United States Department of Agriculture

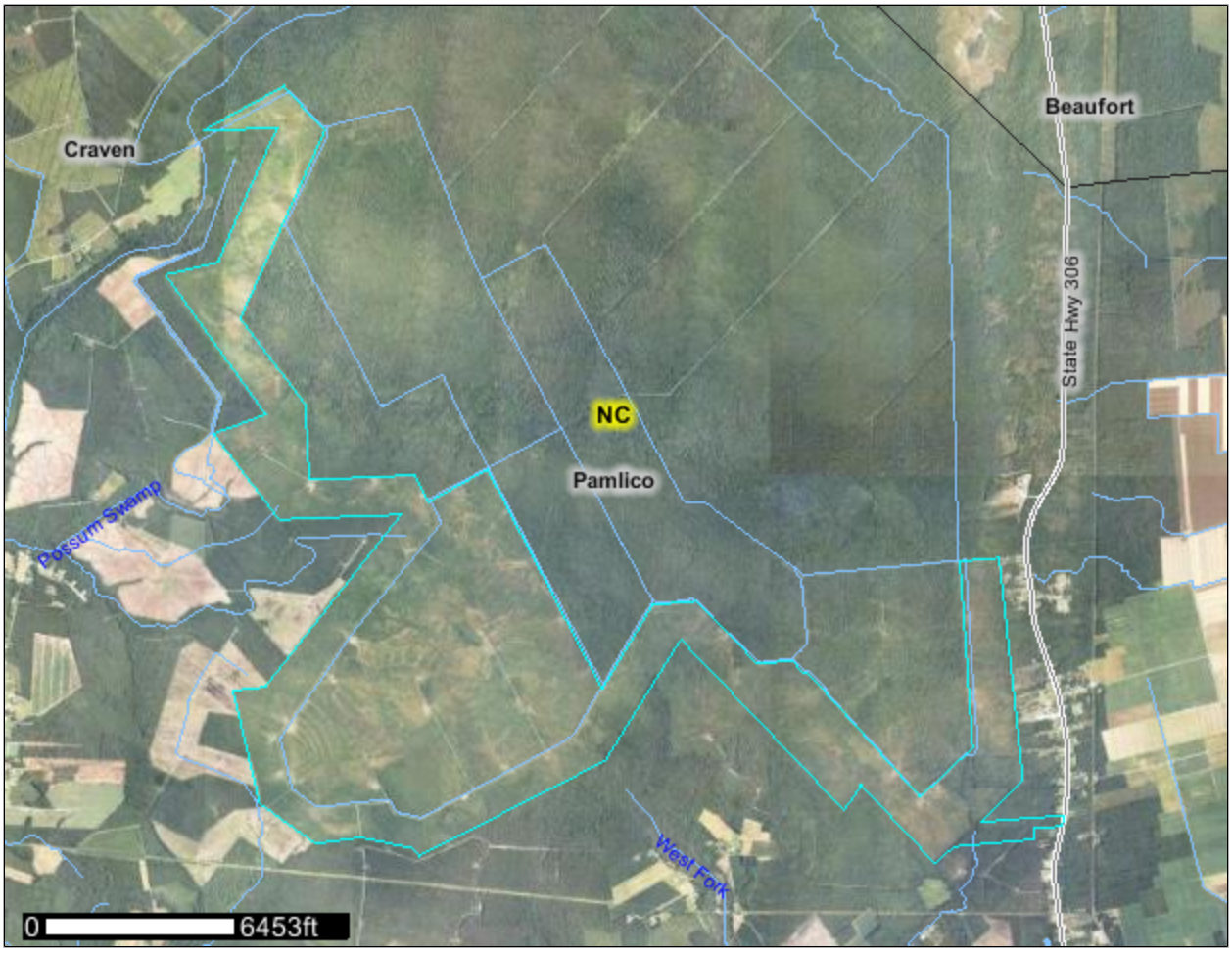
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Pamlico County, North Carolina

