper seedbeds. Tile drains to remove water during wet seasons are needed for crops such as tobacco. Nutrient management maximize yields."

"eERO", "3e22", "Erosion control measures are needed on these soils. These include contour cultivation of row crops in alternate strips with cover crops. Crop rotations are needed that include cover crops at least two-thirds of the time. Soil improving cover crops and all crop residues should be left on the soil. Conservation tillage or no-till best protect the soil."

"fIRR", "3e22", "Crops produced on these soils are not normally irrigated."

"hPAS", "3e22", "These soils are moderately well suited to pastures and hay crops. Clovers, hybrid bermudagrass, and bahiagrass are well adapted. They produce moderate yields where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields and good cover."

"iWMG", "3e22", "Ditching to remove excess surface water during rains is need to prevent crop damage for most crops produced on these soils. Some crops such as tobacco require more intensive water control measures including tile drains. Tile drains can also be used to provide supplemental water through subirrigation."

### **3s5 Map Units 23, 31**

"aSOI", "3s5", "This map unit consists of nearly level and gently sloping, somewhat poorly drained to soils on broad low ridges. They have sandy layers that are rapidly permeable to depths of more than 80 inches."

"bSAC", "3s5", "The root zone of these soils is limited by a seasonal high water table in wet seasons as well as droughtiness. The available water capacity is low to very low in all layers. Natural fertility is low and crop response to fertilization is moderate to low. Rainfall is rapidly absorbed and there is little runoff. The hazard of erosion is slight."

"ch2O", "3s5", "In normal years these soils have a seasonal high water table at a depth of between 18 and 42 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", "3s5", "These soils have severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduces potential yields of adapted crops. Soil management should include row crops on the contour in alternate strips with close growing 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 land."

"eERO", "3s5", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "3s5", "Irrigation of high value crops is usually feasible where irrigation water is readily available."

"hPAS", "3s5", "These soils are moderately well suited to pastures and hay. Plants such as hybrid bermudagrass and bahiagrasses are well adapted. These soils require nutrient management to maximize yields. Controlled grazing is needed to maintain vigorous plants for maximum yields."

"iWMG", "3s5", "Tile or other kinds of drains are needed for some crops that are damaged by high water table during the growing season. Tile drains can also be used for subirrigation during periods of low rainfall."

### **3s7 Map Units 20, 26**

"aSOI", "3s7", "This map unit consists of nearly level and gently sloping, moderately well drained soils that occur on narrow to broad ridges and isolated knolls. They have very rapidly permeable sandy layers to depths of more than 80 inches."

"bSAC", "3s7", "The root zone of these soils is limited by a seasonal high water table in wet seasons and by droughtiness during periods of low rainfall. The available water capacity is low in the root zone. Natural fertility is low and crop response to fertilization is low to moderate. Rainfall is rapidly absorbed and there is little runoff. The hazard of erosion is slight."

"cH2O", "3s7", "In normal years these soils have a seasonal high water table at a depth of between 42 and 72 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", "3s7", "These soils have severe limitations for most cultivated crops due to droughtiness and the rapid leaching of plant nutrients. These factors also limit the choice of plants and reduces potential yields of adapted 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."

"fIRR", "3s7", "Irrigation of high value crops is usually feasible where irrigation water is readily available."

"hPAS", "3s7", "These soils are moderately well suited to pastures. Hybrid bermudagrass and bahiagrasses are adapted. White clover and lespedezas are also adapted. These soils produce good yields where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields."

"iWMG", "3s7", "Tile, or other types of drains, are needed for some crops such as tobacco that are damaged by high water table during the growing season. Tiles can also be used as a source for subirrigation during periods of low rainfall."

### **3s20 Map Unit 17**

"aSOI", "3s20", "This map unit consists of gently sloping, well drained soils on upland ridges. They have sandy surface and subsurface layers that are 40 to 80 inches thick, and moderately permeable loamy subsoil layers."

"bSAC", "3s20", "These soils have a well aerated root zone that is not limited above a depth of about 72 inches. The available water capacity averages low to moderate in the root zone. Natural fertility is low and crop response to fertilization is moderate. Rainfall is rapidly absorbed on well vegetated areas. Runoff from unprotected areas is slight and the hazard of erosion on these areas is slight to moderate."

"cH2O", "3s20", "In normal years these soils do not have a seasonal high water table within a depth of 72 inches."

"dCUL", "3s20", "These soils have severe limitations for cultivated crops due to droughtiness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. Yields can be maximized with nutrient management. Crop rotations should include cover crops at least two-thirds of the time. These cover crops and all residues of other crops should be returned to the soil."

"eERO", "3s20", "Moderate erosion control measures such as cultivating row crops on the contour and in alternate strips with cover crops are needed."

"fIRR", "3s20", "Irrigation of some high value crops is usually feasible where irrigation water is readily available."

"hPAS", "3s20", "These soils are moderately well suited to pastures. Hybrid bermudagrass and bahiagrasses are well adapted but yields are reduced during periodic droughts. They produce well where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields, minimize the effects of droughts and to maintain good ground cover to minimize erosion."

"iWMG","3s20","Water table management is not normally practiced on these soils."

