



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 **Shannon County, Missouri**

**Camp Zoe to Current River State  
Park**



# Preface

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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://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) 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://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

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 Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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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.

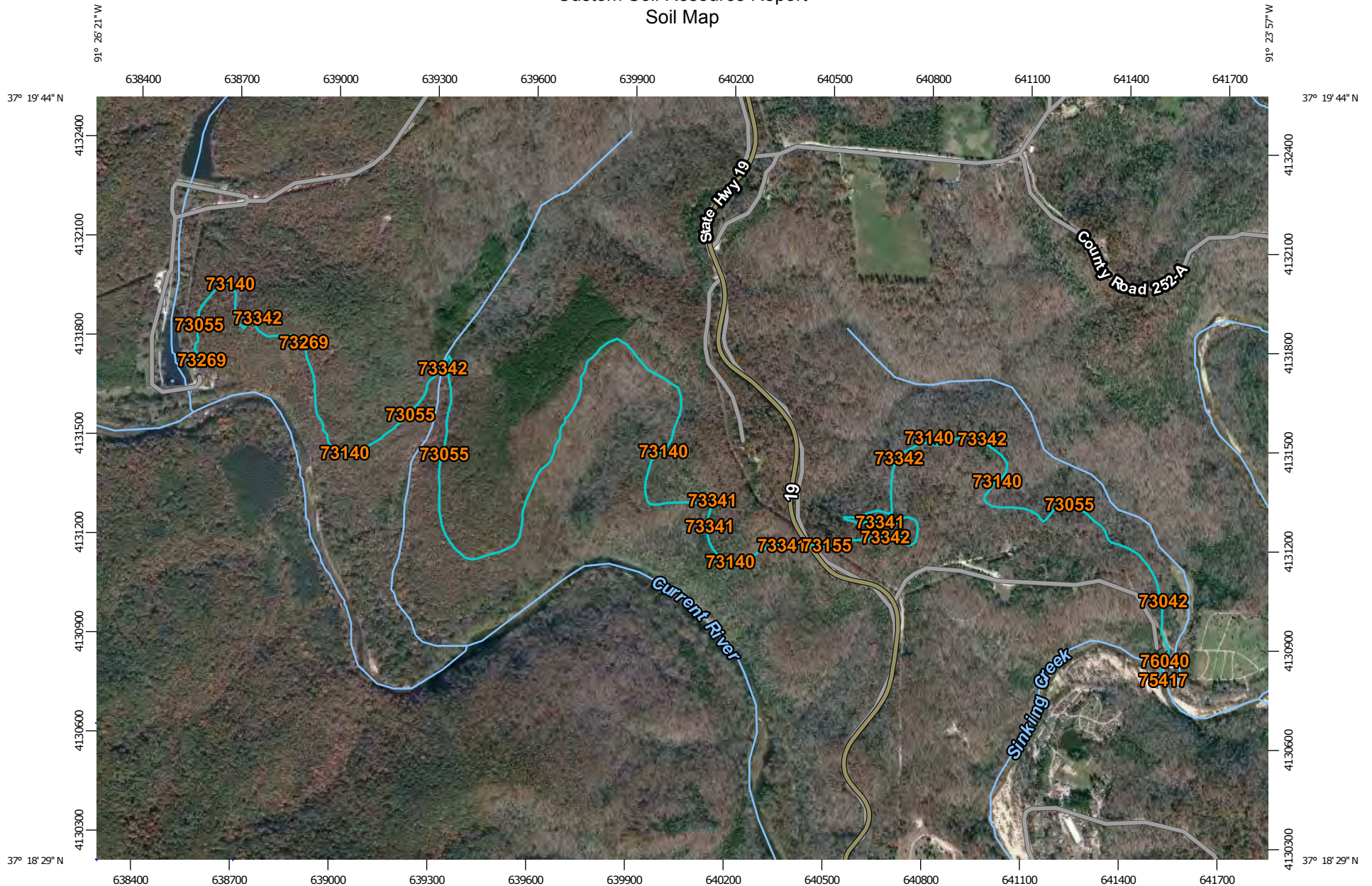
# Soil Map

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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: 1:16,300 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84



# Custom Soil Resource Report


## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### 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

### Water Features

 Streams and Canals


### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Shannon County, Missouri  
Survey Area Data: Version 15, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2010—Nov 14, 2010

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

Shannon County, Missouri (MO203)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
73042	Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony	0.1	5.2%
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony	0.4	21.0%
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony	0.9	43.7%
73155	Gasconade-Rock outcrop complex, 3 to 35 percent slopes	0.0	0.2%
73269	Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery	0.1	5.8%
73341	Gepp-Arkana complex, 15 to 55 percent slopes, rocky	0.2	8.7%
73342	Alred-Arkana complex, 8 to 15 percent slopes, rocky	0.3	14.7%
75417	Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded	0.0	0.1%
76040	Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded	0.0	0.6%
<b>Totals for Area of Interest</b>		<b>2.0</b>	<b>100.0%</b>

## 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.

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

## Shannon County, Missouri

### 73042—Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony

#### Map Unit Setting

*National map unit symbol:* 2qpg1  
*Elevation:* 800 to 1,200 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Niangua and similar soils:* 60 percent  
*Bardley and similar soils:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Niangua

##### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over residuum weathered from dolomite over dolomite

##### Typical profile

*A - 0 to 3 inches:* very gravelly silt loam  
*E - 3 to 14 inches:* very gravelly silt loam  
*2Bt - 14 to 52 inches:* clay  
*2R - 52 to 80 inches:* bedrock

##### Properties and qualities

*Slope:* 15 to 50 percent  
*Percent of area covered with surface fragments:* 9.0 percent  
*Depth to restrictive feature:* 40 to 60 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* Very high  
*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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)



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*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Bardley

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite over dolomite

#### Typical profile

*A - 0 to 4 inches:* very gravelly silt loam

*E - 4 to 8 inches:* extremely gravelly silt loam

*2Bt - 8 to 27 inches:* clay

*3R - 27 to 80 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 50 percent

*Percent of area covered with surface fragments:* 9.0 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Very high

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 2.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* D

