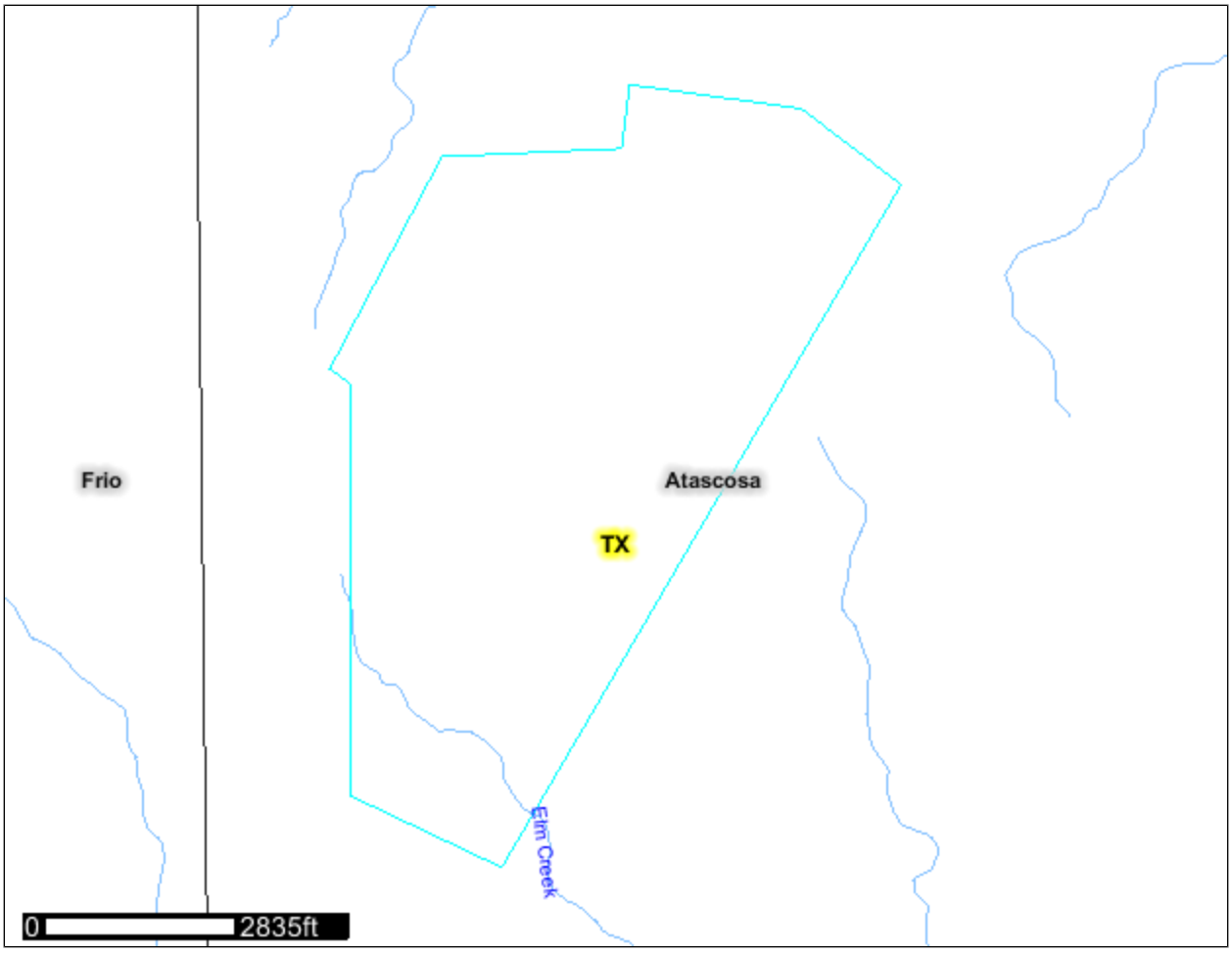
United States Department of Agriculture

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 Atascosa County, Texas



March 31, 2010

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.

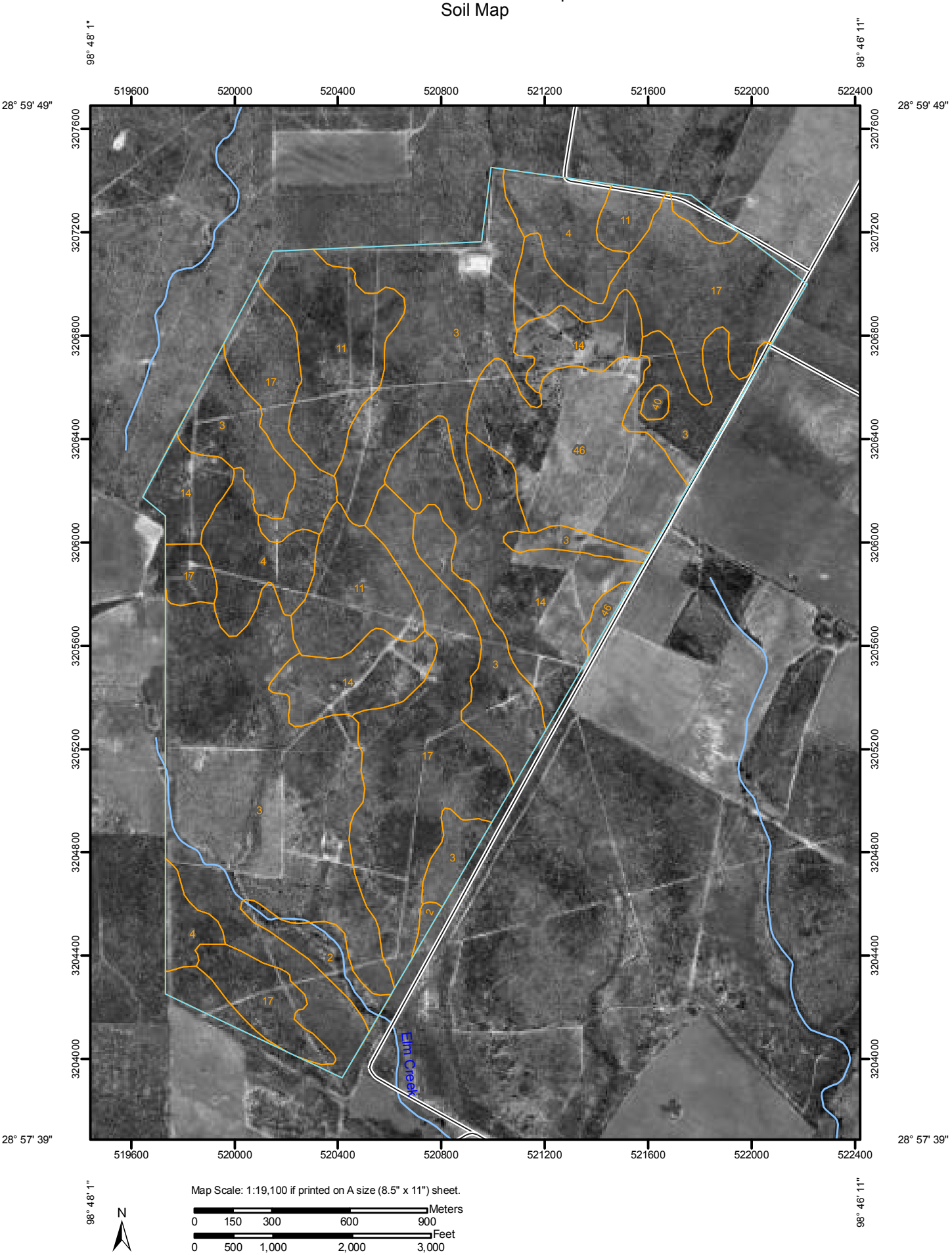
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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 Scale: 1:19,100 if printed on A size (8.5" x 11") sheet.

N

Meters
0 150 300 600 900

Feet
0 500 1,000 2,000 3,000

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
- Oceans
- Streams and Canals

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

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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

Soil Survey Area: Atascosa County, Texas
Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: Data not available.

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

Atascosa County, Texas (TX013)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	127.4	10.0%
14	Floresville fine sandy loam, 1 to 3 percent slopes	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	287.7	22.5%
40	Tiocano clay	2.7	0.2%
46	Wilco loamy fine sand, 0 to 3 percent slopes	103.5	8.1%
Totals for Area of Interest		**1,277.2**	**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.