### **3s21 Map Units 3, 5**

"aSOI","3s21","This map unit consists of nearly level and gently sloping, well and moderately well drained soils on upland ridges. They have sandy surface and subsurface layers that are 40 to 80 inches thick, and moderately permeable loamy subsoil layers."

"bSAC","3s21","These soils have a well aerated root zone that is limited by a seasonal high water table in wet season and droughtiness during periods of low rainfall. The available water capacity averages low to moderate in the root zone. Natural fertility is low and crop response to fertilization is moderate. Rainfall is rapidly absorbed on well vegetated areas. Runoff from unprotected areas is slight and the hazard of erosion on these areas is slight to moderate."

"cH2O","3s21","In normal years these soils have a seasonal high water table at a depth of between 42 and 72 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","3s21","These soils have severe limitations for cultivated crops due to droughtiness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. Yields can be maximized with nutrient management. Crop rotations should include cover crops at least two-thirds of the time. These cover crops and all residues of other crops should be returned to the soil."

"eERO","3s21","Moderate erosion control measures such as cultivating row crops on the contour in alternate strips with cover crops are needed."

"fIRR","3s21","Irrigation of some high value crops such as tobacco is usually feasible where irrigation water is readily available."

"hPAS","3s21","These soils are moderately well suited to pastures. Hybrid bermudagrass and bahiagrasses are well adapted but yields are reduced during periodic droughts. They produce well where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields, minimize the effects of droughts and to maintain good ground cover to minimize erosion."

"iWMG","3s21","Water table management is not normally practiced on these soils."

### **3w4 NON-HYDRIC phases of Map Units 33, 36**

"aSOI", "3w4", "This map unit consists of nearly level, poorly and somewhat poorly drained soils on flatwoods, slightly depressed upland areas, and other flat areas. They have sandy or loamy surface and subsurface layers less than 40 inches thick over moderately to slowly permeable loamy or clayey layers."

"bSAC", "3w4", "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", "3w4", "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. Occasionally during periods of high rainfall, but only for a few days, is the water table above the normal seasonal high water table depth."

"dCUL", "3w4", "These soils have severe limitations for cultivated crops because of wetness. With a total water management system, these soils are suited to such crops as corn and soybeans. 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", "3w4", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "3w4", "Crops produced on these soils are not normally irrigated."

"hPAS", "3w4", "These soils are well suited to pastures and hay crops. Improved grasses such as improved 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", "3w4", "These soils receive the runoff and seepage from adjacent higher positions. 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. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **3w7 Map Units 1, 25**

"aSOI", "3w7", "This map unit consists of nearly level and gently sloping, somewhat poorly drained soils on low ridges within the flatwoods and broad flats of the uplands. They have rapidly permeable sandy layers to depths of 40 to 80 inches over moderately to moderately rapidly permeable subsoil."

"bSAC", "3w7", "The root zone of these soils is limited by a seasonal high water table in wet seasons and by droughtiness during periods of low rainfall. The available water capacity is low in the root zone. Natural fertility is low but the response to fertilizers is moderate. Rainfall is rapidly absorbed and there is little runoff. The hazard of erosion is moderate on that part of the map unit between 2 to 5 percent slopes which has been assigned to this capability class."

"cH2O", "3w7", "In normal years these soils have a seasonal high water table at a depth of between 18 and 42 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", "3w7", "These soils have severe limitations for most cultivated crops due to wetness in wet seasons, droughtiness during periods of low rainfall, rapid leaching of plant nutrients and the hazard of erosion on slopes greater than 2 percent. These factors also limit the choice of plants and reduces potential yields of adapted crops. Maximum yields require proper seedbeds and nutrient management. Soil improving cover crops and all crop residues should be left on the ground. Erosion control measures are needed on that part of the map unit between 2 to 5 percent slopes which has been assigned to this capability class."

"eERO", "3w7", "Erosion control measures are needed on these soils on slopes above 2 percent. These include contour cultivation of row crops in alternate strips with cover crops. Crop rotations are needed that include cover crops at least two-thirds of the time. Soil improving cover crops and all crop residues should be left on the soil. Conservation tillage or no-till best protect the soil."

"fIRR", "3w7", "Irrigation of high value crops is usually feasible where irrigation water is readily available."

"hPAS", "3w7", "These soils are moderately suited to pastures. Hybrid bermudagrass and bahiagrasses are adapted. White clover and lespedezas are also adapted. These soils produce good yields where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields."

"iWMG", "3w7", "Tile, or other types of drains, are needed for some crops such as tobacco that are damaged by high water table during the growing season. Tiles can also be used as a source for subirrigation during periods of low rainfall."

#### **4s2 Map Unit 24**

"aSOI", "4s2", "This map unit consists of sloping, somewhat poorly drained or moderately well drained soils on side slopes of low ridges. They have rapidly permeable sandy layers that are 80 inches thick."

"bSAC", "4s2", "These soils have a well aerated root zone that is limited by a seasonal high water table. The available water capacity averages low to very low in the root zone. Natural fertility is low and crop response to fertilization is moderate. Rainfall is rapidly absorbed on well vegetated areas. Runoff from unprotected areas is moderate and the hazard of erosion on these areas is severe, especially gully erosion."