*Ecological site:* Chert Dolomite Protected Backslope Forest (F116AY016MO), Chert Dolomite Exposed Backslope Woodland (F116AY048MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## 73055—Alred-Rueter complex, 15 to 35 percent slopes, very stony

#### Map Unit Setting

*National map unit symbol:* 2vxq7

*Elevation:* 700 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Alred and similar soils:* 50 percent

*Rueter and similar soils:* 35 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Alred

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 4 inches:* gravelly silt loam

*E - 4 to 8 inches:* gravelly silt loam

*Bt1 - 8 to 22 inches:* very gravelly silty clay loam

*2Bt2 - 22 to 79 inches:* gravelly clay

#### Properties and qualities

*Slope:* 15 to 35 percent

*Percent of area covered with surface fragments:* 2.0 percent

*Depth to restrictive feature:* 14 to 40 inches to strongly contrasting textural stratification

*Natural drainage class:* Well drained

*Runoff class:* High

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 3.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C

*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Rueter

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

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### Typical profile

*A - 0 to 6 inches:* very gravelly silt loam  
*E - 6 to 10 inches:* gravelly silt loam  
*Bt1 - 10 to 28 inches:* very gravelly silt loam  
*Bt2 - 28 to 42 inches:* very gravelly clay  
*2Bt3 - 42 to 79 inches:* very cobbly clay

### Properties and qualities

*Slope:* 15 to 35 percent  
*Percent of area covered with surface fragments:* 2.0 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Goss

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* Chert Upland Woodland (F116AY011MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gepp

*Percent of map unit:* 4 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Coulstone

*Percent of map unit:* 3 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope

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*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Low-Base Sandstone Protected Backslope Woodland (F116AY045MO), Low-Base Sandstone Exposed Backslope Woodland (F116AY053MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### **Taterhill**

*Percent of map unit:* 3 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* Dry Footslope Forest (F116AY031MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## **73140—Clarksville-Scholten complex, 15 to 45 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2vxq9

*Elevation:* 800 to 1,500 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Clarksville and similar soils:* 50 percent

*Scholten and similar soils:* 30 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Clarksville**

#### **Setting**

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### **Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 6 inches:* very gravelly silt loam

*E - 6 to 13 inches:* gravelly silt loam

*Bt1 - 13 to 21 inches:* very gravelly silt loam

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*Bt2 - 21 to 43 inches: extremely gravelly clay loam*

*2Bt3 - 43 to 79 inches: very gravelly clay*

### Properties and qualities

*Slope: 15 to 45 percent*

*Percent of area covered with surface fragments: 1.6 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Somewhat excessively drained*

*Runoff class: Medium*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Low (about 5.0 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 6s*

*Hydrologic Soil Group: B*

*Ecological site: Low-Base Chert Protected Backslope Woodland (F116AY013MO),  
Low-Base Chert Exposed Backslope Woodland (F116AY049MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

## Description of Scholten

### Setting

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Slope alluvium over pedis sediment over residuum weathered from dolomite*

### Typical profile

*Oi - 0 to 1 inches: slightly decomposed plant material*

*A - 1 to 6 inches: very gravelly silt loam*

*E - 6 to 13 inches: very gravelly silt loam*

*Bt1 - 13 to 34 inches: extremely gravelly clay loam*

*2Btx - 34 to 58 inches: very gravelly loam*

*3Bt2 - 58 to 79 inches: very gravelly clay*

### Properties and qualities

*Slope: 15 to 45 percent*

*Percent of area covered with surface fragments: 1.6 percent*

*Depth to restrictive feature: 16 to 36 inches to fragipan*

*Natural drainage class: Moderately well drained*

*Runoff class: High*

*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 14 to 34 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Very low (about 3.0 inches)*



## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C

*Ecological site:* Low-Base Chert Protected Backslope Woodland (F116AY013MO),

Low-Base Chert Exposed Backslope Woodland (F116AY049MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Taterhill

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* Dry Footslope Forest (F116AY031MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gepp

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Poynor

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Low-Base Chert Protected Backslope Woodland (F116AY013MO), Low-Base Chert Exposed Backslope Woodland (F116AY049MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Tilk

*Percent of map unit:* 5 percent

*Landform:* Flood-plain steps

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## **73155—Gasconade-Rock outcrop complex, 3 to 35 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2vxpz  
*Elevation:* 600 to 900 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Gasconade and similar soils:* 60 percent  
*Rock outcrop:* 30 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Gasconade**

#### **Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from dolomite

#### **Typical profile**

*A - 0 to 4 inches:* silty clay  
*Bw - 4 to 13 inches:* very gravelly clay  
*R - 13 to 79 inches:* bedrock

#### **Properties and qualities**

*Slope:* 3 to 35 percent  
*Percent of area covered with surface fragments:* 0.0 percent  
*Depth to restrictive feature:* 4 to 20 inches to lithic bedrock  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Very high  
*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 in profile:* 1 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 1.1 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s

## Custom Soil Resource Report

*Hydrologic Soil Group:* D

*Ecological site:* Shallow Dolomite Upland Glade/Woodland (R116AY020MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Description of Rock Outcrop

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Linear

*Across-slope shape:* Linear

#### Properties and qualities

*Slope:* 3 to 35 percent

*Depth to restrictive feature:* 0 inches to lithic bedrock

*Runoff class:* Very high

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

### Minor Components

#### Caneyville

*Percent of map unit:* 8 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Loamy Dolomite Upland Woodland (F116AY018MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gepp

*Percent of map unit:* 2 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### 73269—Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery

#### Map Unit Setting

*National map unit symbol:* 2vxrb

*Elevation:* 800 to 1,100 feet

## Custom Soil Resource Report

*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Brussels and similar soils:* 45 percent  
*Gasconade and similar soils:* 35 percent  
*Rock outcrop:* 15 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Brussels

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Residuum weathered from dolomite

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 10 inches:* gravelly silty clay loam  
*Bt1 - 10 to 49 inches:* very gravelly silty clay loam  
*Bt2 - 49 to 79 inches:* gravelly silty clay loam

#### Properties and qualities

*Slope:* 35 to 90 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 1 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 7.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Ecological site:* Talus Footslope Forest (F116AY022MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Gasconade