Atascosa County, Texas

2—Amphion sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

Elevation: 500 to 1,500 feet
Mean annual precipitation: 26 to 34 inches
Mean annual air temperature: 70 to 73 degrees F
Frost-free period: 240 to 290 days

Map Unit Composition

Amphion and similar soils: 85 percent
Minor components: 15 percent

Description of Amphion

Setting

Landform: Interfluves
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Clayey marine deposits

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability (nonirrigated): 2c
Ecological site: Clay Loam 25-35" PZ (R083AY629TX)

Typical profile

0 to 10 inches: Sandy clay loam
10 to 62 inches: Sandy clay
62 to 85 inches: Clay

Minor Components

Unnamed, minor components

Percent of map unit: 14 percent

Tiocano

Percent of map unit: 1 percent
Landform: Depressions

3—Amphion sandy clay loam, 1 to 3 percent slopes

Map Unit Setting

Elevation: 500 to 1,500 feet
Mean annual precipitation: 26 to 34 inches
Mean annual air temperature: 70 to 73 degrees F
Frost-free period: 240 to 290 days

Map Unit Composition

Amphion and similar soils: 85 percent
Minor components: 15 percent

Description of Amphion

Setting

Landform: Interfluves
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Clayey marine deposits

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability (nonirrigated): 2e
Ecological site: Clay Loam 25-35" PZ (R083AY629TX)

Typical profile

0 to 10 inches: Sandy clay loam
10 to 62 inches: Clay
62 to 85 inches: Clay

Minor Components

Unnamed, minor components

Percent of map unit: 14 percent

Tiocano

Percent of map unit: 1 percent
Landform: Depressions

4—Campbellton loam, 1 to 3 percent slopes

Map Unit Setting

Elevation: 500 to 750 feet
Mean annual precipitation: 23 to 30 inches
Mean annual air temperature: 70 to 73 degrees F
Frost-free period: 260 to 290 days

Map Unit Composition

Campbellton and similar soils: 85 percent
Minor components: 15 percent

Description of Campbellton

Setting

Landform: Interfluves, ridges
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from shale

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 10 percent
Maximum salinity: Very slightly saline to moderately saline (4.0 to 16.0 mmhos/cm)
Available water capacity: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability (nonirrigated): 2e
Ecological site: Saline Clay Loam 18-35" PZ (R083BY433TX)

Typical profile

0 to 12 inches: Loam
12 to 47 inches: Clay
47 to 80 inches: Clay loam

Minor Components

Unnamed, minor components
Percent of map unit: 15 percent

11—Elmendorf-Denhawken complex, 1 to 4 percent slopes

Map Unit Setting
Elevation: 150 to 750 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 70 to 73 degrees F
Frost-free period: 270 to 300 days

Map Unit Composition
Elmendorf and similar soils: 54 percent
Denhawken and similar soils: 46 percent

Description of Elmendorf

Setting
Landform: Interfluves
Microfeatures of landform position: Circular gilgai
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Calcareous clayey residuum weathered from shale

Properties and qualities
Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 25 percent
Maximum salinity: Nonsaline to moderately saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 35.0
Available water capacity: High (about 10.2 inches)

Interpretive groups
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 2e
Ecological site: Clay Loam 25-35" PZ (R083CY447TX)

Typical profile
0 to 16 inches: Clay loam
16 to 52 inches: Clay
52 to 73 inches: Clay

Description of Denhawken

Setting

Landform: Interfluves
Microfeatures of landform position: Circular gilgai
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous clayey residuum weathered from shale

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 15 percent
Maximum salinity: Nonsaline to moderately saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability (nonirrigated): 3e
Ecological site: Clay Loam 25-35" PZ (R083CY447TX)

Typical profile

0 to 8 inches: Clay loam
8 to 18 inches: Clay loam
18 to 48 inches: Clay
48 to 65 inches: Clay
65 to 80 inches: Clay

14—Floresville fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

Elevation: 200 to 500 feet
Mean annual precipitation: 26 to 32 inches
Mean annual air temperature: 70 to 73 degrees F
Frost-free period: 275 to 300 days

Map Unit Composition

Floresville and similar soils: 85 percent
Minor components: 15 percent

Description of Floresville

Setting

Landform: Interfluves
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Available water capacity: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability (nonirrigated): 2e
Ecological site: Tight Sandy Loam 21-35" PZ (R083AY412TX)

Typical profile

0 to 12 inches: Fine sandy loam
12 to 38 inches: Clay
38 to 72 inches: Sandy clay loam

Minor Components

Unnamed, minor components

Percent of map unit: 14 percent

Tiocano

Percent of map unit: 1 percent
Landform: Depressions

17—Hanis sandy clay loam, 1 to 3 percent slopes

Map Unit Setting

Elevation: 300 to 800 feet
Mean annual precipitation: 25 to 30 inches
Mean annual air temperature: 66 to 73 degrees F
Frost-free period: 260 to 285 days

Map Unit Composition

Hanis and similar soils: 85 percent
Minor components: 15 percent

Description of Hanis

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy alluvium

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability (nonirrigated): 2e
Ecological site: Clay Loam 25-35" PZ (R083AY629TX)

Typical profile

0 to 12 inches: Sandy clay loam
12 to 46 inches: Clay
46 to 72 inches: Sandy clay loam

Minor Components

Unnamed, minor components

Percent of map unit: 14 percent

Tiocano

Percent of map unit: 1 percent
Landform: Depressions

40—Tiocano clay

Map Unit Setting

Elevation: 100 to 900 feet
Mean annual precipitation: 18 to 40 inches
Mean annual air temperature: 70 to 73 degrees F
Frost-free period: 250 to 320 days

Map Unit Composition

Tiocano and similar soils: 51 percent

Tiocano and similar soils: 44 percent
Minor components: 5 percent

Description of Tiocano

Setting

Landform: Closed depressions on interfluves
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat 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 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water capacity: Moderate (about 9.0 inches)

Interpretive groups

Land capability (nonirrigated): 6w
Ecological site: LAKEBED 20-35" PZ (R083AY394TX)

Typical profile

0 to 10 inches: Clay
10 to 66 inches: Clay

Description of Tiocano

Setting

Landform: Closed depressions on interfluves
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat 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 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 9.0 inches)

Interpretive groups

Land capability (nonirrigated): 4w
Ecological site: LAKEBED 20-35" PZ (R083AY394TX)

Typical profile
0 to 18 inches: Clay
18 to 80 inches: Clay

Minor Components

Unnamed, minor components
Percent of map unit: 5 percent

46—Wilco loamy fine sand, 0 to 3 percent slopes

Map Unit Setting
Elevation: 300 to 800 feet
Mean annual precipitation: 26 to 32 inches
Mean annual air temperature: 70 to 73 degrees F
Frost-free period: 275 to 300 days

Map Unit Composition
Wilco and similar soils: 85 percent
Minor components: 15 percent

Description of Wilco

Setting
Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy fluviomarine deposits

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Available water capacity: Moderate (about 7.7 inches)

Interpretive groups
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 3e
Ecological site: LOAMY SAND 25-35" PZ (R083AY396TX)

Typical profile
0 to 16 inches: Loamy fine sand
16 to 33 inches: Sandy clay
33 to 50 inches: Sandy clay loam

50 to 62 inches: Fine sandy loam

Minor Components

Unnamed, minor components
Percent of map unit: 14 percent

Tiocano
Percent of map unit: 1 percent
Landform: Depressions

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Vegetative Productivity

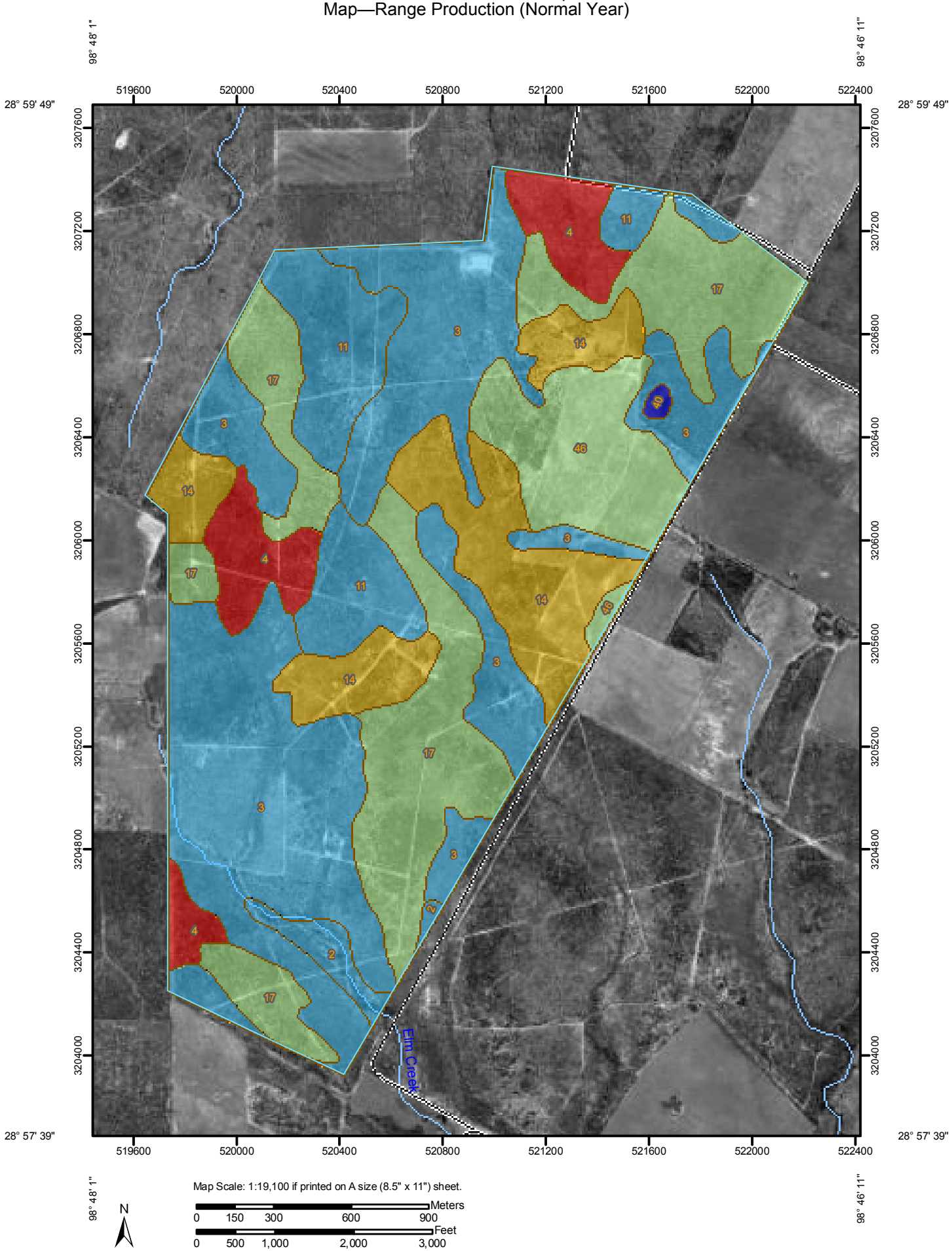
Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain 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.