Mark Hall Tract



October 4, 2012

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

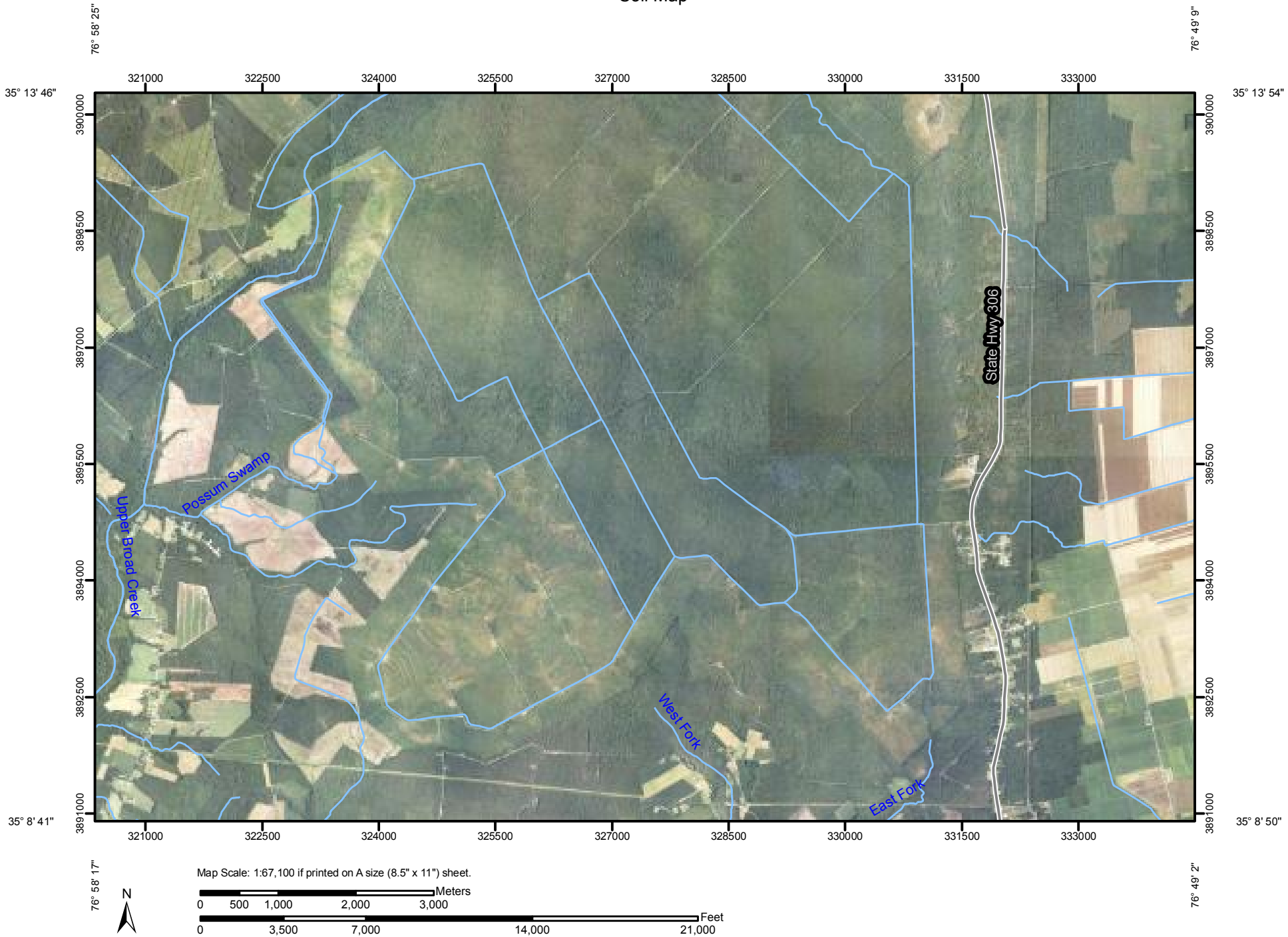
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:67,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pamlico County, North Carolina
Survey Area Data: Version 12, Jul 12, 2012

Date(s) aerial images were photographed: 7/9/2006; 7/10/2006; 9/18/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Pamlico County, North Carolina (NC137)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
CT	Croatan muck	338.8	8.4%
GoA	Goldsboro loamy fine sand, 0 to 2 percent slopes	3.5	0.1%
La	Leaf silt loam	495.7	12.3%
Ln	Leon sand	47.0	1.2%
Ly	Lynchburg fine sandy loam	0.1	0.0%
MA	Masontown loam, frequently flooded	31.9	0.8%
Pa	Paxville mucky fine sandy loam	2,913.0	72.4%
Ra	Rains fine sandy loam	185.2	4.6%
Ru	Rutlege mucky loamy fine sand	4.8	0.1%
Th	Tomahawk loamy sand, 0 to 3 percent slopes	2.1	0.1%
Totals for Area of Interest		**4,022.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with

some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Pamlico County, North Carolina