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear

## Custom Soil Resource Report

*Across-slope shape:* Linear

*Parent material:* Residuum weathered from dolomite

### Typical profile

*A - 0 to 9 inches:* flaggy clay

*Bw - 9 to 14 inches:* very channery clay

*R - 14 to 79 inches:* bedrock

### Properties and qualities

*Slope:* 35 to 90 percent

*Percent of area covered with surface fragments:* 1.6 percent

*Depth to restrictive feature:* 4 to 20 inches to lithic bedrock

*Natural drainage class:* Somewhat excessively drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 1 percent

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 1.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Ecological site:* Dolomite Protected Cliff (R116AY014MO), Dolomite Exposed Cliff (R116AY017MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

## Description of Rock Outcrop

### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

### Properties and qualities

*Slope:* 35 to 90 percent

*Depth to restrictive feature:* 0 inches to lithic bedrock

*Runoff class:* Very high

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

## Minor Components

### Gatewood

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Convex

*Across-slope shape:* Convex



## Custom Soil Resource Report

*Ecological site:* Chert Dolomite Upland Woodland (F116AY044MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### **73341—Gepp-Arkana complex, 15 to 55 percent slopes, rocky**

#### **Map Unit Setting**

*National map unit symbol:* 2q23s

*Elevation:* 500 to 1,500 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Farmland of statewide importance

#### **Map Unit Composition**

*Gepp and similar soils:* 50 percent

*Arkana and similar soils:* 35 percent

*Minor components:* 1 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### **Description of Gepp**

##### **Setting**

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

##### **Typical profile**

*A - 0 to 4 inches:* very gravelly silt loam

*Bt1 - 4 to 15 inches:* silty clay

*2Bt2 - 15 to 79 inches:* clay

##### **Properties and qualities**

*Slope:* 15 to 55 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* High

*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:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 5.9 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* B

*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Arkana

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 9 inches:* very gravelly silt loam

*Bt1 - 9 to 14 inches:* very gravelly clay

*2Bt2 - 14 to 29 inches:* clay

*2R - 29 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 55 percent

*Depth to restrictive feature:* 24 to 45 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* High

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 2.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* C

*Ecological site:* Calcareous Dolomite Protected Backslope Forest (F116AY010MO), Calcareous Dolomite Exposed Backslope Woodland (F116AY047MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Minor Components

#### Rock outcrop

*Percent of map unit:* 1 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

## **73342—Alred-Arkana complex, 8 to 15 percent slopes, rocky**

### **Map Unit Setting**

*National map unit symbol:* 2q23t  
*Elevation:* 500 to 1,500 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Alred and similar soils:* 50 percent  
*Arkana and similar soils:* 35 percent  
*Minor components:* 1 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Alred**

#### **Setting**

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over residuum weathered from cherty limestone

#### **Typical profile**

*A - 0 to 8 inches:* very gravelly silt loam  
*E - 8 to 11 inches:* gravelly silt loam  
*Bt1 - 11 to 24 inches:* very gravelly silt loam  
*2Bt2 - 24 to 79 inches:* cobbly clay

#### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* 14 to 40 inches to strongly contrasting textural stratification  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.8 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e

## Custom Soil Resource Report

*Hydrologic Soil Group:* C

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Arkana

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 5 inches:* very gravelly silt loam

*Bt1 - 5 to 17 inches:* gravelly clay

*2Bt2 - 17 to 25 inches:* clay

*2R - 25 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 24 to 45 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Medium

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 2.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* C

*Ecological site:* Calcareous Dolomite Upland Woodland (F116AY009MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Minor Components

#### Rock outcrop

*Percent of map unit:* 1 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Convex

*Across-slope shape:* Convex

## **75417—Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded**

### **Map Unit Setting**

*National map unit symbol:* 2w259

*Elevation:* 330 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Relfe and similar soils:* 50 percent

*Sandbur and similar soils:* 40 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Relfe**

#### **Setting**

*Landform:* Flood plains

*Landform position (three-dimensional):* Rise

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Sandy and gravelly alluvium

#### **Typical profile**

*Ap - 0 to 6 inches:* very gravelly sandy loam

*C - 6 to 79 inches:* stratified extremely cobbly coarse sand to very gravelly loamy sand

#### **Properties and qualities**

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 1.4 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* A

*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)



## Description of Sandbur

### Setting

*Landform:* Flood plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium

### Typical profile

*Ap - 0 to 8 inches:* fine sandy loam  
*C - 8 to 50 inches:* stratified loamy fine sand to silt loam  
*2Btb - 50 to 79 inches:* very gravelly sandy loam

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Very low  
*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:* More than 80 inches  
*Frequency of flooding:* Frequent  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 7.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* A  
*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Minor Components

### Farewell

*Percent of map unit:* 5 percent  
*Landform:* Flood plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Ecological site:* Wet Floodplain Step Forest (F116AY040MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Riverwash

*Percent of map unit:* 5 percent  
*Landform:* Flood plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

## **76040—Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded**

### **Map Unit Setting**

*National map unit symbol:* 2t7hd  
*Elevation:* 500 to 900 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Relfe and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Relfe**

#### **Setting**

*Landform:* Drainageways  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy and gravelly alluvium

#### **Typical profile**

*A - 0 to 7 inches:* sandy loam  
*C - 7 to 79 inches:* very gravelly sand

#### **Properties and qualities**

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Excessively drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)  
*Depth to water table:* About 60 to 79 inches  
*Frequency of flooding:* Occasional  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.0 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* A  
*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Minor Components

### Gladden

*Percent of map unit:* 5 percent

*Landform:* Drainageways

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Tilk

*Percent of map unit:* 3 percent

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Secesh

*Percent of map unit:* 2 percent

*Landform:* Drainageways

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

# **Soil Information for All Uses**

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## **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.

## **Recreational Development**

Recreational Development interpretations are tools designed to guide the user in identifying and evaluating the suitability of the soil for specific recreational uses. Example interpretations include camp areas, picnic areas, playgrounds, paths and trails, and off-road motorcycle trails.

### **Paths and Trails (Camp Zoe to Current River State Park)**

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling.

The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

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.

