

Columbia County, FL
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>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
1	3w7			
2	3w7			
3	4s7			
4	6s2			
5	4s7			
6	6s20			
7	3s22			
8	3s21			

<u>Map Symbol</u>	<u>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
9	4s21			
10	3s22			
11	2s2(Bonneau) 3s24			
12	3s2(Bonneau) 4s21(Blanton) 6e4(Ichetucknee)			
13	2s2			
14	3s2			
15	2s2(Bonneau) 3s25(Blanton)			
16	3s2(Bonneau) 4s21(Blanton)			
17	3s30(Chiefland) 4s27(Pedro)			
18	3s31(Chiefland) 4s27(Pedro)			
19	3s32(Chiefland) 4s27(Pedro)			
20	3s5			
21		7w2		
22	6s34			
23	6s34			
24	3s4			
25	2e4			
26	3w7			
27	3s24			
28	6e4			
29	4s7			
30	6s2			
31	2w4			
32	4w5			
33	4e20			
34	2s3			
35	3s1			
36	6s7			
37	4w5			
38		7w3		
39	5w20			
40	3w7			
41		5w21		
42	3w5			
43	2e1			

<u>Map Symbol</u>	<u>Non hydric LCU</u>	<u>Hydric LCU</u>	<u>Drained LCU</u>	<u>Undrained LCU</u>
44	3e1			
45		7w2		
46		7w2(Dorovan) 7w35(Pamlico)		
47		3w23		
48	4w7			
49		5w29		
50	8e1			
51	4w7			
52		5w8		
53	4w7			
54		5w30		
55		5w30(Plummer) 7w2(Pamlico)		
56	4w5			
57		6w3		
58		5w29		
59	3s20			
60	4s20			
61	6s25			

ECOLOGICAL COMMUNITY

The following categories are available below.

kRNG - Rangeland
 IWLD - Wildlife Suitability
 mWOD - Woodland Suitability

EC 4 (Longleaf Pine-Turkey Oak Hills) - Map Units 3, 4, 5, 29, 30, 59, 60

EC 5 (Mixed Hardwood and Pines) - Map Units 11(Bonneau part), 12(Bonneau part), 13, 14, 15(Bonneau part), 16(Bonneau part), 20, 25, 31, 34, 35, 40, 43, 44

EC 7 (North Florida Flatwoods) - Map Units 22, 23, 32, 33, 36, 37, 39, 42, 48*, 49*, 56

EC 11 (Upland Hardwood Hammocks) – Map Units 1, 2, 7, 8, 9, 10, 11(Blanton, Ichetucknee parts) 12(Blanton, Ichetucknee parts), 15(Blanton part), 16(Blanton part), 17, 18, 19, 24, 26, 27, 28

EC 17 (Cypress Swamp) – Map Units 54*, 57*, 58*

EC 21 (Swamp Hardwoods) - Map Units 41, 45*, 46*, 47, 48*, 49*, 52*, 53*, 55*, 57*, 58*

EC 22 (Shrub Bog - Bay Swamp) – Map Units 21, 38, 45*, 46*, 51*, 52*, 53*, 55*

EC 23 (Pitcher Plant Bogs) – Map Unit 51*

* - 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
qLRS – Local Roads and Streets

01 - Map Units 1, 2, 8, 9, 11, 12, 13, 14, 15, 16, 20, 21, 24, 25, 26, 34, 35, 36, 40, 45, 47, 49, 52, 54, 55, 56, 58

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

02 - Map Units - 3, 4, 5, 28, 29, 30, 59

03 - Map Units - 31, 44

04 - Map Units - 1, 2, 7, 8, 9, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 32, 33, 34, 35, 36, 37, 39, 40, 41, 42, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61

Nontechnical Soil Descriptions

2e1 Map Unit 43

"aSOI", "2e1", "This map unit consists of gently sloping, well drained soils of the uplands. They have sandy or loamy surface layers less than 20 inches thick, and moderately permeable, loamy or clayey subsoil layers. These soils are prime farmland."

"bSAC", "2e1", "These soils have a well aerated root zone more than 60 inches thick. The available water capacity averages moderate to high in the root zone. These soils have moderate natural fertility and crops respond well to fertilization. Rainfall is readily absorbed and retained in the soil. Runoff during rain is moderate to rapid on unprotected areas and the erosion hazard is moderate."

"cH2O", "2e1", "In normal years these soils have no seasonal high water table within 72 inches."

"dCUL", "2e1", "These soils have moderate limitations for growing cultivated crops because of the hazard of erosion. A wide variety of cultivated crops is well adapted. Such crops as corn and soybeans grow well where properly managed. Moderate erosion control measures are needed. Maximum yields require good seed-soil contact, fertilizing, and liming. Nutrient management maximize yields."

"eERO", "2e1", "Moderate erosion control measures are needed on these soils. These include a system of well-designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. Crop rotations are needed that include cover crops at least half 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", "2e1", "Crops produced on these soils are not normally irrigated."

"hPAS", "2e1", "These soils are well suited to pastures and hay crops. Pasture grasses such as hybrid bermudagrass and the improved bahiagrasses are well adapted. Clovers and other legumes are also adapted. They grow well where properly managed. They require nutrient management and controlled grazing to maintain vigorous plants for highest yields and good soil cover."