Range Production (Normal Year)

Total range production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation. In a normal year, growing conditions are about average. Yields are adjusted to a common percent of air-dry moisture content.

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Custom Soil Resource Report
Map—Range Production (Normal Year)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- <= 2295
- > 2295 AND <= 2635
- > 2635 AND <= 2975
- > 2975 AND <= 3570
- > 3570 AND <= 3800
- Not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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

Soil Survey Area: Atascosa County, Texas
Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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.

Table—Range Production (Normal Year)

Range Production (Normal Year)— Summary by Map Unit — Atascosa County, Texas				
Map unit symbol	**Map unit name**	**Rating (pounds per acre per year)**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	3570	19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	3570	474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	2295	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	3500	127.4	10.0%
14	Floresville fine sandy loam, 1 to 3 percent slopes	2635	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	2805	287.7	22.5%
40	Tiocano clay	3800	2.7	0.2%
46	Wilco loamy fine sand, 0 to 3 percent slopes	2975	103.5	8.1%
Totals for Area of Interest			**1,277.2**	**100.0%**

Rating Options—Range Production (Normal Year)

Units of Measure: pounds per acre per year

Aggregation Method: Weighted Average

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: Yes

Yields of Non-Irrigated Crops (Map Unit): Grain sorghum (Bu)

These are the estimated average yields per acre that can be expected of selected nonirrigated crops under a high level of management. In any given year, yields may be higher or lower than those indicated because of variations in rainfall and other climatic factors.

In the database, some states maintain crop yield data by individual map unit component and others maintain the data at the map unit level. Attributes are included in this application for both, although only one or the other is likely to contain data for any given geographic area. This attribute uses data maintained at the map unit level.

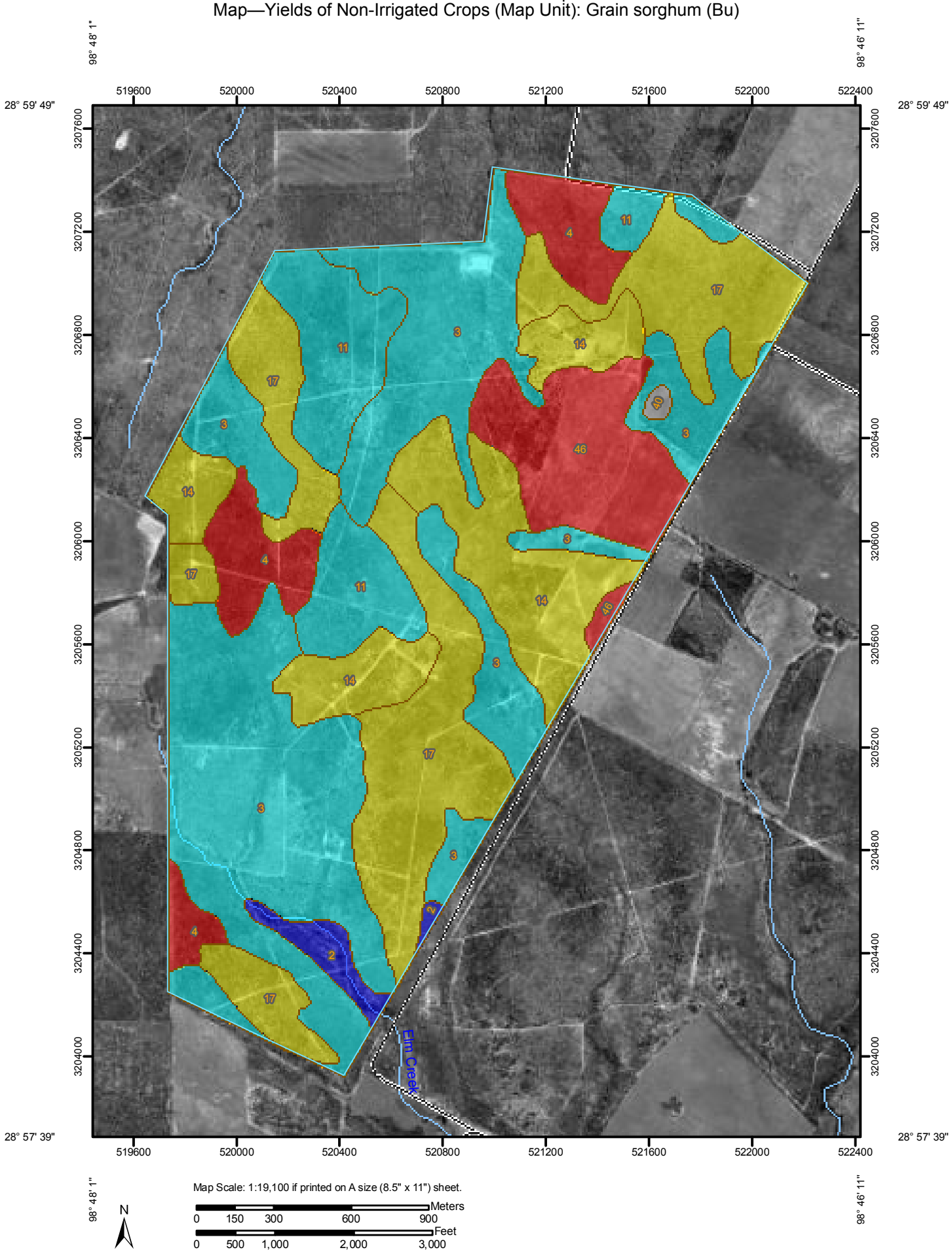
The yields are actually recorded as three separate values in the database. A low value and a high value indicate the range for the soil component. A "representative" value indicates the expected value for the component. For these yields, only the representative value is used.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby areas and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for the selected crop. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Custom Soil Resource Report
Map—Yields of Non-Irrigated Crops (Map Unit): Grain sorghum (Bu)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- <= 40
- > 40 AND <= 45
- > 45 AND <= 50
- > 50 AND <= 55
- Not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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Table—Yields of Non-Irrigated Crops (Map Unit): Grain sorghum (Bu)

Yields of Non-Irrigated Crops (Map Unit): Grain sorghum (Bu)— Summary by Map Unit — Atascosa County, Texas				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	55.00	19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	50.00	474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	40.00	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	50.00	127.4	10.0%
14	Floresville fine sandy loam, 1 to 3 percent slopes	45.00	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	45.00	287.7	22.5%
40	Tiocano clay		2.7	0.2%
46	Wilco loamy fine sand, 0 to 3 percent slopes	40.00	103.5	8.1%
Totals for Area of Interest			**1,277.2**	**100.0%**

Rating Options—Yields of Non-Irrigated Crops (Map Unit): Grain sorghum (Bu)

Crop: Grain sorghum

Yield Units: Bu

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Higher

Water Management

Water Management interpretations are tools for evaluating the potential of the soil in the application of various water management practices. Example interpretations include pond reservoir area, embankments, dikes, levees, and excavated ponds.