## Custom Soil Resource Report

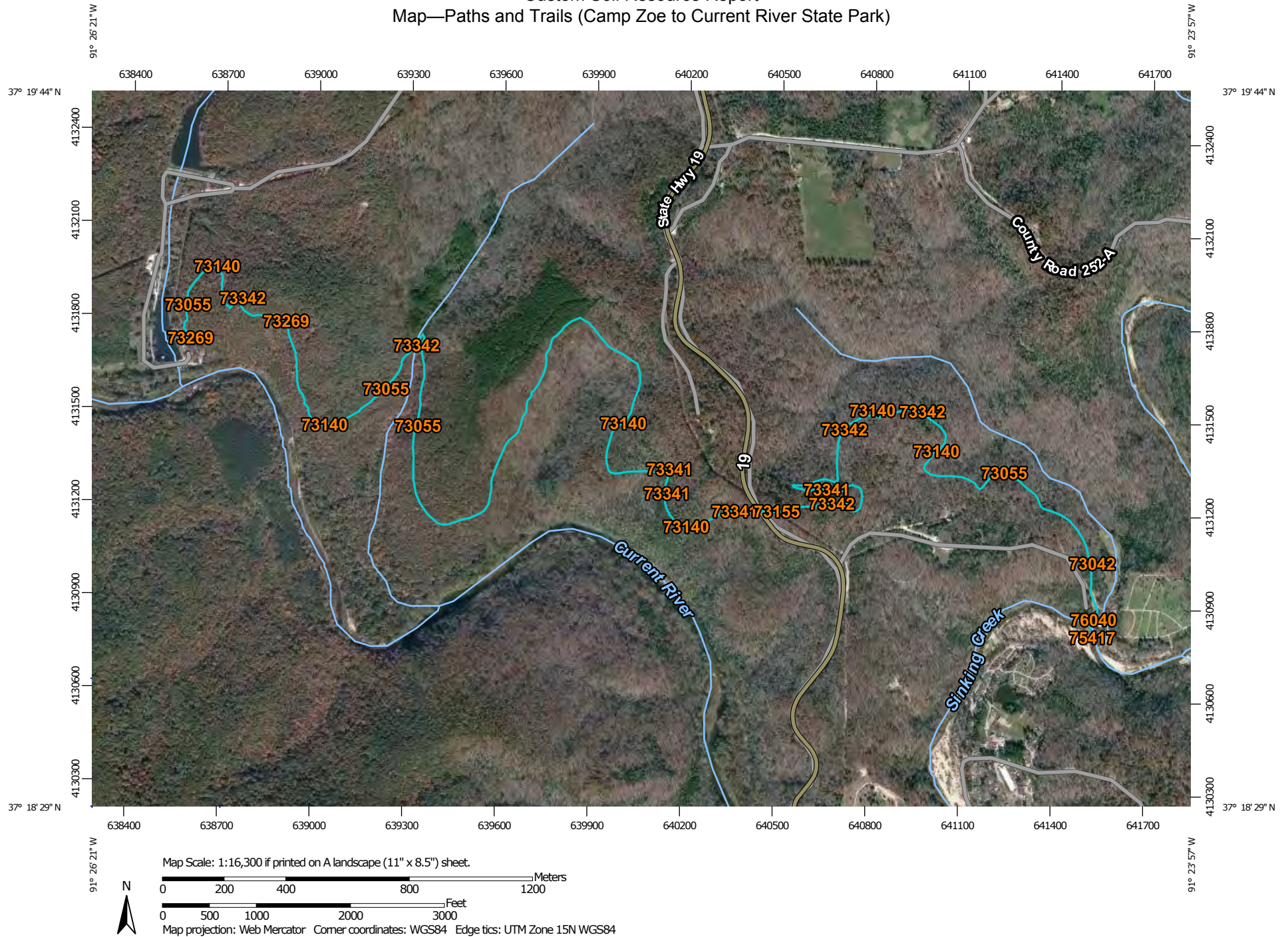
Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not 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—Paths and Trails (Camp Zoe to Current River State Park)




## MAP LEGEND

### Area of Interest (AOI)





 Area of Interest (AOI)

### Background





 Aerial Photography

### Soils





#### Soil Rating Polygons

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


#### Soil Rating Lines

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






#### Soil Rating Points

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

### Water Features

 Streams and Canals

### Transportation

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

## MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Shannon County, Missouri  
Survey Area Data: Version 15, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2010—Nov 14, 2010

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.



Custom Soil Resource Report

**Tables—Paths and Trails (Camp Zoe to Current River State Park)**

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
73042	Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony	Very limited	Niangua (60%)	Large stones content (1.00)	0.1	5.2%
				Slope (1.00)		
				Dusty (0.07)		
			Bardley (30%)	Large stones content (1.00)		
				Slope (1.00)		
				Dusty (0.07)		
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony	Very limited	Alred (50%)	Slope (1.00)	0.4	21.0%
				Large stones content (0.76)		
				Dusty (0.07)		
			Rueter (35%)	Slope (1.00)		
				Large stones content (0.76)		
				Dusty (0.06)		
			Goss (5%)	Slope (1.00)		
				Dusty (0.07)		
			Gepp (4%)	Slope (1.00)		
				Dusty (0.07)		
			Coulstone (3%)	Slope (1.00)		
				Dusty (0.03)		
			Taterhill (3%)	Water erosion (1.00)		
				Dusty (0.07)		
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony	Very limited	Clarksville (50%)	Slope (1.00)	0.9	43.7%
				Large stones content (0.53)		
				Dusty (0.07)		
			Scholten (30%)	Slope (1.00)		
				Large stones content (0.53)		
				Dusty (0.05)		
			Taterhill (5%)	Water erosion (1.00)		
				Dusty (0.07)		
			Gepp (5%)	Slope (1.00)		
				Dusty (0.07)		
			Poynor (5%)	Slope (1.00)		