"iWMG", "2e1", "Water table management is not normally practiced on these soils."

2e4 Map Unit 25

"aSOI", "2e4", "This map unit consists of gently sloping, moderately well drained soils on terraces and uplands. They have sandy surface layers less than 20 inches thick, and moderately slowly or slowly permeable loamy or clayey subsoils. These soils are prime farmland."

"bSAC", "2e4", "The root zone is limited by a seasonal high water table. The available water capacity is moderate in the root zone. Natural fertility is low, but crops respond well to fertilization. Internal drainage rate is slow, but the soils respond well to artificial drainage. Some drainage or a raised seedbed is needed for highest yields of most crops. Rainfall runoff from unprotected areas is moderate and the hazard of erosion is moderate."

"cH2O", "2e4", "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", "2e4", "These soils have moderate limitations for cultivated crops because of the hazard of erosion. The variety of crops that are well adapted is somewhat limited by occasional wetness. Such crops as corn, soybeans, and peanuts grow moderately where properly managed. Moderate erosion control measures are needed. Maximum yields require proper seedbeds and nutrient management. Tile drains to remove water during wet seasons are needed for crops such as tobacco."

"eERO", "2e4", "Moderate erosion control measures are needed on these soils. These include a system of well-designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. Crop rotations are needed that include cover crops at least half 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."

"hPAS", "2e4", "These soils are well suited to improved pastures and hay crops. Clovers, hybrid bermudagrass, and bahiagrasses are well adapted. They grow well where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields and a good ground cover."

"iWMG", "2e4", "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."

2s2 Map Units 11(Bonneau part), 13, 15

"aSOI", "2s2", "This map unit consists of nearly level and gently sloping, well drained to moderately well drained soils on uplands. They have sandy surface and subsurface layers 20 to 40 inches thick, and moderately slowly to slowly permeable loamy and clayey subsoil layers."

"bSAC", "2s2", "These soils have a well aerated root zone that is limited at about 45 inches by slowly permeable subsoils or by wetness. 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 with little runoff. The erosion hazard is slight."

"cH2O", "2s2", "In normal years these soils have a seasonal high water table at a depth of between 36 and 48 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", "2s2", "These soils have moderate limitations for cultivated crops due to droughtiness during dry seasons and wetness during wet seasons. They can be cultivated safely with ordinary good farming methods, but droughtiness and rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. With good management such crops as corn, soybeans, peanuts and tobacco can be grown. Nutrient management maximizes yields."

"eERO", "2s2", "Row crops should be planted on the contour in alternate strips with cover crops. Crop rotations should include cover crops at least half the time. Soil improving cover crops and all residues of other crops should be left on the field."

"fIRR", "2s2", "Crops produced on these soils are not normally irrigated; however, yields can be increased with irrigation. Irrigation is feasible where water is readily available."

"hPAS", "2s2", "These soils are well suited to pastures. Hybrid bermudagrass and bahiagrasses are well adapted. They produce well where nutrient management is practiced. Controlled grazing is needed to maintain vigorous plants for maximum yields and good cover."

"iWMG", "2s2", "Water table management is not normally practiced on these soils."

2s3 Map Unit 34

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

"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 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", "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 31

"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 such as corn and peanuts 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."

3e1 Map Unit 44

"aSOI", "3e1", "This map unit consists of sloping, well drained soils on side slopes of uplands. They have sandy or loamy surface layers less than 20 inches thick, and moderately permeable, loamy or clayey subsoil layers. These soils are prime farmland."

"bSAC", "3e1", "These soils have a well aerated root zone more than 60 inches thick. The available water capacity is moderate to high in the root zone. They have moderate natural fertility and crops respond well to fertilization. Rainfall is readily absorbed and retained in the soil. Runoff after rains is rapid on unprotected areas and the erosion hazard is severe."

"cH2O", "3e1", "In normal years these soils have no seasonal high water table within 72 inches."

"dCUL", "3e1", "These soils have severe limitations for growing cultivated crops because of the hazard of erosion. A wide variety of cultivated crops is well adapted. Such crops as corn and soybeans grow well when properly managed. Maximum yields require good soil tilth and nutrient management."

"eERO", "3e1", "Intensive erosion control measures are needed. These measures include a system of well designed terraces with stabilized outlets and 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", "3e1", "Crops produced on these soils are not normally irrigated."

"hPAS", "3e1", "These soils are well suited to pastures and hay crops. Pasture grasses such as hybrid bermudagrass and the improved bahiagrasses are well adapted. Clovers and other legumes are also well adapted. They grow well where properly managed and require nutrient management and controlled grazing to maintain vigorous plants for highest yields and good soil cover to reduce the hazard of erosion."

"iWMG", "3e1", "Water table management is not normally practiced on these soils."

3s1 Map Unit 35

"aSOI", "3s1", "This map unit consists of sloping, well drained soils on side slopes of the uplands. They have sandy surface and subsurface layers 20 to 40 inches thick, and moderately to moderately rapidly permeable loamy subsoil layers."

"bSAC", "3s1", "These soils have a well aerated root zone more than 72 inches thick. 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 moderate and the hazard of erosion on these areas is moderate."