Pond Reservoir Areas

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

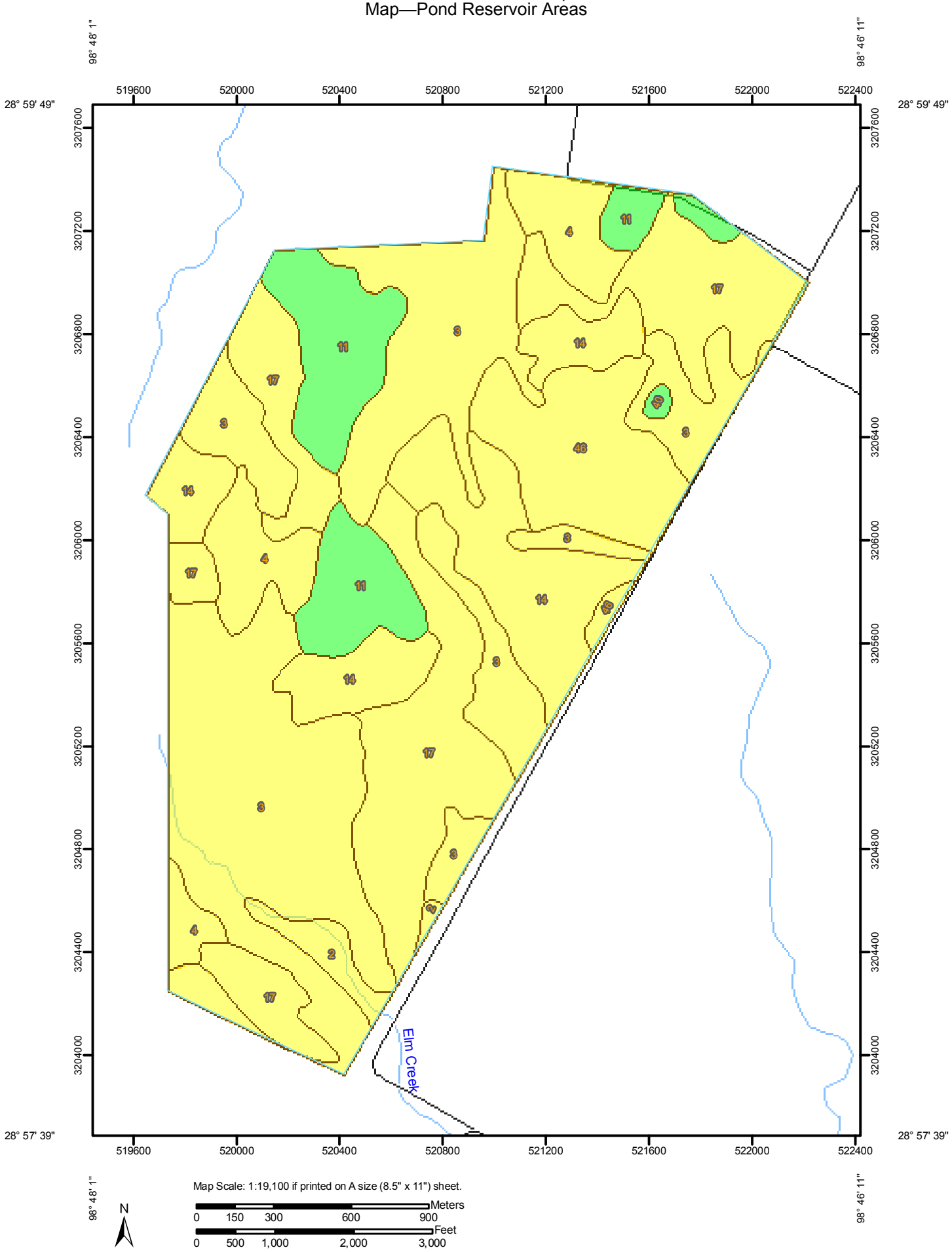
The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings 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 use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Pond Reservoir Areas



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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

Soil Survey Area: Atascosa County, Texas
Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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Tables—Pond Reservoir Areas

Pond Reservoir Areas— Summary by Map Unit — Atascosa County, Texas						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
2	Amphion sandy clay loam, 0 to 1 percent slopes	Somewhat limited	Amphion (85%)	Seepage (0.03)	19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	Somewhat limited	Amphion (85%)	Seepage (0.03)	474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	Somewhat limited	Campbellton (85%)	Seepage (0.70)	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	Not limited	Elmendorf (54%)		127.4	10.0%
			Denhawken (46%)			
14	Floresville fine sandy loam, 1 to 3 percent slopes	Somewhat limited	Floresville (85%)	Seepage (0.03)	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	Somewhat limited	Hanis (85%)	Seepage (0.70)	287.7	22.5%
40	Tiocano clay	Not limited	Tiocano (51%)		2.7	0.2%
			Tiocano (44%)			
46	Wilco loamy fine sand, 0 to 3 percent slopes	Somewhat limited	Wilco (85%)	Seepage (0.03)	103.5	8.1%
Totals for Area of Interest					**1,277.2**	**100.0%**

Pond Reservoir Areas— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Somewhat limited	1,147.2	89.8%
Not limited	130.1	10.2%
Totals for Area of Interest	**1,277.2**	**100.0%**

Rating Options—Pond Reservoir Areas

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Wildlife Management

Wildlife Management interpretations are tools for evaluating the suitability of the soil for various components of wildlife habitat, and as habitat of different types or species of wildlife. Example interpretations include crawfish aquaculture, burrowing animals and reptiles, grasses and legumes for food and cover, and freshwater wetland plants.

Domestic Grasses and Legumes, Food and Cover (TX)

Wildlife habitat suitability ratings provide a tool for habitat management. Soils vary in their capacity to produce various plants that are elements of wildlife habitat. The ratings reflect the ability of the soil to support specific wildlife habitat elements. Restrictive soil features guide the user in predicting how the soil will respond to management. The ratings are for the soils in their natural condition. The present land use, the existing vegetation, water sources, and the presence or absence of wildlife in the area are not considered in the ratings. These items should be considered in site evaluation and planning.

This interpretation is to be used in planning the production of nonirrigated domestic grasses and legumes used for wildlife food and cover. These plants are components of habitat for targeted and nontargeted wildlife species. The plant species selected are generally perennial but include some common annuals. They are self-perpetuating after the initial stand establishment and thus will tend to minimize the long-term risk of soil erosion. Tillage may increase the potential for soil erosion during stand establishment, and conservation practices may be required to minimize the hazard. If appropriate, fertilizer and lime may be added to improve plant growth and thus increase the production of wildlife food and cover. Depending on the objectives of the user, the plant species selection and management techniques will dictate whether the habitat will be dominantly used for food, cover, or both. The height and structure of the plant species are important considerations in addressing wildlife cover relationships.

The final selection of a site and of suitable species of domestic grasses and legumes for wildlife food and cover is determined by soil limitations that affect plant establishment, survival, growth, and vigor. This interpretation identifies the limitations that will have the most significant effect on the grasses and legumes as habitat elements.

The soil properties and qualities important in the management of domestic grasses and legumes for wildlife food and cover are texture of the surface layer, content of organic matter, content of rock fragments, soil depth, available water capacity, wetness, ponding, flooding, saturated hydraulic conductivity (Ksat), slope, salts, sodium adsorption ratio, and susceptibility to erosion. The soil properties and qualities that influence establishment are soil depth, flooding, and ponding. The features that affect performance and plant growth are salinity, sodium adsorption ratio, and available water capacity.

The degree of limitation is expressed as a numeric index between 0.0 (nonlimiting condition) and 1.0 (most limiting condition). If an individual soil property within 150 centimeters (60 inches) of the soil surface has a degree of limitation of more than 0.0, then that soil property is limiting and the soil restrictive feature is identified. The overall interpretive rating assigned is the maximum degree of limitation of each soil interpretive property considered in the rating process. Less restrictive soil features are those having a degree of limitation less than the maximum. They are identified to provide the user with additional information about the ability of the soil to support the interpretation. The less restrictive features could be important factors where the major restrictive features are overcome by design and application modifications.

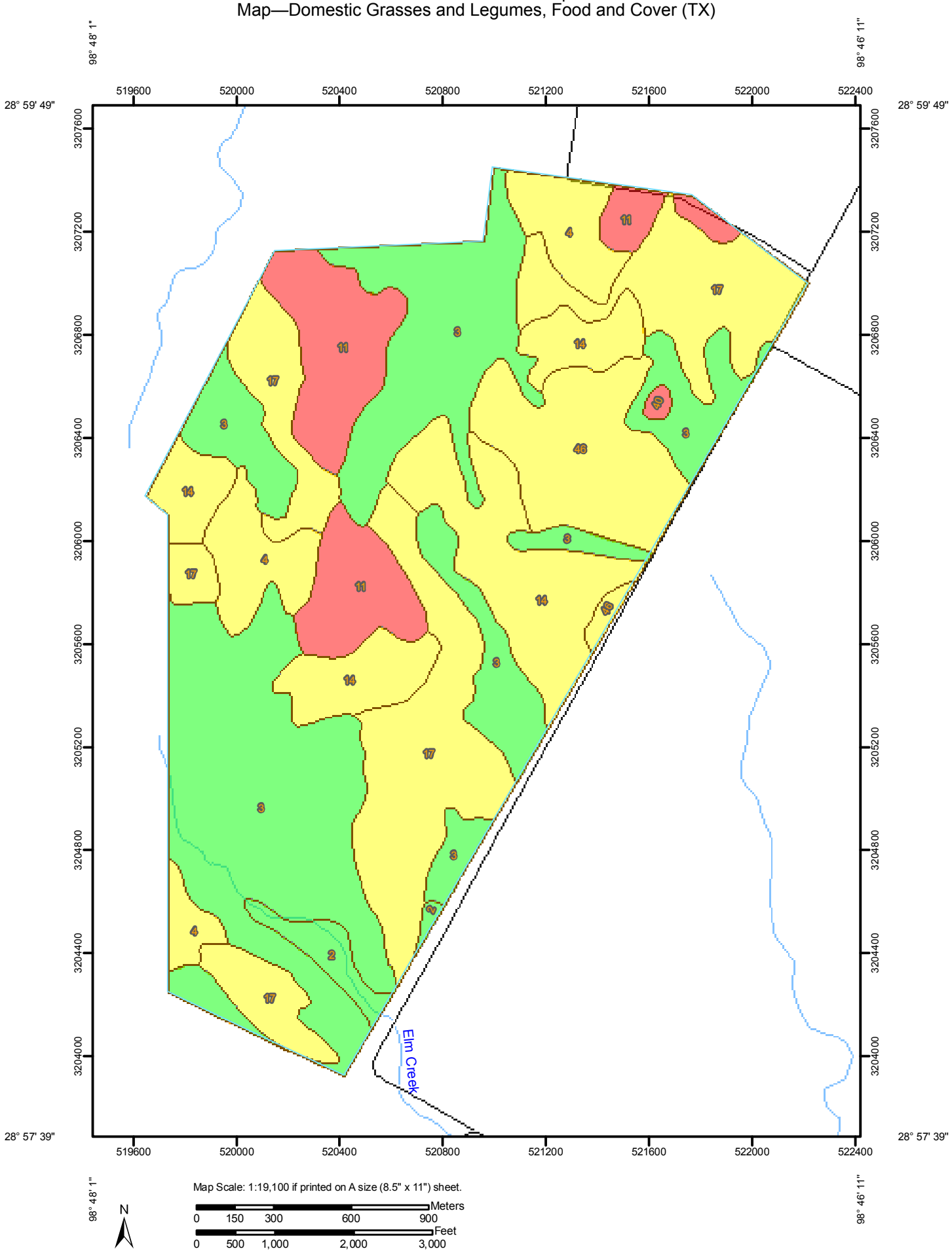
Soils are assigned to interpretive rating classes according to their degree of limitation. These classes are "not limited" (a degree of limitation of 0.0), "somewhat limited" (a degree of limitation of more than 0.0 and less than 1.0), and "very limited" (a degree of limitation of 1.0).