"cH2O", "4s2", "In normal years these soils have a seasonal high water table at a depth of between 20 and 40 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", "4s2", "These soils have severe limitations for cultivated crops due to droughtiness during periods of low rainfall, wetness during in wet seasons, and erosion. These factors and rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. The steepness of slopes further limits the suitability by making cultivation more difficult and increasing the hazard of erosion. Yields can be maximized with nutrient management."

"eERO", "4s2", "Intensive erosion control measures such as cultivating row crops the contour in alternate strips with cover crops are needed. Crop rotations should include cover crops at least three-fourths of the time. These cover crops and all residues of other crops should be returned to the soil."

"fIRR", "4s2", "Because of steep slopes, irrigation is not feasible on these soils."

"hPAS", "4s2", "These soils are moderately well suited to pastures. Hybrid bermudagrass and bahiagrasses are well adapted but yields are reduced during periodic droughts. They produce well where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields, minimize the effects of droughts and to maintain good ground cover to minimize erosion."

"iWMG", "4s2", "Due to slope, water table management is not normally practiced on these soils."

## **4s6 Map Unit 21**

"aSOI", "4s6", "This map unit consists of sloping, moderately well drained soils on side slopes of ridges. They have rapidly permeable sandy layers to depths of 80 inches or more."

"bSAC", "4s6", "The root zone of these soils is limited by droughtiness during periods of low rainfall. The available water capacity is low very low in the root zone. Natural fertility is low and crop response to fertilization is low to moderate. Rainfall is rapidly absorbed but there is a hazard of high runoff on unprotected areas. The hazard of erosion is moderate."

"cH2O", "4s6", "In normal years these soils have a seasonal high water table at a depth of between 40 and 72 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", "4s6", "These soils have severe limitations for most cultivated crops due to droughtiness and the rapid leaching of plant nutrients. These factors also limit the choice of plants and reduces potential yields of adapted crops. Nutrient management maximizes yields."

"eERO", "4s6", "Erosion control measures are needed. These should include cultivation of row crops on the contour in alternate strips with close growing crops. Crop rotations should include close growing crops on the land at least three-fourths of the time. Terraces may create gully erosion problems. Soil improving cover crops and all crop residues should be left on the land."

"fIRR", "4s6", "Irrigation of cultivated crops is usually not feasible because of slope and the hazard of erosion. However, irrigation is feasible for a few high value crops. Increased yields of crops are realized where water for irrigation is readily available. The rate of water application should be low enough to prevent runoff and erosion."

"hPAS", "4s6", "These soils are moderately well suited to pastures and hay. Plants such as hybrid bermudagrass and bahiagrasses are well adapted. These soils require nutrient management to maximize yields. Controlled grazing is needed to maintain vigorous plants for maximum yields."

"iWMG", "4s6", "Water table management is not normally practiced on cultivated crops grown on these soils."

#### **4s7 Map Unit 9**

"aSOI", "4s7", "This map unit consists of nearly level and gently sloping, well drained to excessively drained soils on to broad ridges. These soils have very rapidly permeable sandy layers to depths of more than 80 inches."

"bSAC", "4s7", "The root zone of these soils well aerated to a depth of 80 inches or more. Root development is limited by droughtiness. The available water capacity is low to very low in the root zone. Natural fertility is low and crop response to fertilization is low to moderate. Rainfall is rapidly absorbed and there is little runoff. The hazard of erosion is slight."

"cH2O", "4s7", "In normal years these soils do not have a seasonal high water table within a depth of 72 inches."

"dCUL", "4s7", "These soils have very severe limitations for most cultivated crops due to droughtiness and the rapid leaching of plant nutrients. These factors also limit the choice of plants and reduces potential yields of adapted crops. Crop rotations should include close growing crops on the land at least three-fourths of the time. Irrigation and nutrient management are requirements for acceptable yields. Soil improving cover crops and all crop residues should be left on the ground."

"eERO", "4s7", "Moderate erosion control measures such as cultivating row crops on the contour and in alternate strips with cover crops are needed."

"fIRR", "4s7", "Although irrigation is a requirement for acceptable yields, due to the low water holding capacity of these soils, irrigation of all crops except a high value crops is not usually feasible. Locating a reliable and economical source of irrigation water is another management concern."

"hPAS", "4s7", "These soils are moderately suited to pastures. Deep-rooting plants such as Hybrid bermudagrass and bahiagrasses are adapted but yields are restricted due to droughtiness. Nutrient management is a required practice. Controlled grazing is needed to maintain vigorous plants for maximum yields."

"iWMG", "4s7", "Water table management is not normally practiced on these soils."

#### **4s20 Map Unit 18**

"aSOI", "4s20", "This map unit consists of sloping, well drained soils on upland ridges. They have sandy surface and subsurface layers that are 40 to 80 inches thick, and moderately permeable loamy subsoil layers."

"bSAC", "4s20", "These soils have a well aerated root zone that is not limited above a depth of about 72 inches. The available water capacity averages low to moderate in the root zone. Natural fertility is low and response to fertilization is moderate. Rainfall is rapidly absorbed on well vegetated areas. Runoff from unprotected areas is slight and the hazard of erosion on these areas is moderate."

"cH2O", "4s20", "In normal years these soils do not have a seasonal high water table within a depth of 72 inches."