"cH2O", "3s1", "In normal years these soils have no seasonal high water table within 72 inches."

"dCUL", "3s1", "These soils have severe limitations for cultivated crops due to droughtiness and erosion. Droughtiness 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", "3s1", "Intensive 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 two-thirds of the time. These cover crops and all residues of other crops should be returned to the soil."

"fIRR", "3s1", "Irrigation of some high value crops is usually feasible where irrigation water is readily available."

"hPAS", "3s1", "These soils are moderately well suited to pastures. Deep rooting plants such as hybrid bermudagrass and bahiagrass are well adapted. They produce well where nutrient management is practiced. Controlled grazing is important to maintain vigorous plants for maximum yields and to provide good cover to minimize erosion."

"iWMG", "3s1", "Water table management is not normally practiced on these soils."

3s2 Map Unit 12, 14, 16

"aSOI", "3s2", "This map unit consists of sloping, well or moderately well drained soils on low ridges. They have sandy surface and subsurface layers that are 20 to 40 inches thick, and moderately slowly permeable to slowly permeable loamy and clayey subsoil layers."

"bSAC", "3s2", "These soils have a well aerated root zone that is limited at about 45 inches by slowly permeable subsoils or by wetness. 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 moderate and the hazard of erosion on these areas is moderate."

"cH2O", "3s2", "In normal years these soils have a seasonal high water table at a depth of between 36 and 48 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", "3s2", "These soils have severe limitations for cultivated crops due to droughtiness and erosion. Droughtiness 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", "3s2", "Intensive erosion control measures such as cultivating row crops on the contour and in alternate strips with cover crops are needed. 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. Irrigation of some high value crops such as tobacco is usually feasible where irrigation water is readily available."

"hPAS", "3s2", "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", "3s2", "Water table management is not normally practiced on these soils."

3s4 Map Unit 24

"aSOI", "3s4", "This map unit consists of nearly level and gently sloping, well drained soils on upland ridges."

"bSAC", "3s4", "The soils have sandy surface and subsurface layers 40 to 80 inches thick and loamy subsoils that have rapid to moderate permeability. These soils have a well aerated root zone that is thicker than 80 inches. The available water capacity averages very low to low in the root zone. Natural fertility is low to moderate and crop response to fertilization is moderate. Rainfall is rapidly absorbed and there is little runoff. The hazard of erosion is slight."

"cH2O", "3s4", "In normal years these soils do not have a seasonal high water table within 72 inches. These soils have severe limitations to cultivated crops. Droughtiness and rapid leaching of plant nutrients reduce the number of well adapted crops and the potential yields of plants that are adapted. The control of erosion is also a management concern. Nutrient management maximizes yields."

"eERO", "3s4", "Some erosion control measures are needed such as cultivating row crops on the contour in strips alternating with close growing, soil building crops. Crop rotations should include close growing, soil improving crops on the land at least two-thirds of the time. Soil improving cover crops and all crop residues should be left on the land."

"fIRR", "3s4", "Good yields of cultivated crops require irrigation: however irrigation is feasible for only a few high value crops and only where irrigation water is readily available. Where water for irrigation is readily available, increased yields of citrus crops makes irrigation feasible."

"gCIT", "3s4", "These soils are well suited to citrus crops where they are in places that are relatively free from freezing in winter. Trees should be planted so a good ground cover of close growing vegetation is maintained between the trees to protect the soils from blowing. Good yields of citrus fruit such as oranges and grapefruit can normally be obtained without irrigation. Nutrient management is needed for highest yields."

"hPAS", "3s4", "These soils are well suited to pastures and hay crops. Deep rooting hybrid bermudagrass and bahiagrasses grow well where nutrient management is practiced. These soils require light and frequent fertilizing and carefully controlled grazing to maintain vigorous plants. Production is occasionally reduced by extended droughts."

"iWMG", "3s4", "Water table management is not normally practiced on these soils."

3s5 Map Unit 20

"aSOI", "3s5", "This map unit consists of nearly level and gently sloping, somewhat poorly drained to moderately well drained 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 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", "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."

3s20 Map Unit 59

"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 Unit 8

"aSOI", "3s21", "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", "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 48 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."

3s22 Map Unit 7, 10

"aSOI", "3s22", "This map unit consists of nearly level and gently sloping, somewhat poorly drained to well drained soils on flood plains broad. These soils are occasionally flooded. They have sandy layers that are rapidly permeable to depths of more than 20 inches."

"bSAC", "3s22", "The root zone of these soils is limited by a seasonal high water table in wet seasons as well as droughtiness during periods of low rainfall. 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", "3s22", "In normal years these soils have a seasonal high water table at a depth of between 40 and 60 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. They are occasionally flooded for periods of brief duration."

"dCUL", "3s22", "These soils have severe limitations for cultivated crops. Droughtiness, flooding, and the rapid leaching of plant nutrients limit the choice of plants and reduces potential yields of adapted crops. If cropped, 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 maximize yields. Soil improving cover crops and all crop residues should be left on the land."

"eERO", "3s22", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "3s22", "Irrigation of high value crops is usually feasible where irrigation water is readily available."