# Custom Soil Resource Report

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Dusty (0.07)		
73155	Gasconade-Rock outcrop complex, 3 to 35 percent slopes	Very limited	Gasconade (60%)	Too clayey (1.00) Slope (0.18) Dusty (0.06)	0.0	0.2%
73269	Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery	Very limited	Brussels (45%)	Slope (1.00) Large stones content (0.53) Dusty (0.07)	0.1	5.8%
			Gasconade (35%)	Slope (1.00) Too clayey (1.00) Large stones content (0.53) Dusty (0.07)		
			Gatewood (5%)	Slope (1.00) Water erosion (1.00) Dusty (0.07)		
73341	Gepp-Arkana complex, 15 to 55 percent slopes, rocky	Very limited	Gepp (50%)	Slope (1.00) Dusty (0.07)	0.2	8.7%
			Arkana (35%)	Slope (1.00) Dusty (0.07)		
73342	Alred-Arkana complex, 8 to 15 percent slopes, rocky	Somewhat limited	Alred (50%)	Dusty (0.07)	0.3	14.7%
			Arkana (35%)	Dusty (0.07)		
75417	Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded	Somewhat limited	Relfe (50%)	Flooding (0.40)	0.0	0.1%
			Sandbur (40%)	Flooding (0.40) Dusty (0.01)		
76040	Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded	Somewhat limited	Relfe (90%)	Too sandy (0.02)	0.0	0.6%
			Gladden (5%)	Dusty (0.04)		
			Tiik (3%)	Dusty (0.03)		
			Secesh (2%)	Dusty (0.06)		
<b>Totals for Area of Interest</b>					<b>2.0</b>	<b>100.0%</b>

Paths and Trails— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	1.7	84.7%
Somewhat limited	0.3	15.3%
<b>Totals for Area of Interest</b>	<b>2.0</b>	<b>100.0%</b>

**Rating Options—Paths and Trails (Camp Zoe to Current River State Park)**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

# References

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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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)



United States  
Department of  
Agriculture

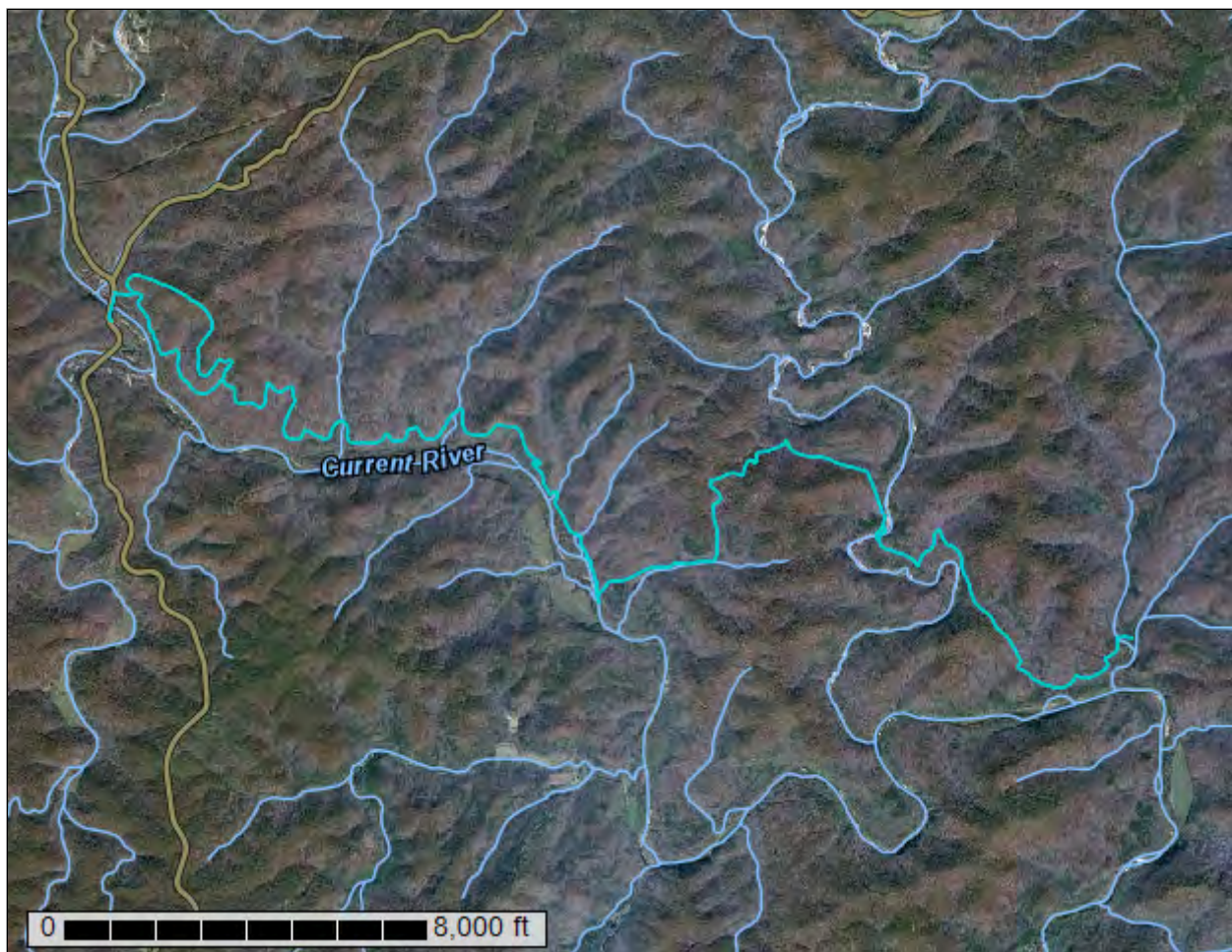
**NRCS**

Natural  
Resources  
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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 **Shannon County, Missouri**

## Round Spring to Brushy Creek



# Preface

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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://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) 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://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

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 Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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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.