CT—Croatan muck

Map Unit Setting

Elevation: 20 to 160 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition

Croatan, undrained, and similar soils: 80 percent
Croatan, drained, and similar soils: 10 percent

Description of Croatan, Undrained

Setting

Landform: Pocosins
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Woody organic material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 16.1 inches)

Interpretive groups

Land capability (nonirrigated): 7w

Typical profile

0 to 28 inches: Muck
28 to 33 inches: Mucky sandy loam
33 to 60 inches: Sandy clay loam
60 to 80 inches: Loamy sand

Description of Croatan, Drained

Setting

Landform: Pocosins
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Woody organic material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)

Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 16.1 inches)

Interpretive groups

Land capability (nonirrigated): 4w

Typical profile

0 to 28 inches: Muck
28 to 33 inches: Mucky sandy loam
33 to 60 inches: Sandy clay loam
60 to 80 inches: Loamy sand

GoA—Goldsboro loamy fine sand, 0 to 2 percent slopes

Map Unit Setting

Elevation: 20 to 330 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition

Goldsboro and similar soils: 90 percent
Minor components: 6 percent

Description of Goldsboro

Setting

Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.7 inches)

Interpretive groups

Land capability (nonirrigated): 2w

Typical profile

0 to 10 inches: Loamy fine sand
10 to 13 inches: Fine sandy loam

13 to 72 inches: Sandy clay loam
72 to 80 inches: Clay loam

Minor Components

Rains, undrained
Percent of map unit: 5 percent
Landform: Flats on marine terraces, carolina bays on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear

Muckalee, undrained
Percent of map unit: 1 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear

La—Leaf silt loam

Map Unit Setting
Elevation: 20 to 160 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition
Leaf, drained, and similar soils: 80 percent
Leaf, undrained, and similar soils: 10 percent

Description of Leaf, Drained

Setting
Landform: Flats on broad interstream divides, terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey marine deposits

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 12.0 inches)

Interpretive groups

Land capability (nonirrigated): 4w

Typical profile

0 to 6 inches: Silt loam
6 to 67 inches: Clay
67 to 80 inches: Clay loam

Description of Leaf, Undrained

Setting

Landform: Flats on broad interstream divides, terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 12.0 inches)

Interpretive groups

Land capability (nonirrigated): 6w

Typical profile

0 to 6 inches: Silt loam
6 to 67 inches: Clay
67 to 80 inches: Clay loam

Ln—Leon sand

Map Unit Setting

Elevation: 0 to 20 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days

Map Unit Composition

Leon and similar soils: 85 percent

Description of Leon

Setting

Landform: Flats on marine terraces
Down-slope shape: Linear

Across-slope shape: Concave
Parent material: Sandy fluviomarine deposits and/or eolian sands

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.0 inches)

Interpretive groups

Land capability (nonirrigated): 4w

Typical profile

0 to 6 inches: Sand
6 to 22 inches: Sand
22 to 58 inches: Fine sand
58 to 80 inches: Fine sand

Ly—Lynchburg fine sandy loam

Map Unit Setting

Elevation: 20 to 330 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition

Lynchburg, drained, and similar soils: 85 percent
Lynchburg, undrained, and similar soils: 5 percent
Minor components: 7 percent

Description of Lynchburg, Drained

Setting

Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None

Frequency of ponding: None
Available water capacity: Moderate (about 7.4 inches)

Interpretive groups
Land capability (nonirrigated): 2w

Typical profile
0 to 9 inches: Fine sandy loam
9 to 14 inches: Sandy loam
14 to 65 inches: Sandy clay loam
65 to 80 inches: Clay

Description of Lynchburg, Undrained

Setting
Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.4 inches)

Interpretive groups
Land capability (nonirrigated): 3w

Typical profile
0 to 9 inches: Fine sandy loam
9 to 14 inches: Sandy loam
14 to 65 inches: Sandy clay loam
65 to 80 inches: Clay

Minor Components

Rains, undrained
Percent of map unit: 5 percent
Landform: Flats on marine terraces, carolina bays on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear

Woodington, undrained
Percent of map unit: 2 percent
Landform: Flats on marine terraces, depressions on marine terraces, broad interstream divides on marine terraces
Down-slope shape: Linear
Across-slope shape: Concave