"hPAS", "3s22", "These soils are only moderately suited to pastures and hay. Plants such as hybrid bermudagrass and bahiagrasses are adapted. These soils require nutrient management to maximize yields. Controlled grazing is needed to maintain vigorous plants for maximum yields."

"iWMG", "3s22", "Water table management is not normally practiced on these soils."

3s24 Map Unit 11, 27

"aSOI", "3s24", "This complex consists of nearly level to gently sloping soils on upland knolls and on broad, elevated, undulating karst landscapes. They have sandy surface and subsurface layers that are 10 to 80 inches thick, and moderately to slow permeable loamy subsoil."

"bSAC", "3s24", "These soils have a well aerated root zone that is limited by 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", "3s24", "In normal years these soils have a seasonal high water table at a depth of between 18 to 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", "3s24", "These soils have slight to severe limitations for cultivated crops due to droughtiness and wetness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. Wetness, the hazard of erosion, and a restricted root zone very severely limit the use for cultivated 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", "3s24", "Moderate erosion control measures such as cultivating row crops on the contour in alternate strips with cover crops are needed."

"fIRR", "3s24", "Irrigation of some high value crops such as tobacco is usually feasible where irrigation water is readily available."

"hPAS", "3s24", "These soils are slightly to 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", "3s24", "Water table management is not normally practiced on these soils."

3s25 Map Unit 15

"aSOI", "3s25", "This complex consists of sloping soils on uplands. They have sandy surface and subsurface layers that are 20 to 80 inches thick, and moderate permeable loamy subsoil layers."

"bSAC", "3s25", "These soils have a well aerated root zone that is limited by droughtiness during periods of low rainfall. The available water capacity averages 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 slight and the hazard of erosion on these areas is slight to moderate."

"cH2O", "3s25", "In normal years these soils have a seasonal high water table at a depth of between 48 to 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", "3s25", "These soils have slight limitations for cultivated crops due to droughtiness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crop and the potential yields of adapted crops. Yield can be maximized with nutrient management. Crop rotation 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", "3s25", "Moderate erosion control measures such as cultivating row crops on the contour in alternate strips with cover crops

"fIRR", "3s25", "Irrigation of some high value crops such as tobacco is usually feasible where irrigation water is readily available."

"hPAS", "3s25", "These soils are slightly to 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, minimized the effects of droughts and to maintain good ground cover to minimize erosion."

"iWMG", "3s25", "Water table management is not normally practiced on these soils."

3s30 Map Unit 17(Chiefland)

"aSOI", "3s30", "This complex consists of nearly level to gently sloping soils on upland knolls and on broad, elevated, undulating karst landscapes. They have sandy surface and subsurface layers that are 8 to 20 inches thick, and moderate to moderately rapid permeable loamy subsoil layers."

"bSAC", "3s30", "These soils have a well aerated root zone that is limited by droughtiness during periods of low rainfall. The available water capacity averages 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", "3s30", "In normal years these soils have no seasonal high water table within the depth of 72 inches."

"dCUL", "3s30", "These soils have severe limitations for cultivated crops due to droughtiness and wetness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. Wetness, the hazard of erosion, and a restricted root zone very severely limit the use for cultivated 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", "3s30", "Moderate erosion control measures such as cultivating row crops on the contour in alternate strips with cover crops are needed. Irrigation of some high value crops such as tobacco is usually feasible where irrigation water is readily available."

"hPAS", "3s30", "These soils are moderately well 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 cover to minimize erosion."

"iWMG", "3s30", "Water table management is not normally practiced on these soils."

3s31 Map Unit 18(Chiefland)

"aSOI", "3s31", "This complex consists of nearly level to gently sloping soils on upland knolls and on broad, elevated, undulating karst landscapes. They have sandy surface and subsurface layers that are 8 to 20 inches thick, and moderate to moderately rapid permeable loamy subsoil layers."

"bSAC", "3s31", "These soils have a well aerated root zone that is limited by droughtiness during periods of low rainfall. The available water capacity averages 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", "3s31", "In normal years these soils have no seasonal high water table within the depth of 72 inches. "

"dCUL", "3s31", "These soils have severe limitations for cultivated crops due to droughtiness and wetness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. Wetness, the hazard of erosion, and a restricted root zone very severely limit the use for cultivated 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", "Moderate erosion control measures such as cultivating row crops on the contour in alternate strips with cover crops are needed."

"fIRR", "3s31", "Irrigation of some high value crops such as tobacco is usually feasible where irrigation water is readily available."

"hPAS", "3s31", "These soils are moderately well 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 cover to minimize erosion."

"iWMG", "3s31", "Water table management is not normally practiced on these soils."

3s32 Map Unit 19(Chiefland)

"aSOI", "3s32", "This complex consists of nearly level to gently sloping soils on upland knolls and on broad, elevated, undulating karst landscapes. They have sandy surface and subsurface layers that are 8 to 20 inches thick, and moderate to moderately rapid permeable loamy subsoil layers."

"bSAC", "3s32", "These soils have a well aerated root zone that is limited by droughtiness during periods of low rainfall. The available water capacity averages 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", "3s32", "In normal years these soils have no seasonal high water table within the depth of 72 inches."