Soils that are rated "not limited" have no limitations and are favorable for locally adapted domestic grasses and legumes that are used as elements of wildlife habitat. The species may be grown individually or in combination with other adapted species. A rating of "somewhat limited" indicates that the soil has restrictions affecting the growth of climatically adapted habitat plants and that some restrictive features may limit the full potential of plant growth. These conditions may restrict the selection of some of the adapted species to be grown individually or in combination with other adapted species. A rating of "very limited" indicates that the soil characteristics limit establishment, growth, maintenance, or performance and thus affect the value of the grasses and legumes as food or cover for wildlife.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Domestic Grasses and Legumes, Food and Cover (TX)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Very limited
- Somewhat limited
- Not limited
- not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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Soil Survey Area: Atascosa County, Texas
Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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Tables—Domestic Grasses and Legumes, Food and Cover (TX)

Domestic Grasses and Legumes, Food and Cover (TX)— Summary by Map Unit — Atascosa County, Texas						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	Not limited	Amphion (85%)		19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	Not limited	Amphion (85%)		474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	Somewhat limited	Campbellton (85%)	Excess salt (0.13)	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	Very limited	Elmendorf (54%)	Potentially or highly erodible (1.00)	127.4	10.0%
				Percs slowly (0.50)		
			Denhawken (46%)	Potentially or highly erodible (1.00)		
				Too clayey (0.93)		
				Percs slowly (0.50)		
14	Floresville fine sandy loam, 1 to 3 percent slopes	Somewhat limited	Floresville (85%)	Percs slowly (0.33)	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	Somewhat limited	Hanis (85%)	Too clayey (0.01)	287.7	22.5%
40	Tiocano clay	Very limited	Tiocano (51%)	Ponding (1.00)	2.7	0.2%
				Depth to saturated zone (1.00)		
				Too clayey (1.00)		
				Percs slowly (0.50)		
			Tiocano (44%)	Depth to saturated zone (1.00)		
				Too clayey (1.00)		
				Ponding (0.50)		
				Percs slowly (0.50)		
46	Wilco loamy fine sand, 0 to 3 percent slopes	Somewhat limited	Wilco (85%)	Too sandy (0.50)	103.5	8.1%
				Percs slowly (0.33)		
Totals for Area of Interest					**1,277.2**	**100.0%**

Domestic Grasses and Legumes, Food and Cover (TX)— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Somewhat limited	652.8	51.1%
Not limited	494.4	38.7%
Very limited	130.1	10.2%
Totals for Area of Interest	**1,277.2**	**100.0%**

Rating Options—Domestic Grasses and Legumes, Food and Cover (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Grain and Seed Crops for Food and Cover (TX)

Grain and seed crops for food and cover (TX) interpretation provide a tool for assessing a soil's limitations for use as either primary or secondary wildlife habitat. This interpretation is useful for planning the production of nonirrigated commercial grain and other seed or vegetation producing annuals for wildlife food and cover. The ratings are for the soils in their natural condition and do not consider present land use, existing vegetation, water sources, and the presence or absence of wildlife in the area.

The interpretation ranks the soil as a medium for growing annual crops for wildlife food and cover. The use of annual tillage may increase the potential for soil erosion and, therefore, conservation practices are required to minimize the hazard. If appropriate, the soils may receive supplemental fertilization and liming to increase vegetation growth rates and seed production. Depending upon the objectives of the user, the plant species selection and management techniques will dictate whether the habitat will be dominantly used for food, cover, or both. The height and structure of the vegetation species are important considerations in addressing wildlife cover relationships.

The interpretation provides ratings and identifies the dominant soil characteristics that limit the site for growing crops. This information allows the user to plan and develop alternative sites and cropping systems that best meets the wildlife habitat requirements.

The interpretive ratings identify the dominant soil characteristic that limits the site for crop production. The soil properties and qualities important for grain and seed production are surface texture, organic matter content, rock fragment, soil depth, drainage, available water holding capacity, wetness, ponding, flooding, saturated hydraulic conductivity (Ksat), slope, salts, sodium adsorption ratio, and susceptibility to erosion.

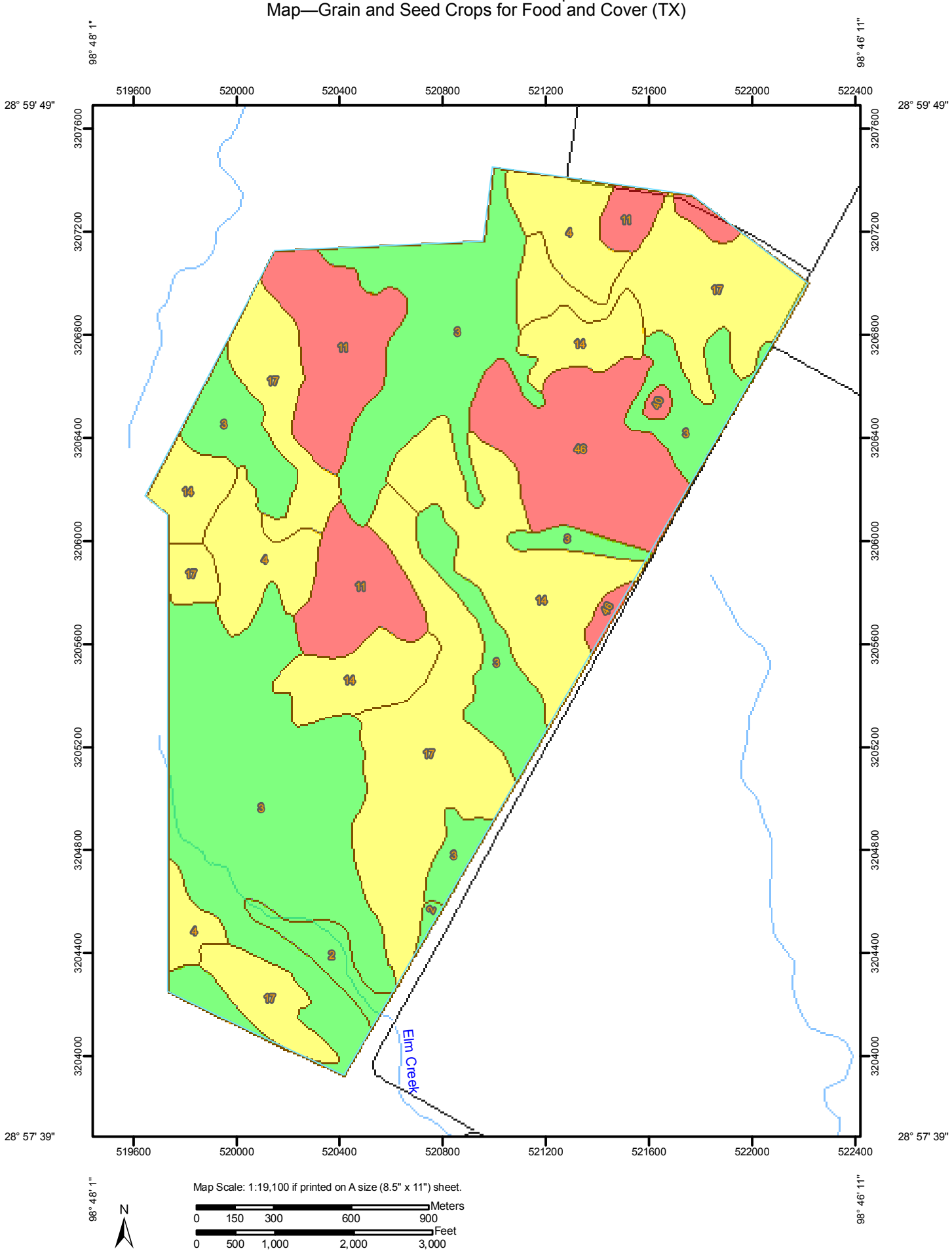
Numerical ratings or values indicate the relative severity or degree of limitation for individual soil restrictive (limiting) features. Ratings are shown for limiting soil features as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00), and the point at which the soil feature is not a limitation (0.00). Non-limiting soil features with a numerical rating of zero are not listed.