"dCUL", "4s20", "These soils have severe limitations for cultivated crops due to droughtiness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. Erosion is an additional hazard. Yields can be maximized with nutrient management."

"eERO", "4s20", "Moderate erosion control measures such as cultivating row crops the contour in alternate strips with cover crops are needed. Crop rotations should include cover crops at least three-fourths of the time. These cover crops and all residues of other crops should be returned to the soil."

"fIRR", "4s20", "Irrigation of some high value crops is usually feasible where irrigation water is readily available."

"hPAS", "4s20", "These soils are moderately suited to pastures. Hybrid bermudagrass and bahiagrasses are well adapted but yields are reduced during periodic droughts. They produce well when they are fertilized and limed. Controlled grazing is needed to maintain vigorous plants for maximum yields, minimize the effects of droughts and to maintain good ground cover to minimize erosion."

"iWMG", "4s20", "Water table management is not normally practiced on these soils."

#### **4s21 Map Units 4, 6**

"aSOI", "4s21", "This map unit consists of sloping, well and moderately well drained soils on upland ridges. They have sandy surface and subsurface layers that are 40 to 80 inches thick, and moderately permeable loamy subsoil layers."

"bSAC", "4s21", "These soils have a well aerated root zone that is limited by a seasonal high water table in wet season and droughtiness during periods of low rainfall. The available water capacity averages low to moderate in the root zone. Natural fertility is low and response to fertilization is moderate. Rainfall is rapidly absorbed on well vegetated areas. Runoff from unprotected areas is slight and the hazard of erosion on these areas is moderate."

"cH2O", "4s21", "In normal years these soils have a seasonal high water table at a depth of between 42 and 72 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", "4s21", "These soils have severe limitations for cultivated crops due to droughtiness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. The hazard of erosion is an additional management concern. Yields can be maximized with nutrient management."

"eERO", "4s21", "Moderate erosion control measures such as cultivating row crops on the contour in alternate strips with cover crops are needed. Crop rotations should include cover crops at least three-fourths of the time. These cover crops and all residues of other crops should be returned to the soil"

"fIRR", "4s21", "Irrigation of some high value crops is usually feasible where irrigation water is readily available."

"hPAS", "4s21", "These soils are moderately suited to pastures. Hybrid bermudagrass and bahiagrasses are well adapted but yields are reduced during periodic droughts. They produce well when they are fertilized and limed. Controlled grazing is needed to maintain vigorous plants for maximum yields, minimize the effects of droughts and to maintain good ground cover to minimize erosion."

"iWMG", "4s21", "Water table management is not normally practiced on these soils."

#### **4w4 NON-HYDRIC phases of Map Units 38, 39**

"aSOI", "4w4", "This map unit consists of nearly level, poorly drained soils on broad flats, scattered depressions, and poorly defined drainageways. They have sandy surface and subsurface layers less than 20 inches thick over moderately to slowly permeable loamy and clayey layers."

"bSAC", "4w4", "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", "4w4", "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", "4w4", "These soils have severe limitations for cultivated crops because of wetness."

"eERO", "4w4", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "4w4", "Crops produced on these soils are not normally irrigated."

"hPAS", "4w4", "These soils are moderately well suited to pastures and hay crops. Improved grasses such as improved 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", "4w4", "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. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w5 NON-HYDRIC phases of Map Units 13, 30, 46**

"aSOI", "4w5", "This map unit consists of nearly level, poorly drained soils on flatwoods and low flat areas in the sandhills. They have sandy layers more than 72 inches thick and a spodic horizon within 80 inches of the surface."

"bSAC", "4w5", "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", "4w5", "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", "4w5", "These soils have severe limitations for cultivated crops because of wetness. With a total water management system these soils are suited to such crops as corn and soybeans. 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", "4w5", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "4w5", "Crops produced on these soils are not normally irrigated."

"hPAS", "4w5", "These soils are well suited to pastures and hay crops. Improved grasses such as improved 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", "4w5", "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. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w7 NON-HYDRIC phase of Map Unit 32**

"aSOI", "4w7", "This map unit consists of nearly level, poorly drained soils on flatwoods, broad flats, and along poorly defined drainageways. They have sandy surface and subsurface layers 40 to 80 inches thick over moderately to moderately rapidly permeable loamy layers."

"bSAC", "4w7", "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", "4w7", "In normal years these soils have a seasonal high water table at a depth of between 6 and 18 inches for 3 to 6 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", "4w7", "These soils have severe limitations for cultivated crops because of wetness. With a total water management system these soils are suited to such crops as corn and soybeans. 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", "4w7", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "4w7", "Crops produced on these soils are not normally irrigated."

"hPAS", "4w7", "These soils are well suited to pastures and hay crops. Improved grasses such as improved 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", "4w7", "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. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w23 HYDRIC phases of Map Units 37, 38, 39**

"aSOI", "4w23", "This map unit consists of nearly level, poorly drained soils on broad flats, scattered depressions, and poorly defined drainageways. They have sandy surface and subsurface layers less than 20 inches thick over moderately to slowly permeable loamy and clayey layers."

"bSAC", "4w23", "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", "4w23", "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", "4w23", "Cultivation of these hydric soils is not recommended. If cultivated, these soils have severe limitations because of wetness."