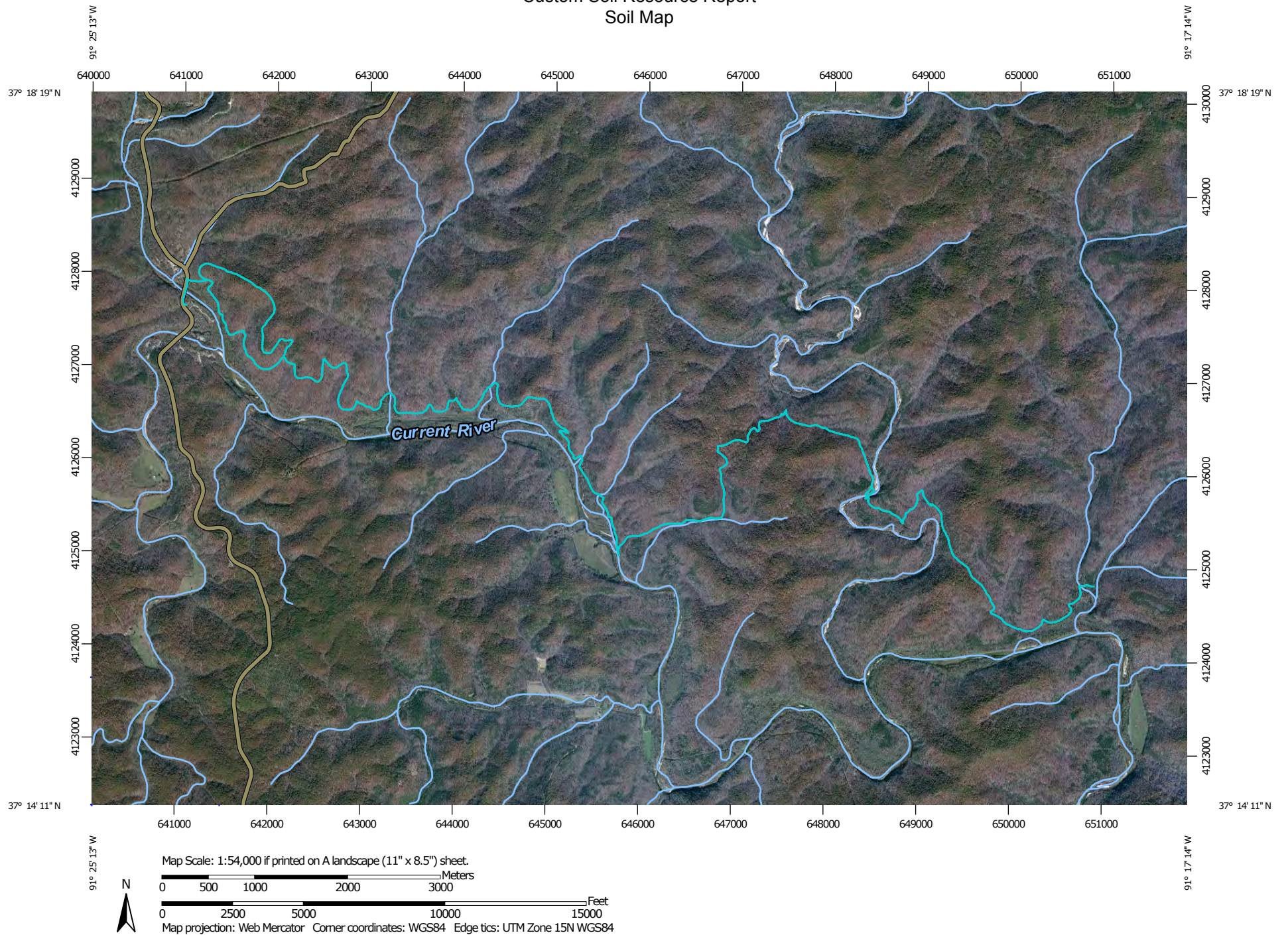
# Soil Map

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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




# Custom Soil Resource Report


## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### 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

### Water Features

 Streams and Canals


### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Shannon County, Missouri  
Survey Area Data: Version 15, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2010—Nov 14, 2010

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

Shannon County, Missouri (MO203)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
73042	Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony	1.9	31.3%
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony	1.2	19.8%
73139	Poynor-Clarksville-Scholten complex, 8 to 15 percent slopes, stony	0.1	1.7%
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony	0.5	7.5%
73144	Courtois silt loam, 8 to 15 percent slopes	0.1	1.2%
73269	Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery	0.5	8.1%
73336	Rueter-Gepp complex, bench, 8 to 15 percent slopes	0.1	2.3%
73339	Arkana-Gepp complex, 8 to 15 percent slopes, rocky, stony	0.2	3.3%
73340	Rueter-Gepp complex, 8 to 15 percent slopes, stony	0.2	4.0%
73341	Gepp-Arkana complex, 15 to 55 percent slopes, rocky	0.7	11.5%
73342	Alred-Arkana complex, 8 to 15 percent slopes, rocky	0.1	1.7%
75417	Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded	0.2	3.1%
75462	Huzzah sandy loam, 0 to 3 percent slopes, occasionally flooded	0.2	2.9%
76007	Cedargap gravelly loam, 1 to 3 percent slopes, rarely flooded	0.0	0.5%
76022	Huzzah sandy loam, 1 to 3 percent slopes, occasionally flooded	0.0	0.6%
76040	Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded	0.0	0.0%
76046	Secesh silt loam, 1 to 3 percent slopes, rarely flooded	0.0	0.4%
<b>Totals for Area of Interest</b>		<b>6.2</b>	<b>100.0%</b>



## 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.



## Shannon County, Missouri

### 73042—Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony

#### Map Unit Setting

*National map unit symbol:* 2qpg1  
*Elevation:* 800 to 1,200 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Niangua and similar soils:* 60 percent  
*Bardley and similar soils:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Niangua

##### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over residuum weathered from dolomite over dolomite

##### Typical profile

*A - 0 to 3 inches:* very gravelly silt loam  
*E - 3 to 14 inches:* very gravelly silt loam  
*2Bt - 14 to 52 inches:* clay  
*2R - 52 to 80 inches:* bedrock

##### Properties and qualities

*Slope:* 15 to 50 percent  
*Percent of area covered with surface fragments:* 9.0 percent  
*Depth to restrictive feature:* 40 to 60 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* Very high  
*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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

## Custom Soil Resource Report

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Bardley

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite over dolomite

#### Typical profile

*A - 0 to 4 inches:* very gravelly silt loam

*E - 4 to 8 inches:* extremely gravelly silt loam

*2Bt - 8 to 27 inches:* clay

*3R - 27 to 80 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 50 percent

*Percent of area covered with surface fragments:* 9.0 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Very high

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 2.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* D

*Ecological site:* Chert Dolomite Protected Backslope Forest (F116AY016MO), Chert Dolomite Exposed Backslope Woodland (F116AY048MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## 73055—Alred-Rueter complex, 15 to 35 percent slopes, very stony