Rating class terms indicate the extent to which the soils are limited by the soil features that affect the soil interpretation. Verbal soil rating classes are based on the highest

numerical rating for the most limiting soil feature(s) considered in the rating process. The "not limited" class (numerical value for the most restrictive feature = 0) indicates that the soil has no limiting features for the specified use. The "somewhat limited" class (numerical value for the most restrictive feature .01 to .99) indicates that the soil has limiting features for the specified use that can be overcome with proper planning, design, installation, and management. The effort required to overcome a soil limitation increases as the numerical rating increases. The "very limited" class (numerical value for the most restrictive feature = 1.00) indicates that the soil has one or more very limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

Custom Soil Resource Report
Map—Grain and Seed Crops for Food and Cover (TX)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Very limited
- Somewhat limited
- Not limited
- not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 if printed on A size (8.5" × 11") sheet.

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

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

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Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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Tables—Grain and Seed Crops for Food and Cover (TX)

Grain and Seed Crops for Food and Cover (TX)— Summary by Map Unit — Atascosa County, Texas						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	Not limited	Amphion (85%)		19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	Not limited	Amphion (85%)		474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	Somewhat limited	Campbellton (85%)	Excess salt (0.13)	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	Very limited	Elmendorf (54%)	Potentially or highly erodible (1.00)	127.4	10.0%
				Percs slowly (0.50)		
			Denhawken (46%)	Potentially or highly erodible (1.00)		
				Too clayey (0.93)		
				Percs slowly (0.50)		
14	Floresville fine sandy loam, 1 to 3 percent slopes	Somewhat limited	Floresville (85%)	Percs slowly (0.33)	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	Somewhat limited	Hanis (85%)	Too clayey (0.01)	287.7	22.5%
40	Tiocano clay	Very limited	Tiocano (51%)	Ponding (1.00)	2.7	0.2%
				Depth to saturated zone (1.00)		
				Too clayey (1.00)		
				Percs slowly (0.50)		
			Tiocano (44%)	Depth to saturated zone (1.00)		
				Too clayey (1.00)		
				Ponding (0.50)		
				Percs slowly (0.50)		
46	Wilco loamy fine sand, 0 to 3 percent slopes	Very limited	Wilco (85%)	HEL wind (1.00)	103.5	8.1%
				Too sandy (0.50)		
				Percs slowly (0.33)		
				Droughty (0.29)		
Totals for Area of Interest					**1,277.2**	**100.0%**

Grain and Seed Crops for Food and Cover (TX)— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Somewhat limited	549.3	43.0%
Not limited	494.4	38.7%

Grain and Seed Crops for Food and Cover (TX)— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Very limited	233.7	18.3%
Totals for Area of Interest	**1,277.2**	**100.0%**

Rating Options—Grain and Seed Crops for Food and Cover (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Irrigated Grain and Seed Crops for Food and Cover (TX)

Irrigated grain and seed crops for food and cover (TX) interpretation provides a tool to assess a soil's limitations for use as either primary or secondary wildlife habitat. This interpretation is useful for planning the production of irrigated food and cover plots for wildlife forage and cover. The ratings are for the soils in their natural condition and do not consider present land use, existing vegetation, water sources, and the presence or absence of wildlife in the area.

The interpretation ranks the soil as a medium for growing irrigated grain and seed crops for wildlife food and cover. The annual species selected are usually planted at least once each year. Soil erosion may be a potential hazard and erosion reducing conservation practices should be included in the management system. If appropriate, the soils may receive supplemental fertilization and liming to increase vegetation and seed production. Depending upon the objectives of the manager, the plant species selection and management techniques will dictate whether the habitat will be dominantly used for food, cover, or both. The height and structure of the plant species are important considerations in addressing wildlife cover relationships.

The interpretation provides ratings and identifies the dominant soil characteristics that limit the site for growing irrigated crops. This information allows the user to plan and develop alternative sites and to identify woody riparian species that best meet the wildlife habitat requirements.

The interpretive ratings identify the dominant soil characteristic that limits the site for irrigated crop production. The soil properties and qualities important in the design and management of irrigated food and cover plots are surface texture, organic matter content, rock fragment, soil depth, available water holding capacity, wetness, ponding, flooding, saturated hydraulic conductivity (Ksat), slope, salts, sodium adsorption ratio, and susceptibility to erosion.

Numerical ratings or values indicate the relative severity or degree of limitation for individual soil restrictive (limiting) features. Ratings are shown for limiting soil features 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 use (1.00), and

the point at which the soil feature is not a limitation (0.00). Non-limiting soil features with a numerical rating of zero are not listed.

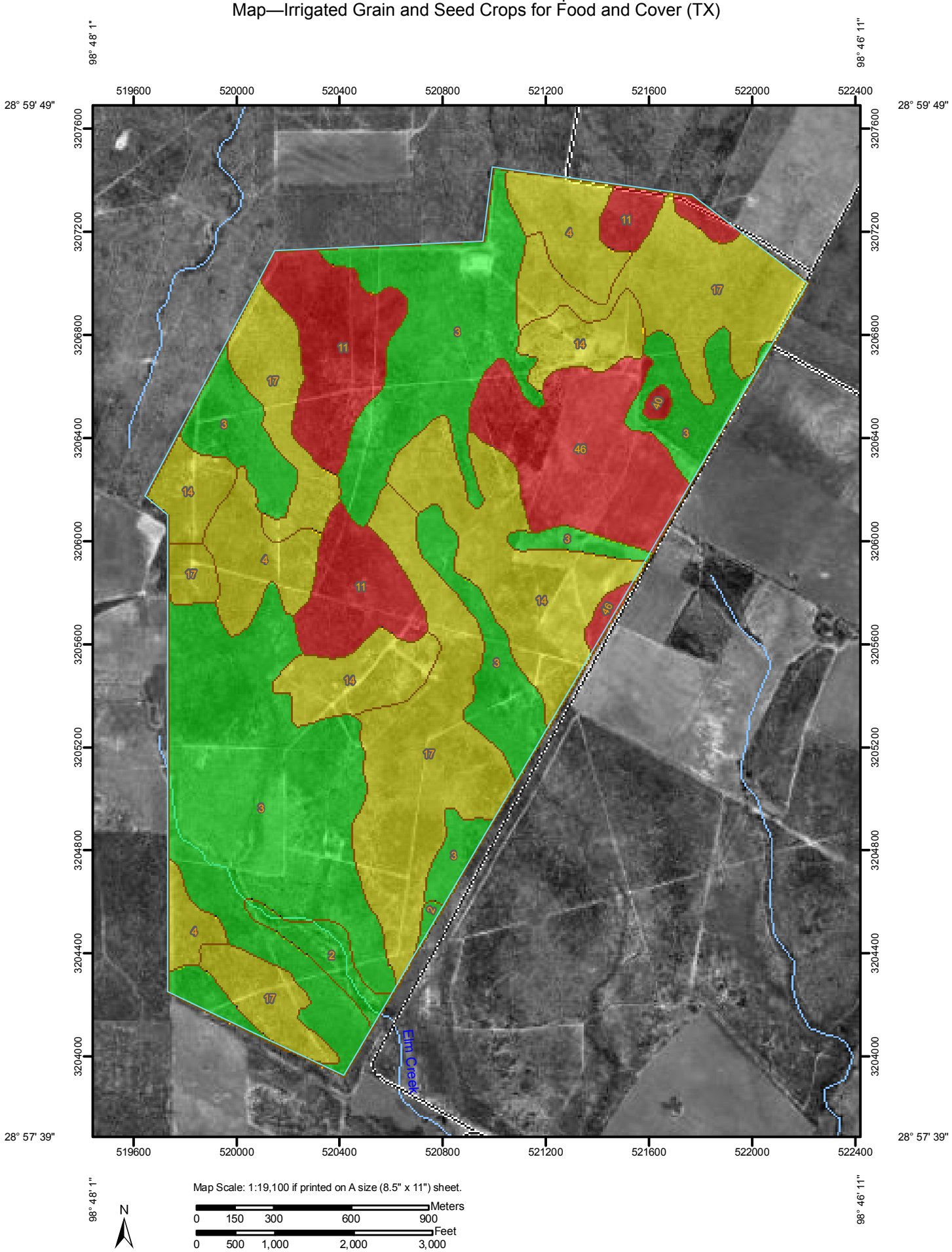
Rating class terms indicate the extent to which the soils are limited by the soil features that affect the soil interpretation. Verbal soil rating classes are based on the highest numerical rating for the most limiting soil feature(s) considered in the rating process. The "not limited" class (numerical value for the most restrictive feature = 0) indicates that the soil has no limiting features for the specified use. The "somewhat limited" class (numerical value for the most restrictive feature .01 to .99) indicates that the soil has limiting features for the specified use that can be overcome with proper planning, design, installation, and management. The effort required to overcome a soil limitation increases as the numerical rating increases. The "very limited" class (numerical value for the most restrictive feature = 1.00) indicates that the soil has one or more very limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Irrigated Grain and Seed Crops for Food and Cover (TX)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Very limited
- Somewhat limited
- Not limited
- not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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

Soil Survey Area: Atascosa County, Texas
Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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.