"eERO", "4w23" These hydric soils do not normally need special erosion control practices."

"fIRR", "4w23", "If cultivated, highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"hPAS", "4w23", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "4w23", "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. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w24 HYDRIC phases of Map Units 13, 27, 28, 29, 30, 46**

"aSOI", "4w24", "This map unit consists of nearly level, poorly drained soils on flatwoods and low flat areas in the sandhills. They have sandy layers more than 72 inches thick and a spodic horizon within 80 inches of the surface."

"bSAC", "4w24", "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 fertilizer is good. Internal drainage is slow but response to artificial drainage is moderate to rapid. The hazard of erosion is slight."

"cH2O", "4w24", "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", "4w24", "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", "4w24", "Crops produced on these hydric soils do not normally need special erosion control practices."

"fIRR", "4w24", "If cultivated, highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"hPAS", "4w24", "These hydric soils are well suited to pastures and hay crops. Improved grasses such as the improved 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", "4w24", "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. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

#### **4w26 HYDRIC phase of Map Unit 32**

"aSOI", "4w26", "This map unit consists of nearly level, poorly drained soils on broad flats, low flatwoods and in poorly defined drainageways. They have sandy surface and subsurface layers 40 to 80 inches thick over moderately to moderately rapidly permeable loamy layers."

"bSAC", "4w26", "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", "4w26", "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", "4w26", "Cultivation of these hydric soils is not recommended. If cultivated, these soils have severe limitations because of wetness."

"eERO", "4w26", "Crops produced on these hydric soils do not normally need special erosion control practices."

"fIRR", "4w26", "If cultivated, highest yields require irrigation during periods of low rainfall either through subirrigation through a water table management system or by sprinklers."

"hPAS", "4w26", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "4w26", "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 will be needed to maintain the preferred water table depths. To obtain adequate drainage, the spacing of tile drains is important. Tile drains may be used for subirrigation during periods of low rainfall."

### **5w6 HYDRIC phases of Map Units 33, 36**

"aSOI", "5w6", "This map unit consists of nearly level, very poorly drained and poorly drained soils on flood plains. They are saturated or flooded with water much of the time."

"bSAC", "5w6", "Wetness and flooding severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w6", "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 commonly for long duration. Most often flooding occurs in the winter and spring, but it may occur during any wet season."

"dCUL", "5w6", "These hydric soils are not suited to cultivated crops without an extensive water table management system."

"eERO", "5w6", "Erosion is not a management concern on crops produced on these hydric soils."

"fIRR", "5w6", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w6", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w6", "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."

### **5w8 HYDRIC phase of Map Unit 31**

"aSOI", "5w8", "This map unit consists of nearly level, poorly to very poorly drained soils in depressions. They have sandy layers more than 20 inches thick. These soils are all covered with shallow water much of the time."

"bSAC", "5w8", "Wetness and ponding severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w8", "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 frequently covered with shallow water for long duration. Most often flooding occurs in the winter and spring, but it may occur during any wet season."

"dCUL", "5w8", "These hydric soils are not suited to cultivated crops without an extensive water table management system."

"eERO", "5w8", "Erosion is not a management concern on crops produced on these hydric soils."

"fIRR", "5w8", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w8", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w8", "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."

## **6s2 Map Units 10, 11**

"aSOI", "6s2", "This map unit consists of sloping to strongly sloping excessively drained soils on side slopes of the uplands. They have rapidly permeable sandy layers to depths of more than 80 inches and some places with moderately permeable, loamy subsoil layers below 40 inches."

"bSAC", "6s2", "These soils have a well aerated root zone more than 80 inches thick. Available water capacity averages very low in the root zone. Natural fertility is low and response to fertilization is low. Rainfall is absorbed on protected areas and there is little runoff. The hazard of sheet erosion is moderate on unprotected areas and the hazard of gully erosion is severe where runoff water is concentrated."

"cH2O", "6s2", "In normal years these soils do not have a seasonal high water table within a depth of 72 inches."

"dCUL", "6s2", "These soils are not suitable for cultivated crops because of droughtiness, steepness of slope, and susceptibility to gully erosion."

"eERO", "6s2", "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", "6s2", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "6s2", "These soils are moderately suited for pastures. Deep rooting plants such as hybrid bermudagrass and bahiagrass are well adapted but yields are reduced by periodic droughts. Nutrient management is needed. Grazing should be controlled to permit plants to maintain vigor for highest yields."

"iWMG", "6s2", "Water table management is not normally practiced on these soils."

## **6s4 Map Unit 42**

"aSOI", "6s4", "This map unit consists of excessively drained, nearly level, gently sloping and sloping soils on ridges along the coast and inland. They have sandy layers to more than 80 inches deep."

"bSAC", "6s4", "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."

"cH2O", "6s4", "In normal years these soils do not have a seasonal high water table within a depth of 72 inches."

"dCUL", "6s4", "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", "6s4", "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", "6s4", "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."

"hPAS", "6s4", "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", "6s4", "Water table management is not normally practiced on these soils."

## **6s7 NON-HYDRIC phase of Map Unit 27**

"aSOI", "6s7", "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."