MA—Masontown loam, frequently flooded

Map Unit Setting

Elevation: 0 to 20 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days

Map Unit Composition

Masontown, undrained, and similar soils: 85 percent

Description of Masontown, Undrained

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Available water capacity: Moderate (about 9.0 inches)

Interpretive groups

Land capability (nonirrigated): 7w

Typical profile

0 to 27 inches: Mucky loam
27 to 32 inches: Fine sandy loam
32 to 80 inches: Sand

Pa—Paxville mucky fine sandy loam

Map Unit Setting

Elevation: 20 to 160 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition

Paxville, ponded, and similar soils: 80 percent
Paxville, drained, and similar soils: 10 percent

Description of Paxville, Ponded

Setting

Landform: Flats on marine terraces, carolina bays on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: High (about 9.2 inches)

Interpretive groups

Land capability (nonirrigated): 6w

Typical profile

0 to 15 inches: Mucky fine sandy loam
15 to 47 inches: Sandy clay loam
47 to 52 inches: Fine sandy loam
52 to 80 inches: Sand

Description of Paxville, Drained

Setting

Landform: Flats on marine terraces, carolina bays on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.2 inches)

Interpretive groups

Land capability (nonirrigated): 3w

Typical profile

0 to 15 inches: Mucky fine sandy loam
15 to 47 inches: Sandy clay loam
47 to 52 inches: Fine sandy loam
52 to 80 inches: Sand

Ra—Rains fine sandy loam

Map Unit Setting

Elevation: 20 to 160 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition

Rains, drained, and similar soils: 80 percent
Rains, undrained, and similar soils: 10 percent

Description of Rains, Drained

Setting

Landform: Flats on marine terraces, carolina bays on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.4 inches)

Interpretive groups

Land capability (nonirrigated): 3w

Typical profile

0 to 7 inches: Fine sandy loam
7 to 12 inches: Fine sandy loam
12 to 20 inches: Sandy loam
20 to 62 inches: Sandy clay loam
62 to 85 inches: Sandy clay loam

Description of Rains, Undrained

Setting

Landform: Flats on marine terraces, carolina bays on marine terraces, broad interstream divides on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.4 inches)

Interpretive groups

Land capability (nonirrigated): 4w

Typical profile

0 to 7 inches: Fine sandy loam
7 to 12 inches: Fine sandy loam
12 to 20 inches: Sandy loam
20 to 62 inches: Sandy clay loam
62 to 85 inches: Sandy clay loam

Ru—Rutlege mucky loamy fine sand

Map Unit Setting

Elevation: 20 to 160 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition

Rutlege, undrained, and similar soils: 80 percent

Description of Rutlege, Undrained

Setting

Landform: Flats, drainageways, depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy fluviomarine deposits and/or eolian sands

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water capacity: Moderate (about 7.0 inches)

Interpretive groups

Land capability (nonirrigated): 5w

Typical profile

0 to 20 inches: Mucky loamy fine sand
20 to 80 inches: Sand

Th—Tomahawk loamy sand, 0 to 3 percent slopes

Map Unit Setting

Elevation: 20 to 160 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days

Map Unit Composition

Tomahawk and similar soils: 80 percent
Minor components: 7 percent

Description of Tomahawk

Setting

Landform: Broad interstream divides on marine terraces, flats on marine terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits and/or eolian sands

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.0 inches)

Interpretive groups

Land capability (nonirrigated): 2w

Typical profile

0 to 7 inches: Loamy fine sand
7 to 25 inches: Loamy fine sand
25 to 44 inches: Sandy loam
44 to 80 inches: Loamy sand

Minor Components

Leon

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Down-slope shape: Linear
Across-slope shape: Concave

Woodington, undrained

Percent of map unit: 2 percent
Landform: Flats on marine terraces, depressions on marine terraces, broad interstream divides on marine terraces
Down-slope shape: Linear
Across-slope shape: Concave

Icaria, undrained

Percent of map unit: 2 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Land Management

This folder contains a collection of tabular reports that present soil interpretations related to land management. The reports (tables) include all selected map units and components for each map unit, limiting features and interpretive ratings. Land management interpretations are tools designed to guide the user in evaluating existing conditions in planning and predicting the soil response to various land management practices, for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture, and rangeland. Example interpretations include suitability for a variety of irrigation practices, log landings, haul roads and major skid trails, equipment operability, site preparation, suitability for hand and mechanical planting, potential erosion hazard associated with various practices, and ratings for fencing and waterline installation.