"dCUL", "3s32", "These soils have severe limitations for cultivated crops due to droughtiness and wetness. Droughtiness and the rapid leaching of plant nutrients limit the choice of crops and the potential yields of adapted crops. Wetness, the hazard of erosion, and a restricted root zone very severely limit the use for cultivated 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", "3s32", "Moderate erosion control measures such as cultivating row crops on the contour in alternate strips with cover crops are needed."

"fIRR", "3s32", "Irrigation of some high value crops such as tobacco is usually feasible where irrigation water is readily available."

"hPAS", "3s32", "These soils are moderately well 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 cover to minimize erosion."

"iWMG", "3s32", "Water table management is not normally practiced on these soils."

3w5 Map Unit 42

"aSOI", "3w5", "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 rapidly to moderately rapidly permeable sandy or loamy layers."

"bSAC", "3w5", "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", "3w5", "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", "3w5", "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", "3w5", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "3w5", "Crops produced on these soils are not normally irrigated."

"hPAS", "3w5", "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", "3w5", "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, 2, 26, 40

"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 60 inches over moderately to moderately rapidly permeable subsoil."

bSAC", "3w7", "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", "3w7", "In normal years these soils have a seasonal high water table at a depth of between 15 and 30 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."

"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."

3w23 Map Unit 47

"aSOI", "3w23", "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", "3w23", "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", "3w23", "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", "3w23", "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", "3w23", "Crops produced on these hydric soils do not normally need special erosion control practices."

"fIRR", "3w23", "Highest yields require irrigation during periods of low rainfall either subirrigated through a water table management system or by sprinklers."

"gCIT", "3w23", "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", "3w23", "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", "3w23", "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."

4e20 Map Unit 33

"aSOI", "4e20", "This map unit consists of nearly level, poorly drained soils in broad areas in the flatwoods along river floodplains. They have rapid permeable subsoil."

"bSAC", "4e20", "The root zone is limited by a seasonal high water table and by flooding. The available water capacity is high in the surface layer, very low in the subsurface layer, medium in the layer between the upper and the lower parts of the subsoil, and low in upper and lower parts of the subsoil. Natural fertility is low."

"eERO", "4e20", "Crops produced on these soils do not normally need special erosion control practices."

"fIRR", "4e20", "Crops produced on these soils are not normally irrigated."

"hPAS", "4e20", "These soils have severe limitations to pasture crops because of flooding. In their natural conditions, these soils are not suited to pasture grasses; however, with a total water table management system they are well suited to most grasses grown in the area. Nutrient management maximizes yields."

"iWMG", "4e20", "A total 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."

4s7 Map Units 3, 5, 29

"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 80 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 two-thirds 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."

"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 60

"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 two-thirds 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 9, 12, 16

"aSOI", "4s21", "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", "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 48 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 two-thirds 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."

4s27 Map Units 17, 18, 19

"aSOI", "4s27", "This map unit consists of nearly level to gently sloping well drained soils on low ridges. They have sandy surface and subsurface layers over loamy subsoils with rock at 20 inches or less."

"bSAC", "4s27", "These soils have well aerated root zones above the rock. The available water capacity averages low in the root zone. Rainfall is readily absorbed and there is little runoff. The hazard of erosion is moderate."

"cH2O", "4s27", "In normal years these soils have no seasonal high water table within 72 inches."

"dCUL", "4s27", "These soils have severe limitations for cultivated crops due to droughtiness and the depth to bedrock. 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 moderate. Yields can be maximized with nutrient management."

"eERO", "4s27", "Intensive erosion control measure are needed. They should consist of contour cultivation and bedding of row crops, alternating strips of row crops with cover crops, and crop rotations that maintain cover crops on the soil at least three-fourth of the time."

"hPAS", "4s27", "These soils are well suited to pastures and hay crops. Improved grasses such as hybrid bermudagrass, and bahiagrasses are well adapted. Several varieties of clovers are also well adapted where properly managed. High yields require nutrient management and controlled grazing to prevent overgrazing."

"iWMG", "4s27", "Water table management is not normally practiced on these soils."

4w5 Map Units 32, 37, 56

"aSOI", "4w5", "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 and a spodic horizon within 30 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 Map Units 48, 51, 53

"aSOI", "4w7", "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 60 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 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."

"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."

5w8 Map Unit 52

"aSOI", "5w8", "This map unit consists of nearly level, poorly to very poorly drained soils in depressions."

"bSAC", "5w8", "They have sandy layers more than 20 inches thick. These soils are all covered with shallow water much of the time. 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 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."

5w20 Map Unit 39

"aSOI", "5w20", "This map unit consists of nearly level, poorly drained soils on flood plains. They are saturated or flooded with water as a result of heavy and prolonged rain."

"bSAC", "5w20", "Wetness and ponding severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w20", "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 of ten flooding occurs in the winter and spring, but it may occur during any wet season."

"dCUL", "5w20", "These hydric soils are not suited to cultivated crops without an extensive water table management system."

"eERO", "5w20", "Erosion is not a management concern on crops produced on these hydric soils."

"fIRR", "5w20", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w20", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w20", "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."