#### Map Unit Setting

*National map unit symbol:* 2vxq7

*Elevation:* 700 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Alred and similar soils:* 50 percent

*Rueter and similar soils:* 35 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Alred

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 4 inches:* gravelly silt loam

*E - 4 to 8 inches:* gravelly silt loam

*Bt1 - 8 to 22 inches:* very gravelly silty clay loam

*2Bt2 - 22 to 79 inches:* gravelly clay

#### Properties and qualities

*Slope:* 15 to 35 percent

*Percent of area covered with surface fragments:* 2.0 percent

*Depth to restrictive feature:* 14 to 40 inches to strongly contrasting textural stratification

*Natural drainage class:* Well drained

*Runoff class:* High

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 3.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C

*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Rueter

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

## Custom Soil Resource Report

### Typical profile

*A - 0 to 6 inches:* very gravelly silt loam  
*E - 6 to 10 inches:* gravelly silt loam  
*Bt1 - 10 to 28 inches:* very gravelly silt loam  
*Bt2 - 28 to 42 inches:* very gravelly clay  
*2Bt3 - 42 to 79 inches:* very cobbly clay

### Properties and qualities

*Slope:* 15 to 35 percent  
*Percent of area covered with surface fragments:* 2.0 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Goss

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* Chert Upland Woodland (F116AY011MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gepp

*Percent of map unit:* 4 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Coulstone

*Percent of map unit:* 3 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Low-Base Sandstone Protected Backslope Woodland (F116AY045MO), Low-Base Sandstone Exposed Backslope Woodland (F116AY053MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### **Taterhill**

*Percent of map unit:* 3 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* Dry Footslope Forest (F116AY031MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## **73139—Poynor-Clarksville-Scholten complex, 8 to 15 percent slopes, stony**

### **Map Unit Setting**

*National map unit symbol:* 2vxq8

*Elevation:* 700 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Poynor and similar soils:* 35 percent

*Clarksville and similar soils:* 32 percent

*Scholten and similar soils:* 15 percent

*Minor components:* 18 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Poynor**

#### **Setting**

*Landform:* Ridges

*Landform position (two-dimensional):* Shoulder, summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### **Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 4 inches:* gravelly silt loam

## Custom Soil Resource Report

*E - 4 to 13 inches:* very gravelly silt loam  
*Bt1 - 13 to 24 inches:* extremely gravelly silt loam  
*2Bt2 - 24 to 79 inches:* clay

### Properties and qualities

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 0.1 percent  
*Depth to restrictive feature:* 14 to 40 inches to strongly contrasting textural stratification  
*Natural drainage class:* Well drained  
*Runoff class:* Low  
*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:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* B  
*Ecological site:* Low-Base Chert Upland Woodland (F116AY012MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Description of Clarksville

### Setting

*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over residuum weathered from dolomite

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 5 inches:* gravelly silt loam  
*E - 5 to 8 inches:* gravelly silt loam  
*Bt1 - 8 to 18 inches:* very gravelly loam  
*Bt2 - 18 to 42 inches:* very gravelly loam  
*2Bt3 - 42 to 79 inches:* clay

### Properties and qualities

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 0.1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*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:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* B  
*Ecological site:* Low-Base Chert Upland Woodland (F116AY012MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

**Description of Scholten**

**Setting**

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over pedisegment over residuum weathered from dolomite

**Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 3 inches:* gravelly silt loam  
*E - 3 to 8 inches:* gravelly silt loam  
*Bt1 - 8 to 17 inches:* very gravelly silty clay loam  
*2Btx - 17 to 41 inches:* very gravelly silt loam  
*3Bt2 - 41 to 79 inches:* gravelly clay

**Properties and qualities**

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 0.1 percent  
*Depth to restrictive feature:* 14 to 30 inches to fragipan  
*Natural drainage class:* Moderately well drained  
*Runoff class:* Very high  
*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 13 to 28 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Ecological site:* Low-Base Chert Upland Woodland (F116AY012MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

**Minor Components**

**Goss**

*Percent of map unit:* 5 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex

## Custom Soil Resource Report

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### **Taterhill**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* Dry Footslope Forest (F116AY031MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### **Firebaugh**

*Percent of map unit:* 4 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Shoulder, summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Low-Base Loamy Upland Woodland (F116AY007MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### **Gepp**

*Percent of map unit:* 4 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Shoulder, summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## **73140—Clarksville-Scholten complex, 15 to 45 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2vxq9

*Elevation:* 800 to 1,500 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Clarksville and similar soils:* 50 percent

*Scholten and similar soils:* 30 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*



## Description of Clarksville

### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Slope alluvium over residuum weathered from dolomite

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 6 inches:* very gravelly silt loam  
*E - 6 to 13 inches:* gravelly silt loam  
*Bt1 - 13 to 21 inches:* very gravelly silt loam  
*Bt2 - 21 to 43 inches:* extremely gravelly clay loam  
*2Bt3 - 43 to 79 inches:* very gravelly clay

### Properties and qualities

*Slope:* 15 to 45 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 1.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* B  
*Ecological site:* Low-Base Chert Protected Backslope Woodland (F116AY013MO),  
Low-Base Chert Exposed Backslope Woodland (F116AY049MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Description of Scholten

### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Slope alluvium over pedisidiment over residuum weathered from dolomite

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 6 inches:* very gravelly silt loam  
*E - 6 to 13 inches:* very gravelly silt loam  
*Bt1 - 13 to 34 inches:* extremely gravelly clay loam

## Custom Soil Resource Report

*2Btx - 34 to 58 inches: very gravelly loam*

*3Bt2 - 58 to 79 inches: very gravelly clay*

### Properties and qualities

*Slope: 15 to 45 percent*

*Percent of area covered with surface fragments: 1.6 percent*

*Depth to restrictive feature: 16 to 36 inches to fragipan*

*Natural drainage class: Moderately well drained*

*Runoff class: High*

*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 14 to 34 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Very low (about 3.0 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 6s*

*Hydrologic Soil Group: C*

*Ecological site: Low-Base Chert Protected Backslope Woodland (F116AY013MO),*

*Low-Base Chert Exposed Backslope Woodland (F116AY049MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