Forestland Planting and Harvesting

This table can help forestland owners or managers plan the use of soils for wood crops. Interpretive ratings are given for the soils according to the limitations that affect planting and harvesting on forestland. The ratings are both verbal and numerical.

Rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design,

extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service, National forestry manual.

Report—Forestland Planting and Harvesting

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Forestland Planting and Harvesting– Pamlico County, North Carolina							
Map symbol and soil name	**Pct. of map unit**	**Suitability for hand planting**		**Suitability for mechanical planting**		**Suitability for use of harvesting equipment**	
		Rating class and limiting features	**Value**	**Rating class and limiting features**	**Value**	**Rating class and limiting features**	**Value**
CT—Croatan muck							
Croatan, undrained	80	Moderately suited		Moderately suited		Poorly suited	
		Sandiness	0.50	Sandiness	0.50	Low strength	1.00
						Wetness	1.00
Croatan, drained	10	Moderately suited		Moderately suited		Poorly suited	
		Sandiness	0.50	Sandiness	0.50	Low strength	1.00

Forestland Planting and Harvesting– Pamlico County, North Carolina							
Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GoA—Goldsboro loamy fine sand, 0 to 2 percent slopes							
Goldsboro	90	Well suited		Well suited		Well suited	
La—Leaf silt loam							
Leaf, drained	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Leaf, undrained	10	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Ln—Leon sand							
Leon	85	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Ly—Lynchburg fine sandy loam							
Lynchburg, drained	85	Well suited		Well suited		Well suited	
Lynchburg, undrained	5	Well suited		Well suited		Well suited	
MA—Masontown loam, frequently flooded							
Masontown, undrained	85	Well suited		Well suited		Poorly suited	
						Wetness	1.00
						Low strength	0.50
Pa—Paxville mucky fine sandy loam							
Paxville, ponded	80	Moderately suited		Moderately suited		Poorly suited	
		Wetness	0.50	Wetness	0.50	Wetness	1.00
Paxville, drained	10	Well suited		Well suited		Well suited	
Ra—Rains fine sandy loam							
Rains, drained	80	Well suited		Well suited		Well suited	
Rains, undrained	10	Well suited		Well suited		Well suited	
Ru—Rutlege mucky loamy fine sand							
Rutlege, undrained	80	Well suited		Well suited		Well suited	
Th—Tomahawk loamy sand, 0 to 3 percent slopes							
Tomahawk	80	Well suited		Well suited		Well suited	

Forestland Site Preparation

This table can help forestland owners or managers plan the use of soils for wood crops. Interpretive ratings are given for the soils according to the limitations that affect site preparation on forestland. The ratings are both verbal and numerical.

Rating class terms indicate the degree to which the soils are suited to site preparation. *Well suited* indicates that the soil has features that are favorable for the specified kind of site preparation and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified kind of site preparation. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified kind of site preparation or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified kind of site preparation (1.00) and the point at which the soil feature is not a limitation (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service, (National forestry manual.

Report—Forestland Site Preparation

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Forestland Site Preparation– Pamlico County, North Carolina					
Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CT—Croatan muck					
Croatan, undrained	80	Well suited		Unsuited	
				Wetness	1.00
Croatan, drained	10	Well suited		Well suited	
GoA—Goldsboro loamy fine sand, 0 to 2 percent slopes					
Goldsboro	90	Well suited		Well suited	
La—Leaf silt loam					
Leaf, drained	80	Well suited		Well suited	
Leaf, undrained	10	Well suited		Well suited	
Ln—Leon sand					
Leon	85	Well suited		Well suited	
Ly—Lynchburg fine sandy loam					
Lynchburg, drained	85	Well suited		Well suited	
Lynchburg, undrained	5	Well suited		Well suited	
MA—Masontown loam, frequently flooded					
Masontown, undrained	85	Well suited		Unsuited	
				Wetness	1.00
Pa—Paxville mucky fine sandy loam					
Paxville, ponded	80	Poorly suited		Unsuited	
		Wetness	0.50	Wetness	1.00
Paxville, drained	10	Well suited		Well suited	
Ra—Rains fine sandy loam					
Rains, drained	80	Well suited		Well suited	
Rains, undrained	10	Well suited		Well suited	
Ru—Rutlege mucky loamy fine sand					
Rutlege, undrained	80	Well suited		Well suited	
Th—Tomahawk loamy sand, 0 to 3 percent slopes					
Tomahawk	80	Well suited		Well suited	

Vegetative Productivity

This folder contains a collection of tabular reports that present vegetative productivity data. The reports (tables) include all selected map units and components for each

map unit. Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

Forestland Productivity

This table can help forestland owners or managers plan the use of soils for wood crops. It shows the potential productivity of the soils for wood crops.