5w21 Map Unit 41

"aSOI", "5w21", "This map unit consists of nearly level, poorly drained soils on flood plains. They are saturated or flooded with water as a result of heavy and prolonged rain. Wetness and ponding severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w21", "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 of ten flooding occurs in the winter and spring, but it may occur during any wet season."

"dCUL", "5w21", "These hydric soils are not suited to cultivated crops without an extensive water table management system."

"eERO", "5w21", "Erosion is not a management concern on crops produced on these hydric soils."

"fIRR", "5w21", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w21", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w21", "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."

5w29 Map Unit 49, 58

"aSOI", "5w29", "This map unit consists of nearly level, very poorly drained soils on flood plains. They are saturated or flooded with water much of the time."

"bSAC", "5w29", "Wetness and ponding severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w29", "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 of ten flooding occurs in the winter and spring, but it may occur during any wet season."

"dCUL", "5w29", "These hydric soils are not suited to cultivated crops without an extensive water table management system."

"eERO", "5w29", "Erosion is not a management concern on crops produced on these hydric soils."

"fIRR", "5w29", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w29", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w29", "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."

5w30 Map Units 54, 55

"aSOI", "5w30", "This map unit consists of nearly level, very poorly drained soils in depressions. They have a mucky surface layer and below with sandy layers more than 20 inches thick underlain with a loamy subsoil. These soils are all covered with shallow water much of the time."

"bSAC", "5w30", "Wetness and ponding severely limits the use of the root zone of these soils for agronomic crops."

"cH2O", "5w30", "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", "5w30", "These hydric soils are not suited to cultivated crops without an extensive water table management system."

"eERO", "5w30", "Erosion is not a management concern on crops produced on these hydric soils."

"fIRR", "5w30", "If cultivated, highest yields require irrigation either subirrigated through the extensive water table management system or by sprinklers."

"hPAS", "5w30", "These hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "5w30", "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."

6e4 Map Units 12, 28

"aSOI", "6e4", "This map unit consists of sloping and strongly sloping somewhat poorly drained soils on short side slopes of the uplands. They have sandy or loamy surface layers less than 20 inches thick, very slow permeable clayey subsoil layers, and limestone bedrock within 60 inches.

"bSAC", "6e4", "These soils have a root zone that is severely restricted by firm, very plastic subsoil. Water is perched within the surface layers for short periods during rainy seasons. A very limited number of crops are suited. The available water capacity of the surface layers is moderate to low. The surface layers become saturated during prolonged rains and surface runoff is rapid. This causes a very severe erosion hazard for unprotected areas."

"cH2O", "6e4", "In normal years these soils do not have a seasonal high water table within 72 inches of the surface."

"dCUL", "6e4", "These soils are not suited to cultivated crops. Slopes are too steep and too easily eroded. These soils should be maintained in permanent vegetative covers."

"ERO", "6e4", "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", "6e4", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "6e4", "These soils are poorly suited to pastures and hay crops. Adapted grasses such as hybrid bermudagrass and bahiagrass grow moderately well under careful management but harvestable yields are low because of the need to maintain a dense cover by use of a very restricted grazing program."

"iWMG", "6e4", "Water table management is not a normal practice on these soils because of the lack of cultivation and an available water source."

6s2 Map Units 4, 30

"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."

"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. 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."

"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."

6s7 Map Unit 36

"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."

6s20 Map Unit 6

"aSOI", "6s20", "This map unit consists of soils on disturbed areas. They have sandy layers more than 80 inches deep with a variable water table."

"bSAC", "6s20", "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."

"dCUL", "6s20", "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", "6s20", "If these soils are cultivated, erosion control measures are not normally needed."

"fIRR", "6s20", "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", "6s20", "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", "6s20", "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", "6s20", "Water table management is not normally practiced on these soils."

6s25 Map Unit 61

"aSOI", "6s25", "This map unit consists of nearly level to steep soils on areas used as dikes for water control. The soil materials are from adjacent canals and are variable; however, they are deep and predominately stratified sandy and limestone material."

"bSAC", "6s25", "This soil is not normally used for agricultural operations."

"cH20", "6s25", "In normal years these soils do not have a seasonal high water table within 72 inches of the surface."

"dCUL", "6s25", "These soils are too steep and erodible to be suited to cultivated crops."

"eERO", "6s25", "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", "6s25", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "6s25", "These soils are poorly suited to pastures due to steepness of the soil and the hazard of erosion."

"iWMG", "6s25", "Water table management is not a normal practice on these soils because of the lack of cultivation."

6s34 Map Units 22, 23

"aSOI", "6s34", "This map unit consists of nearly level, somewhat poorly drained soils on low ridges adjacent to drainageways and around swamps or depression. They have sandy layers to more than 40 inches deep. A layer 20 to 30 inches below the surface is weakly cemented with dark colored organic material."

"bSAC", "6s34", "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", "6s34", "In normal years these soils have a seasonal high water table at a depth of 25 to 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", "6s34", "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", "6s34", "If these soils are cultivated, erosion control measures are not normally needed."

"fIRR", "6s34", "Irrigation of high value crop is usually feasible where irrigation water is readily available. The rate of water application should be low enough to prevent runoff and erosion."

"hPAS", "6s34", "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", "6s34", "Water table management is not normally practiced on these soils."