"bSAC", "6s7", "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", "6s7", "In normal years these soils have a seasonal high water table at a depth of 18 and 30 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", "6s7", "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", "6s7", "If these soils are cultivated, erosion control measures are not normally needed."

"fIRR", "6s7", "Irrigation of high value crops is usually feasible where irrigation water is readily available."

"hPAS", "6s7", "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", "6s7", "Water table management is not normally practiced on these soils."

## **6s21 Map Unit 19**

"aSOI", "6s21", "This map unit consists of strongly sloping, well drained soils on side slopes of low ridges of the uplands. They have sandy surface and subsurface layers 40 to 80 inches thick and moderately permeable, loamy subsoil layers."

"bSAC", "6s21", "These soils have root zones thicker than 80 inches. The available water capacity averages low to very low in the root zone. Natural fertility is low and crop response to fertilizers is only moderate. Rainfall is absorbed on protected areas and there is little runoff. The hazard of gully erosion is severe on unprotected areas."

"cH2O", "6s21", "In normal years these soils do not have a seasonal high water table within a depth of 72 inches."

"dCUL","6s21","Due to steepness of slope , droughtiness, and the hazard of erosion, these soils are not suited to cultivated crops."

"eERO","6s21","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","6s21","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."

"hPAS","6s21","These soils are poorly suited to improved pastures. Deep rooting plants such as hybrid bermudagrass and improved bahiagrass are well adapted. They grow well and produce good ground cover where nutrient management is practiced, but grazing must be greatly restricted to maintain vigorous plants for adequate growth to maintain complete ground cover for soil protection. Nutrient management is required to maintain vigorous plants for acceptable yields."

"iWMG","6s21","Water table management is not normally practiced on these soils."

### **6w3 Map Unit 50**

"aSOI","6w3","This capability unit consists of nearly level, very poorly drained soils that occur in depressions. These soils are mineral soils.

"bSAC","6w3","The root zone is restricted by a water table that is at or above the surface during wet seasons. The internal drainage is slow and response to artificial drainage is poor. The available water capacity is medium. Permeability is rapid to moderately rapid in the surface layers and slow to very slow in the subsoils. Natural fertility is low to medium, and organic matter content is low."

"cH2O","6w3","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 ponded frequently for long duration with water approximately 2 feet above the surface. Most often ponding occurs in the winter and spring, but it may occur during any wet season."

"dCUL","6w3","These soils are not suited to cultivated crops without extensive water table and ponding control management systems. Wetness, restricted rooting zone, slow internal drainage, and difficulty in obtaining adequate drainage outlets severely limit their use for cultivated crops. Water table management systems are hard to establish and maintain."

"eERO","6w3","Erosion is not a management concern on crops produced on these hydric soils if they happen to be cultivated."

"fIRR","6w3","If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS","6w3","These soils are moderately suited to pastures, but intensive management is needed. These soils respond well to nutrient management. Water table management is needed to remove excess water during wet seasons."

"iWMG", "6w3", "Because of the slow internal movement of water through the subsoils, and usually the lack of good outlets in areas where these soils occur, good water table management systems are difficult to establish and maintain. These systems normally require an extensive system of canals and ditches. A diking and/or pumping system for control of ponding water is also needed."

### **7s1 Map Units 45, 48(Fripp)**

"aSOI", "7s1", "This map unit consists of excessively drained nearly level to strongly sloping soils on low dunelike ridges near the coast and on low ridges and knolls in the flatwoods. They have uncoated sand layers to depths of more than 80 inches."

"bSAC", "7s1", "These soils have an excessively aerated root zone to depths of more than 80 inches. The available water capacity is very low. Natural fertility is very low and response to fertilizers is very low. Rainfall is rapidly absorbed but moves rapidly through the soil and very little is retained. There is a hazard of gully erosion."

"cH2O", "7s1", "In normal years these soils do not have a seasonal high water table within 72 inches of the surface."

"dCUL", "7s1", "Due to extreme droughtiness, these soils are not suited to cultivated crops."

"eERO", "7s1", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "7s1", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "7s1", "Due to extreme droughtiness, these soils are not suited to hay and pasture."

"iWMG", "7s1", "Water table management is not a normal practice on these soils because of the lack of cultivation and an available water source."

### **7s20 Map Unit 48(Corolla)**

"aSOI", "7s20", "This map unit consists of moderately well drained and somewhat poorly drained, nearly level to strongly sloping soils on low dunelike ridges near the coast and on low ridges and knolls in the flatwoods. They have uncoated sand layers to depths of more than 80 inches."

"bSAC", "7s20", "These soils have an excessively aerated root zone to depths of the seasonal high water table. The available water capacity is very low. Natural fertility is very low and response to fertilizers is very low. Rainfall is rapidly absorbed but moves rapidly through the soil and very little is retained. There is a hazard of gully erosion."

"cH2O", "7s20", "In normal years these soils have a seasonal high water table at a depth of between 20 and 60 inches for 1 to 4 months. In other months the water table is below the seasonal high water table depth. Only rarely is the water table above that depth."

"dCUL", "7s20", "Due to extreme droughtiness, these soils are not suited to cultivated crops."

"eERO", "7s20", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "7s20", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "7s20", "Due to extreme droughtiness, these soils are not suited to hay and pasture."