Potential productivity of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service, National forestry manual.

Report—Forestland Productivity

Forestland Productivity– Pamlico County, North Carolina				
Map unit symbol and soil name	**Potential productivity**			**Trees to manage**
	Common trees	**Site Index**	**Volume of wood fiber**	
			Cu ft/ac	
CT—Croatan muck				
Croatan, undrained	Atlantic white cedar	—	—	Baldcypress, Sweetgum, Water tupelo
	Baldcypress	—	—	
	Red maple	—	—	
	Swamp tupelo	—	—	
	Sweetgum	—	—	
	Water tupelo	60	86	
Croatan, drained	Loblolly pine	70	86	Loblolly pine, Pond pine
	Pond pine	55	29	
	Sweetgum	70	57	
GoA—Goldsboro loamy fine sand, 0 to 2 percent slopes				
Goldsboro	Loblolly pine	88	127	Loblolly pine
	Red maple	—	—	
	Southern red oak	—	—	
	Sweetgum	—	—	
	Water oak	—	—	
	White oak	—	—	
	Yellow-poplar	—	—	
La—Leaf silt loam				
Leaf, drained	Loblolly pine	90	129	Loblolly pine, Sweetgum
	Sweetgum	90	100	
Leaf, undrained	Loblolly pine	90	129	—
	Sweetgum	90	100	
Ln—Leon sand				
Leon	Loblolly pine	75	100	Longleaf pine
	Longleaf pine	70	86	

Forestland Productivity– Pamlico County, North Carolina				
Map unit symbol and soil name	**Potential productivity**			**Trees to manage**
	Common trees	**Site Index**	**Volume of wood fiber**	
			Cu ft/ac	
Ly—Lynchburg fine sandy loam				
Lynchburg, drained	Blackgum	—	—	American sycamore, Loblolly pine, Sweetgum
	Loblolly pine	86	123	
	Southern red oak	—	—	
	Sweetgum	90	106	
	White oak	—	—	
	Yellow-poplar	92	93	
Lynchburg, undrained	Blackgum	—	—	American sycamore, Loblolly pine, Sweetgum
	Loblolly pine	86	123	
	Southern red oak	—	—	
	Sweetgum	90	106	
	White oak	—	—	
	Yellow-poplar	92	93	
MA—Masontown loam, frequently flooded				
Masontown, undrained	American elm	—	—	Baldcypress
	Baldcypress	—	—	
	Green ash	—	—	
	Loblolly pine	97	143	
	Swamp chestnut oak	—	—	
	Swamp tupelo	—	—	
	Sweetgum	111	172	
	Water oak	103	100	
	Willow oak	—	—	
Pa—Paxville mucky fine sandy loam				
Paxville, ponded	Baldcypress	—	—	American sycamore, Loblolly pine, Water tupelo
	Loblolly pine	96	143	
	Pond pine	77	57	
	Water oak	90	86	
	Water tupelo	—	—	
Paxville, drained	—	—	—	—
Ra—Rains fine sandy loam				
Rains, drained	—	—	—	—
Rains, undrained	Loblolly pine	94	143	Loblolly pine, Sweetgum
	Sweetgum	90	131	

Forestland Productivity– Pamlico County, North Carolina				
Map unit symbol and soil name	**Potential productivity**			**Trees to manage**
	Common trees	**Site Index**	**Volume of wood fiber**	
			Cu ft/ac	
Ru—Rutlege mucky loamy fine sand				
Rutlege, undrained	Baldcypress	100	86	Loblolly pine
	Loblolly pine	90	129	
	Pin oak	85	72	
	Sweetgum	90	100	
Th—Tomahawk loamy sand, 0 to 3 percent slopes				
Tomahawk	Loblolly pine	80	114	Loblolly pine, Longleaf pine
	Longleaf pine	70	86	

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