6w3 Map Unit 57

"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 hydric soils are not suited to pasture or hay crops without an extensive water table management system."

"iWMG", "6w3", "Because of the slow internal movement of water, and the usual 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."

7w2 Map Unit 21, 45, 46, 55

"aSOI", "7w2", "This map unit consists of nearly level, very poorly drained organic soils in depressions and floodplains. 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."

7w3 Map Unit 38

"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."

7w35 Map Unit 46

"aSOI", "7w35", "This map unit consists of nearly level, very poorly drained organic soils in depressions and floodplains. They are organic soils. Some areas are underlain by loamy or clay subsoils."

"bSAC", "7w35", "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", "7w35", "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", "7w35", "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", "7w35", "If these soils are cultivated, erosion control measures are not normally needed."

"fIRR", "7w35", "Due to the lack of cultivation, irrigation is not a normal practice on these soils."

"hPAS", "7w35", "If water control measures are established, these soil would be moderately well to well suited to improve 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", "7w35", "Water table management is not a normal practice on these soils because of the lack of cultivation."

8e1 Map Unit 50

"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."

ECOLOGICAL COMMUNITIES

kRNG - Rangeland

IWLD - Wildlife

mWOD - Woodland

Longleaf Pine-Turkey Oak Hills - Map Units 3, 4, 5, 29, 30, 59, 60

"kRNG", "04", "Range plant production is very low on this soil. The plant community consists of a dense woody understory, which is seldom grazed by livestock. The dominate forage is pineland threeawn. This soil is in the Sand Pine Scrub range site."

"IWLD", "04", "This Longleaf Pine - Turkey Oak Hills site is suited to deer and turkey, especially as escape cover. Many birds inhabit the area including warblers, towhees, flycatchers, 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", "04", "This Longleaf Pine - Turkey Oak Hills site has a moderately high potential for commercial production of wood and timber. The soils create moderate equipment limitations and moderate seedling mortality problems. Commercial species suited to planting and their potential annual growth in cords are as follows; Sand pine, 1.2 to 1.0. Slash pine, 1.2 to 1.0. Loblolly pine, 1.0 to 0.8. Longleaf pine, 0.6 to 0.5."

Mixed Hardwood and Pine – Map Units 11(Bonneau part), 12(Bonneau part), 13, 14, 15(Bonneau part), 16(Bonneau part), 20, 25, 31, 34, 35, 40, 43, 44

"kRNG", "05", "This Mixed Hardwood and Pine 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", "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 Units 22, 23, 32, 33, 36, 37, 39, 42, 48*, 49*, 56

"kRNG", "07", "This North Florida Flatwoods range site has the potential for producing significant amounts of high quality forage from chalky bluestem, indiagrass, and panicums. Sites in excellent condition produce 3000 to 5500 pounds per acre annually. Five to 15 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", "07", "This North 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. This site is also well suited to bobcat, raccoons, opossums, and skunks. It is poorly suited to dove."

"mWOD", "07", "This North 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, 1.0 to 0.8. Longleaf pine, 0.6 to 0.4."

Upland Hardwood Hammocks – Map Units 1, 2, 7, 8, 9, 10, 11(Blanton, Ichetucknee parts) 12(Blanton, Ichetucknee parts), 15(Blanton part), 16(Blanton part), 17, 18, 19, 24, 26, 27, 28

"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."

Cypress Swamp – Map Units 54*, 57*, 58*

"kRNG", "17", "This Cypress Swamp site has little or no range value."

"IWLD", "17", "This community is very important for wildlife refuge areas and as a turkey roosting area. It is well suited for waterfowl and wading birds. Aquatic animals may be found in large numbers. The permanent residents of cypress heads are relatively few, but much of the wildlife of the flatwoods is dependant on these ponds for breeding purposes."

"mWOD", "17", "Commercial wood production is not recommended. Extensive drainage would be required, thereby destroying this community."

Swamp Hardwoods – Map Units 41, 45*, 46*, 47, 48*, 49*, 52*, 53*, 55*, 57*, 58*

"kRNG", "21", "This Swamp Hardwoods site has little or no range value."

"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."

Shrub Bog - Bay Swamp – Map Units 21, 38, 45*, 46*, 51*, 52*, 53*, 55*

"kRNG", "22", "This Shrub Bog - Bay Swamp site has little or no range value. It does offer protection for animals during wet, cold weather."

"IWLD", "22", "This Shrub Bog - Bay Swamp site is well suited to a variety of frogs, salamanders, and crayfish as well as snakes and raccoons. It also is highly valued as escape cover for game animals such as deer, turkey, and quail. This cover is also important to the black bear and panther. Wading birds also use the site as roosting and nesting habitat."

"mWOD", "22", "This Shrub Bog - Bay Swamp site is generally not used for the commercial production of wood and timber; however, it does potential.. The soils create severe equipment limitations and severe seedling mortality rates. Commercial species suited to planting in areas with adequate surface drainage and their potential annual growth in cords are as follows: Slash pine, 1.5 to 1.3. Loblolly pine, 1.2 to 1.0. Cottonwood, 0.8 to 0.6. Sweetgum and sycamore are additional species suitable to plant."