"iWMG", "7s20", "Water table management is not a normal practice on these soils because of the lack of cultivation and an available water source."

### **7w2 HYDRIC phases of Map Units 22, 51(Pamlico part), 53**

"aSOI", "7w2", "This map unit consists of nearly level, very poorly drained organic soils in depressions and floodplains. Some areas are underlain by sandy or loamy subsoils. These are hydric soils."

"bSAC", "7w2", "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", "7w2", "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", "7w2", "These soils are not suited to cultivated crops without extensive water table and flood control management systems. Wetness, restricted rooting zone, slow internal drainage, and difficulty in obtaining adequate drainage outlets severely limit their use for cultivated crops. Water table management systems are hard to establish and maintain."

"eERO", "7w2", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "7w2", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "7w2", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system. 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", "7w2", "Water table management is not a normal practice on these soils because of the lack of cultivation."

### **7w5 HYDRIC phases of Map Units 50, 51(Rutlege part)**

"aSOI", "7w5", "This map unit consists of nearly level, very poorly drained soils that occur on flood plains. They have thick black or very dark gray surface layers. The subsoil is sandy to loamy and extends to depths of more than 60 inches. Permeability is moderately slow in loamy layer, and moderately rapid in sandy layer. These soils are subject to frequent flooding."

"bSAC", "7w5", "These soils have a root zone that is limited by water that covers the surface during much of the year under natural conditions. They have moderate natural fertility, but wetness and flooding makes them unsuited to cultivated crops."

"cH2O", "7w5", "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 flooding. Only rarely is the water table below the surface for an extended period."

"dCUL", "7w5", "Due to extreme wetness, these soils are not suited to cultivated crops."

"eERO", "7w5", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "7w5", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "7w5", "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", "7w5", "Water table management is not a normal practice on these soils because of the lack of cultivation."

### **8e1 Map Unit 47**

"aSOI", "8e1", "This map unit consists of areas where soil materials have been removed by erosion or by mining operations. Some of these areas fill with water periodically and other areas have geologic materials exposed."

"bSAC", "8e1", "Due to infertile exposed geologic soil material, these areas are not vegetated."

"cH2O", "8e1", "These soils have a highly variable water table."

"dCUL", "8e1", "Due to the infertile material, these soils are not suited to cultivated crops."

"eERO", "8e1", "Due to the lack of these soils being cultivated, erosion control is not a management concern."

"fIRR", "8e1", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "8e1", "Due to the infertile material, these soils are not suited to hay and pasture."

"iWMG", "8e1", "Water table management is not a normal practice on these soils because of the lack of cultivation."

### **8s1 Map Unit 43**

"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 44**

"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 41, 52**

"aSOI", "8w2", "This map unit consists of nearly level, very poorly drained soils of the tidal marshes."

"bSAC", "8w2", "The variety of plants growing on these soils is limited to those that are tolerant of extreme wetness and saline conditions."

"cH2O", "8w2", "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", "8w2", "Due to extreme wetness 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", "Due to extreme wetness and salinity, these soils are not suited to hay and pasture."

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

## **ECOLOGICAL COMMUNITIES**

kRNG - Rangeland (not developed, no significant application in the area served by this field office.)

IWLD - Wildlife

mWOD - Woodland

### **North Florida Coastal Strand - Map Unit 48**

("IWLD", "01") "This ecological community is well suited for shorebirds, gulls, and terns. The native grasses and legumes furnish good food sources and nesting sites. The area is important as a nesting ground for sea turtles. It is suited for mammals such as mice, raccoons, bobcats, foxes, and skunks. Many songbirds also inhabit the area."

("mWOD", "01") "This ecological community is not generally recommended for woodland."

### **Sand Pine Scrub- Map Units 42, 45**

("IWLD", "03") "This ecological community is suited for deer and turkey, especially as escape cover. Many birds inhabit the area including warblers, towhees, flycatchers, scrub jays, and quail. Several varieties of native legumes furnish food (seeds) for the birds. The palmetto, gopher apple, and various species of oak provide good food when they are fruiting. Timber harvest and other disturbances increase wildlife food by increasing the amount and types of herbaceous plants and by sprout production."

("mWOD", "03") "This community has a low potential for commercial wood production. There are severe equipment limitations and moderate seedling mortality problems due to loose, well to excessively well-drained soils that are infertile. Sand pine is the commercial species suitable for planting."

### **Longleaf Pine-Turkey Oak Hills - Map Units 5, 6, 9, 10, 11, 17, 18, 19, 20, 21, 26**

("IWLD", "04") "This ecological community is suited for deer and turkey, especially as escape cover. Many birds inhabit the area including warblers, towhees, flycatchers, scrub jays, and quail. Several varieties of native legumes furnish food (seeds) for the birds. Timber harvest and other disturbances increase wildlife food by increasing the amount and types of herbaceous plants and by sprout production."

("mWOD", "04") "This community has a moderately high potential for commercial production of pulp and timber. These soils create moderate equipment limitations and seedling mortality problems. Sand pine and longleaf pine are the commercial species suited to planting."