Tables—Irrigated Grain and Seed Crops for Food and Cover (TX)

Irrigated Grain and Seed Crops for Food and Cover (TX)— Summary by Map Unit — Atascosa County, Texas						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	Not limited	Amphion (85%)		19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	Not limited	Amphion (85%)		474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	Somewhat limited	Campbellton (85%)	Excess salt (0.13)	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	Very limited	Elmendorf (54%)	Potentially or highly erodible (1.00)	127.4	10.0%
				Percs slowly (0.50)		
			Denhawken (46%)	Potentially or highly erodible (1.00)		
				Too clayey (0.93)		
				Percs slowly (0.50)		
14	Floresville fine sandy loam, 1 to 3 percent slopes	Somewhat limited	Floresville (85%)	Percs slowly (0.33)	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	Somewhat limited	Hanis (85%)	Too clayey (0.01)	287.7	22.5%
40	Tiocano clay	Very limited	Tiocano (51%)	Ponding (1.00)	2.7	0.2%
				Depth to saturated zone (1.00)		
				Too clayey (1.00)		
				Percs slowly (0.50)		
			Tiocano (44%)	Depth to saturated zone (1.00)		
				Too clayey (1.00)		
				Ponding (0.50)		
				Percs slowly (0.50)		
46	Wilco loamy fine sand, 0 to 3 percent slopes	Very limited	Wilco (85%)	HEL wind (1.00)	103.5	8.1%
				Percs slowly (0.33)		
				Droughty (0.29)		
Totals for Area of Interest					**1,277.2**	**100.0%**

Irrigated Grain and Seed Crops for Food and Cover (TX)— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Somewhat limited	549.3	43.0%
Not limited	494.4	38.7%
Very limited	233.7	18.3%
Totals for Area of Interest	**1,277.2**	**100.0%**

Rating Options—Irrigated Grain and Seed Crops for Food and Cover (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Upland Native Herbaceous Plants (TX)

This interpretation provides a tool to assess a soil's limitations for use as either primary or secondary wildlife habitat. It is useful for planning the establishment and maintenance of native herbaceous plants for use as wildlife habitat. The ratings are for the soils in their natural condition and do not consider present land use, existing vegetation, water sources, and the presence or absence of wildlife in the area.

The interpretation provides ratings and identifies the dominant soil characteristics that limit the site for growing upland native herbaceous plants, either naturally or artificially established. The adapted vegetation components are selected to meet the specific local food and cover habitat requirements for targeted and non-targeted species of wildlife. This information allows the user to plan and develop alternative sites, and to identify the upland wild herbaceous plants that best meet the wildlife habitat requirements.

The management, reestablishment, or reintroduction of native upland herbaceous plants is determined by landscape, climate, soil, vegetation, hydrology, and time. A limitation caused by any one of these factors can influence the adaptability, survival, growth, and vigor of the herbaceous species. This interpretation addresses only those factors that relate primarily to the soil and identifies the soil limitation(s) that will have the most affect on the site's use for upland native herbaceous plants. The soil properties and qualities important in the establishment and management of such plants are soil temperature, available water holding capacity, wetness, coarse fragments in the surface, salts, moisture regime, and surface clay or sand content.

The ratings are both verbal and numerical. Numerical ratings or values indicate the relative severity or degree of limitation for individual soil restrictive (limiting) features. Ratings are shown for limiting soil features 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 use (1.00), and the point at which the soil feature is not a limitation (0.00). Non-limiting soil features with a numerical rating of zero are not listed.

Rating class terms indicate the extent to which the soils are limited by the soil features that affect the soil interpretation. Verbal soil rating classes are based on the highest numerical rating for the most limiting soil feature(s) considered in the rating process. The "not limited" class (numerical value for the most restrictive feature = 0) indicates that the soil has no limiting features for the specified use. The "somewhat limited" class (numerical value for the most restrictive feature .01 to .99) indicates that the soil has limiting features for the specified use that can be overcome with proper planning,

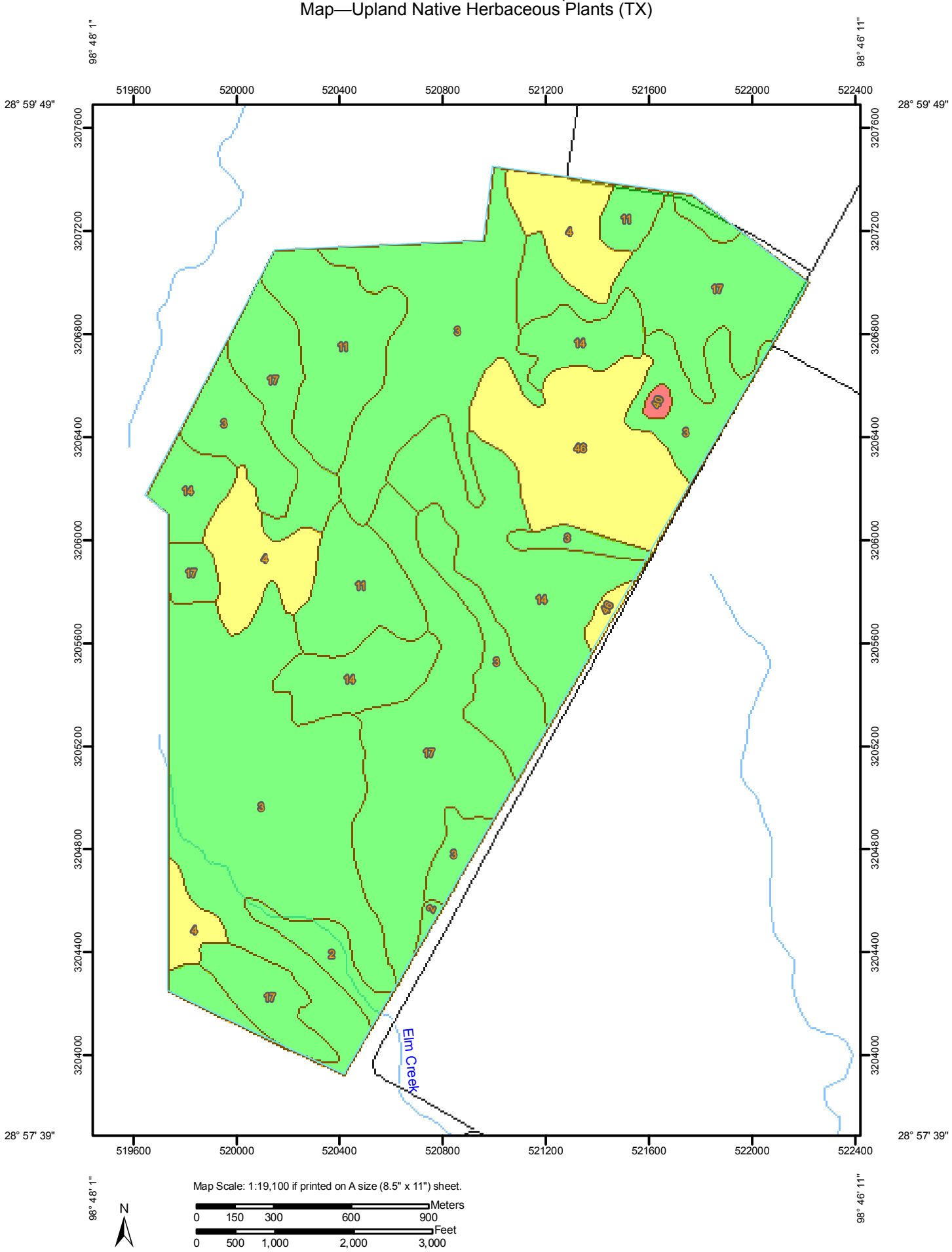
design, installation, and management. The effort required to overcome a soil limitation increases as the numerical rating increases. The "very limited" class (numerical value for the most restrictive feature = 1.00) indicates that the soil has one or more very limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Upland Native Herbaceous Plants (TX)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Very limited
- Somewhat limited
- Not limited
- not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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

Soil Survey Area: Atascosa County, Texas
Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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.

Tables—Upland Native Herbaceous Plants (TX)

Upland Native Herbaceous Plants (TX)— Summary by Map Unit — Atascosa County, Texas						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	Not limited	Amphion (85%)		19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	Not limited	Amphion (85%)		474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	Somewhat limited	Campbellton (85%)	Excess salt (0.01)	83.4	6.5%
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	Not limited	Elmendorf (54%)		127.4	10.0%
			Denhawken (46%)			
14	Floresville fine sandy loam, 1 to 3 percent slopes	Not limited	Floresville (85%)		178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	Not limited	Hanis (85%)		287.7	22.5%
40	Tiocano clay	Very limited	Tiocano (51%)	Depth to saturated zone (1.00)	2.7	0.2%
				Too clayey (0.50)		
			Tiocano (44%)	Depth to saturated zone (1.00)		
				Too clayey (0.50)		
46	Wilco loamy fine sand, 0 to 3 percent slopes	Somewhat limited	Wilco (85%)	Sandy surface (0.40)	103.5	8.1%
Totals for Area of Interest					**1,277.2**	**100.0%**

Upland Native Herbaceous Plants (TX)— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Not limited	1,087.6	85.2%
Somewhat limited	187.0	14.6%
Very limited	2.7	0.2%
Totals for Area of Interest	**1,277.2**	**100.0%**

Rating Options—Upland Native Herbaceous Plants (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Upland Shrubs and Vines (TX)

Upland shrubs and vines (TX) interpretation provides a tool to assess a soil's limitations for use as either primary or secondary wildlife habitat. This interpretation is useful for planning the establishment and maintenance of upland shrubs and vines for use as wildlife habitat. The ratings are for the soils in their natural condition and do not consider present land use, existing vegetation, water sources, and the presence or absence of wildlife in the area.