Pitcher Plant Bogs – Map Unit 51*

"kRNG", "23", "This Pitcher Plant Bogs range site has the potential for producing significant amounts of high quality forage from threeawns, panicums, and other forbs. 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", "23", "This Pitcher Plant Bog site is moderately suited to quail and other birds and to snakes. It is fair habitat for deer, raccoons, and armadillos. Wildlife production is limited due to the low diversity of plant species and growth forms."

"mWOD", "23", "This Pitcher Plant Bog site is seldom used for the commercial production of wood and timber. The soils create very severe limitations that are difficult to overcome."

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

URBAN USES

oURB - Urban Use Statement

pSEP – Septic Tank Absorption

qLRS – Local Roads and Streets

Map Units 1, 2, 8, 9, 11, 12, 13, 14, 15, 16, 20, 21, 24, 25, 26, 34, 35, 36, 40, 45, 47, 49, 52, 54, 55, 56, 58

"oURB", "01", "This soil is generally unsuited to most urban uses because of flooding. Dwellings and small buildings can be constructed on pilings, however, access may be limited during flood events and structural integrity of the building may be threatened by currents and floating debris. Landscaping considerations should include use of species that are adapted to withstanding flood water."

"pSEP", "01", "This soil has very severe limitations for septic tank absorption fields. Flooding interferes with absorption of effluent from septic tanks and poses risks of contamination to adjacent surface waters."

"qLRS", "01", "This soil has severe limitations for local roads and streets. Road surfaces and bases may be eroded by floodwaters and travel is dangerous or impractical during flood events."

Map Unit 46

"oURB", "02", "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", "02", "This soil has severe limitations for septic tank absorption fields. Pondered 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 22, 23, 28, 32, 33, 37, 39, 42, 48, 51, 53, 61

"oURB", "04", "Suitability is poor for most urban uses because of a seasonal high water table within 40 inches of the soil surface, and fine textured soil material near the soil surface. 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 and fine textured soils."

"pSEP", "04", "This soil has severe limitations for septic tank absorption fields. High water table, bedrock, and fine textured soil material 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 or fine textured soil layers can be excavated and replaced with suitable soil material. Absorption field laterals should be installed downslope from dwellings."

"qLRS", "04", "This soil has severe 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. An engineer or soil scientist should be consulted to determine the shrink-swell potential of near surface soil material. Additional design precautions can be planned if shrink-swell is determined to be a concern."

Map Unit 41

"oURB", "07", "Suitability is poor for most urban uses because of a seasonal high water table and limestone bedrock within 40 inches of the soil surface. House and 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 fine textured soils."

"pSEP", "07", "This soil has severe limitations for septic tank absorption fields. High water tables interfere with the absorption of effluent from septic tanks. This poses risks of contamination to adjacent surface waters and system failure. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Absorption field laterals should be installed on a slight downslope gradient. Absorption fields should be placed downslope from dwellings."

"qLRS", "07", "This soil has severe 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. An engineer or soil scientist should be consulted to determine the shrink-swell potential of near surface soil material. Additional design precautions can be planned if shrink-swell is determined to be a concern."

Map Units 3, 4, 5, 29, 30, 59

"oURB", "14", "This soil is moderately suited to most urban land uses. Because of the very rapid permeability of this soil, careful selection of on-site waste disposal areas can help prevent contamination of shallow groundwater and adjacent surface waters. Irrigation, mulching, and fertilizing help establish and maintain lawns and landscaping plants."

"pSEP", "14", "Septic tank absorption fields should be placed away from slopes that grade down towards surface water bodies. Home site density should be decreased, especially in areas near surface water bodies. Absorption fields can be placed on contour in sloping areas, or slope can be reduced by cut and fill."

"qLRS", "14", "Reducing slope by cut and fill will lower erosion on home sites and areas adjacent to roads."

Map Units 7, 57, 60

"oURB", "21", "This soil has a low suitability for urban uses because of the low strength of the organic layers and the likelihood of subsidence if drained."

"pSEP", "21", "This soil has severe limitations for any on-site waste disposal system due to wetness and subsidence of the organic soil material."

"qLRS", "21", "This soil has severe limitations for local roads and streets due to wetness and subsidence of the organic soil material. Excavating and filling is required to assure roads function properly."

WATER QUALITY: PESTICIDE AND NUTRIENT MANAGEMENT

sWQ – Water Quality Statement

tPES – Pesticide Management Statement

uNUT – Nutrient Management Statement

Map Units 3, 4, 5, 28, 29, 30, 59

"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) 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", "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."

Map Units 31, 44

"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", "While any approved pesticide listed in the guide can be used, the applicator should consider for use pesticides with a high RLPI value, a larger value Health Advisory Level (HAL or HALEQ) value, and a larger Aquatic Toxicity value. Special emphasis should be placed on a surface water body, sinkhole formations, or in deep sandy soils. The local CES office can assist you with proper pesticide selection using the above and other pest control criteria. Read and follow pesticide labels, it is the law. (Refer to Pesticide Management Job Sheet Number 3.)"

"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 1, 2, 7, 8, 9, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 32, 33, 34, 35, 36, 37, 39, 40, 41, 42, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61

"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."