### **Mixed Hardwood And Pine - Map Units 1, 2, 3, 4, 15, 16, 23, 24**

("IWLD", "05") "This community offers very good habitat for deer, turkey, squirrel, and many songbirds. Hardwood mast (acorns, nuts, fruits, buds, berries) furnish a good source of wildlife food. Mature hardwoods and snags provide good nesting sites for birds. Habitat is good for raccoons, opossums, bobwhite quail and dove, fair for reptiles, and poor for most amphibians."

("mWOD", "05") "This community has a high potential productivity for commercial wood production. There are no serious management problems. Slash pine and loblolly pine are the commercial species suited to planting."

### **North Florida Flatwoods - Map Unit 12, 13, 25, 27, 28, 30, 31, 32, 33, 38, 46**

("IWLD", "07") "The North Florida Flatwoods community is well suited for deer, quail and turkey. It is fair for squirrels and well suited for many songbirds, particularly warblers. It is also well suited for bobcat, skunks, opossums, and raccoons. It is poorly suited for dove."

("mWOD", "07") "This community has a moderate potential productivity for commercial wood production. There are moderate equipment limitations and seedling mortality due to wet soil conditions. The commercial species suitable for planting is slash pine."

### **Salt Marsh - Map Units 41, 52**

("IWLD", "18") "The salt marsh community has good habitat for a variety of wildlife. The habitat type is usually maintained by natural forces and influences such as tidal action and periodic hurricanes. Storms usually cause the creation of "open" water in salt and brackish marshes and also may change salinities. The resulting effect is that plant succession is set back and more favorable habitat may be created for waterfowl, furbearers, and some other forms of wildlife such as wading birds. Artificially created dikes to control salinity are used in managing marsh plants for wildlife. Prescribed burning is also a technique used in marsh management."

("mWOD", "18") "The soils of this community are unsuited to commercial wood production."

### **Swamp Hardwoods - Map Units 22, 29\*, 50\*, 51\*, 53\***

("IWLD", "21") "This community hosts a large variety of wildlife. It is especially well suited for waterfowl, reptiles, amphibians, and mammals. Animals found in this community must withstand the flooding which occurs periodically. Gray squirrel, mink, raccoon, and river otter are the most commonly found mammals. Many birds inhabit this area including chickadees, titmice, yellow-billed cuckoo, wood duck, limpkin, flycatchers, owls, turkey, woodcock, hooded warbler, cedar waxwing, woodpeckers, and wren. The various species of hardwood vegetation provide good food and cover for these species."

("mWOD", "21") "This Swamp Hardwoods community is generally not used for commercial woodland production except for limited harvest of hardwoods. However, this community does have a high potential for commercial woodland production on areas with adequate surface drainage. There are severe equipment limitations and seedling mortality due to the poorly to very poorly drained soil conditions. Slash pine is suitable for planting in areas with adequate surface drainage."

**Pitcher Plant Bogs - Map Unit 29\*, 50\*, 51\*, 53\***

("IWLD", "23") "This ecological community is one of the least productive for wildlife which is probably due to the low diversity of plant species and growth forms limiting food and cover. It provides fair habitat for white-tailed deer and bobwhite quail. It is also suited for raccoons, armadillos, and grass-country birds."

("mWOD", "23") "This ecological community is not generally recommended for woodland."

\* - These Map Units have more than one type of Ecological Community.

**URBAN USES**

oURB - Urban Use Statement

**Map Units 29, 31, 41, 44, 46, 48, 50, 51, 52, 53**

"AREA 1 oURB GROUP", "A101", "Soils in this group have severe limitations for urban uses. Seasonal flooding or ponding is the primary limiting factor. Additionally, other severely limiting factors probably will be present in these soils."

**Map Units 13, 28, 30, 32, 33, 36, 37, 38, 39**

"AREA 1 oURB GROUP", "A102", "Soils in this group have severe limitations for most urban uses. A seasonal high water table saturating these soils at or near the surface is the primary limiting factor. Additionally, other severely limiting factors may be present in these soils."

### **Map Units 1, 2, 12, 23, 24, 25, 26, 27, 42, 45**

"AREA 1 oURB GROUP","A104","Soils in this group have moderate limitations for many urban uses. Soil properties related to texture and wetness primarily affect this group. Soils of this group may have severe limitations for a specific urban use."

### **Map Units 3, 4, 5, 6, 9, 10, 15, 16, 17, 18, 19, 20, 21**

"AREA 1 oURB GROUP","A105","Soils in this group have slight limitations for many urban uses. Soils of this group may have moderate or even severe limitations for a specific urban use. Soil properties related to texture, slope, or wetness may affect a specific urban use."

### **Map Unit 11**

"AREA 1 oURB GROUP","A107","Soils in this group have moderate limitations for urban uses. Slope is the primary limiting factor. Additionally, other moderately limiting factors may be present in these soils such as texture or shallow depth to rock."

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

sWQ – Water Quality Statement

tPES – Pesticide Management Statement

uNUT – Nutrient Management Statement

### **Map Units - 3, 4, 5, 6, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21, 26, 42, 45, 48(Fripp part)**

"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 - 1, 2, 13, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 37, 38, 46, 48(Corolla part), 50, 51(Rutlege part)**

"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 - 12, 22, 36, 39, 41, 51(Pamlico part), 52, 53**

"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."