Upland shrub and vine species are predominantly mesophytic or xerophytic, but include some hydrophytic plants that are common in areas adjacent to riparian or wetland areas. The adapted vegetation components are selected to meet the specific local food and cover habitat requirements for targeted and non-targeted species of wildlife. The ratings are intended to provide guidance for the selection of sites for growing and managing upland shrubs and/or vines as wildlife habitat.

The interpretation provides ratings and identifies the dominant soil characteristics that limit the site for growing shrubs and vines, either naturally or artificially established. This information allows the user to plan and develop alternative sites, and to identify the upland shrubs and vines that best meet the wildlife habitat requirements.

The management, reestablishment, or reintroduction of introduced or native upland shrub and vine species is determined by landscape, climate, soil, vegetation, hydrology, and time. A limitation caused by any one of these factors can influence the adaptability, survival, growth, and vigor of the shrub or vine species. This interpretation addresses only those factors that relate primarily to the soil and identifies the soil limitation that will have the most affect on the site's use for upland shrub and vine wildlife habitat. The soil properties and qualities important in the establishment and management of shrubs and vines are surface texture, organic matter content, rock fragments, soil depth, available water holding capacity, wetness, salts, sodium adsorption ratio, and extreme climatic conditions.

Numerical ratings or values indicate the relative severity or degree of limitation for individual soil restrictive (limiting) features. Ratings are shown for limiting soil features 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 use (1.00), and the point at which the soil feature is not a limitation (0.00). Non-limiting soil features with a numerical rating of zero are not listed.

Rating class terms indicate the extent to which the soils are limited by the soil features that affect the soil interpretation. Verbal soil rating classes are based on the highest numerical rating for the most limiting soil feature(s) considered in the rating process. The "not limited" class (numerical value for the most restrictive feature = 0) indicates that the soil has no limiting features for the specified use. The "somewhat limited" class (numerical value for the most restrictive feature .01 to .99) indicates that the soil has limiting features for the specified use that can be overcome with proper planning, design, installation, and management. The effort required to overcome a soil limitation increases as the numerical rating increases. The "very limited" class (numerical value for the most restrictive feature = 1.00) indicates that the soil has one or more very

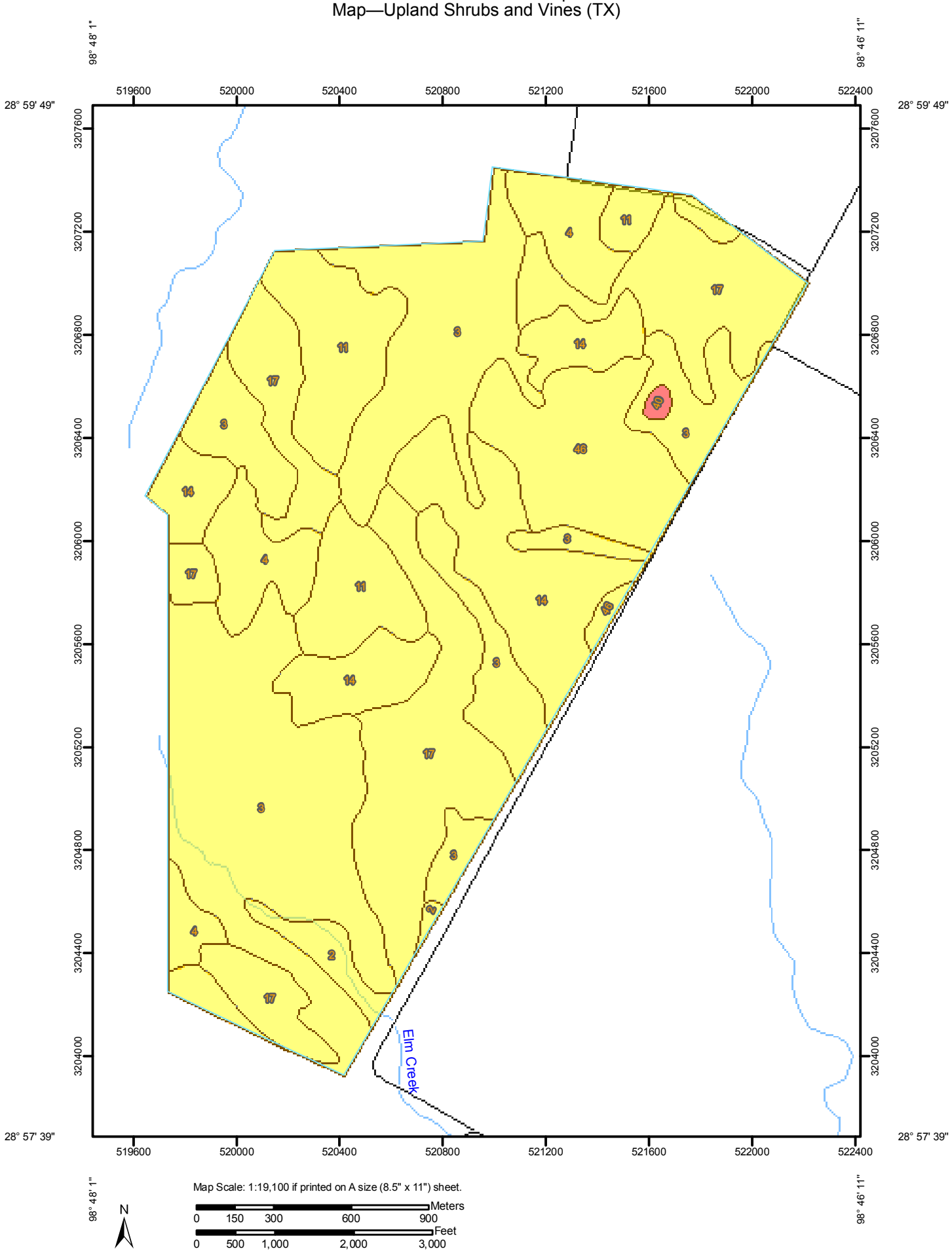
limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Upland Shrubs and Vines (TX)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Very limited
- Somewhat limited
- Not limited
- not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:19,100 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 14N NAD83

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

Soil Survey Area: Atascosa County, Texas
Survey Area Data: Version 8, Oct 26, 2009

Date(s) aerial images were photographed: 1/7/1995

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.

Tables—Upland Shrubs and Vines (TX)

Upland Shrubs and Vines (TX)— Summary by Map Unit — Atascosa County, Texas						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
2	Amphion sandy clay loam, 0 to 1 percent slopes	Somewhat limited	Amphion (85%)	Extreme soil temperatures (0.50)	19.9	1.6%
3	Amphion sandy clay loam, 1 to 3 percent slopes	Somewhat limited	Amphion (85%)	Extreme soil temperatures (0.50)	474.5	37.2%
4	Campbellton loam, 1 to 3 percent slopes	Somewhat limited	Campbellton (85%)	Extreme soil temperatures (0.50)	83.4	6.5%
				Excess salt (0.01)		
11	Elmendorf-Denhawken complex, 1 to 4 percent slopes	Somewhat limited	Elmendorf (54%)	Extreme soil temperatures (0.50)	127.4	10.0%
			Denhawken (46%)	Extreme soil temperatures (0.50)		
14	Floresville fine sandy loam, 1 to 3 percent slopes	Somewhat limited	Floresville (85%)	Extreme soil temperatures (0.50)	178.2	14.0%
17	Hanis sandy clay loam, 1 to 3 percent slopes	Somewhat limited	Hanis (85%)	Extreme soil temperatures (0.50)	287.7	22.5%
40	Tiocano clay	Very limited	Tiocano (51%)	Depth to saturated zone (1.00)	2.7	0.2%
				Too clayey (0.50)		
				Extreme soil temperatures (0.50)		
			Tiocano (44%)	Depth to saturated zone (1.00)		
				Too clayey (0.50)		
				Extreme soil temperatures (0.50)		
46	Wilco loamy fine sand, 0 to 3 percent slopes	Somewhat limited	Wilco (85%)	Extreme soil temperatures (0.50)	103.5	8.1%
				Sandy surface (0.40)		
Totals for Area of Interest					**1,277.2**	**100.0%**

Upland Shrubs and Vines (TX)— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Somewhat limited	1,274.6	99.8%
Very limited	2.7	0.2%
Totals for Area of Interest	**1,277.2**	**100.0%**

Rating Options—Upland Shrubs and Vines (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://soils.usda.gov/

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://soils.usda.gov/

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://soils.usda.gov/

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.glti.nrcs.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://soils.usda.gov/

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.