### Minor Components

#### Taterhill

*Percent of map unit: 5 percent*

*Landform: Hillslopes*

*Landform position (two-dimensional): Footslope*

*Landform position (three-dimensional): Base slope*

*Down-slope shape: Convex*

*Across-slope shape: Linear*

*Ecological site: Dry Footslope Forest (F116AY031MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

#### Gepp

*Percent of map unit: 5 percent*

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear*

*Across-slope shape: Convex*

*Ecological site: Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

#### Poynor

*Percent of map unit: 5 percent*

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear*

*Across-slope shape: Convex*

*Ecological site: Low-Base Chert Protected Backslope Woodland (F116AY013MO), Low-Base Chert Exposed Backslope Woodland (F116AY049MO)*

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

**Tilk**

*Percent of map unit:* 5 percent

*Landform:* Flood-plain steps

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

**73144—Courtois silt loam, 8 to 15 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 2vxqf

*Elevation:* 350 to 2,500 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Courtois and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Courtois**

**Setting**

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Loess over slope alluvium over residuum weathered from dolomite

**Typical profile**

*Ap - 0 to 7 inches:* silt loam

*Bt1 - 7 to 15 inches:* silty clay loam

*2Bt2 - 15 to 32 inches:* silty clay

*3Bt3 - 32 to 79 inches:* gravelly clay

**Properties and qualities**

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)

## Custom Soil Resource Report

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 7.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4s

*Hydrologic Soil Group:* C

*Ecological site:* Loamy Footslope Forest (F116AY032MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Caneyville

*Percent of map unit:* 6 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Shoulder, summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Loamy Dolomite Upland Woodland (F116AY018MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gepp

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gabriel

*Percent of map unit:* 4 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Wet Terrace Forest (F116AY035MO)

*Other vegetative classification:* Grass/Prairie (Herbaceous Vegetation)

#### Rock outcrop

*Percent of map unit:* 0 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Convex

*Across-slope shape:* Convex

**73269—Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery**

**Map Unit Setting**

*National map unit symbol:* 2vxrb  
*Elevation:* 800 to 1,100 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Brussels and similar soils:* 45 percent  
*Gasconade and similar soils:* 35 percent  
*Rock outcrop:* 15 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Brussels**

**Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Residuum weathered from dolomite

**Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 10 inches:* gravelly silty clay loam  
*Bt1 - 10 to 49 inches:* very gravelly silty clay loam  
*Bt2 - 49 to 79 inches:* gravelly silty clay loam

**Properties and qualities**

*Slope:* 35 to 90 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 1 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 7.3 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Ecological site:* Talus Foothill Forest (F116AY022MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Gasconade

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Residuum weathered from dolomite

#### Typical profile

*A - 0 to 9 inches:* flaggy clay  
*Bw - 9 to 14 inches:* very channery clay  
*R - 14 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 35 to 90 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* 4 to 20 inches to lithic bedrock  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 1 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 1.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Ecological site:* Dolomite Protected Cliff (R116AY014MO), Dolomite Exposed Cliff (R116AY017MO)  
*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Description of Rock Outcrop

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

#### Properties and qualities

*Slope:* 35 to 90 percent  
*Depth to restrictive feature:* 0 inches to lithic bedrock

## Custom Soil Resource Report

*Runoff class:* Very high

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

### Minor Components

#### Gatewood

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Chert Dolomite Upland Woodland (F116AY044MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## 73336—Rueter-Gepp complex, bench, 8 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 2q23m

*Elevation:* 800 to 1,200 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Rueter, benches, and similar soils:* 50 percent

*Gepp, benches, and similar soils:* 35 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Rueter, Benches

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from cherty limestone

#### Typical profile

*A - 0 to 5 inches:* gravelly silt loam

*E - 5 to 12 inches:* gravelly silt loam

*Bt1 - 12 to 24 inches:* very gravelly silt loam

*Bt2 - 24 to 43 inches:* very gravelly silty clay loam

## Custom Soil Resource Report

*2Bt3 - 43 to 79 inches: very cobbly clay*

### Properties and qualities

*Slope: 8 to 15 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Somewhat excessively drained*

*Runoff class: Medium*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Moderate (about 6.4 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 4e*

*Hydrologic Soil Group: C*

*Ecological site: Chert Upland Woodland (F116AY011MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

## Description of Gepp, Benches

### Setting

*Landform: Ridges*

*Landform position (two-dimensional): Summit, shoulder*

*Landform position (three-dimensional): Crest*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Slope alluvium over residuum weathered from dolomite*

### Typical profile

*A - 0 to 5 inches: gravelly silt loam*

*BA - 5 to 10 inches: gravelly silt loam*

*Bt1 - 10 to 16 inches: gravelly clay*

*2Bt2 - 16 to 79 inches: clay*

### Properties and qualities

*Slope: 8 to 15 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Well drained*

*Runoff class: High*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 0.20 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Moderate (about 6.2 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 4e*

*Hydrologic Soil Group: D*

*Ecological site: Chert Upland Woodland (F116AY011MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*



## **73339—Arkana-Gepp complex, 8 to 15 percent slopes, rocky, stony**

### **Map Unit Setting**

*National map unit symbol:* 2q23q  
*Elevation:* 500 to 1,500 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Arkana and similar soils:* 50 percent  
*Gepp and similar soils:* 35 percent  
*Minor components:* 1 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Arkana**

#### **Setting**

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Slope alluvium over residuum weathered from dolomite

#### **Typical profile**

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 7 inches:* very gravelly silt loam  
*B<sub>t1</sub> - 7 to 12 inches:* gravelly silty clay loam  
*2B<sub>t2</sub> - 12 to 30 inches:* clay  
*2R - 30 to 79 inches:* bedrock

#### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 0.1 percent  
*Depth to restrictive feature:* 24 to 45 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* 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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 3.4 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e

## Custom Soil Resource Report

*Hydrologic Soil Group:* D

*Ecological site:* Calcareous Dolomite Upland Woodland (F116AY009MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Description of Gepp

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*A - 0 to 10 inches:* very gravelly silt loam

*Bt1 - 10 to 19 inches:* gravelly silty clay loam

*2Bt2 - 19 to 79 inches:* clay

#### Properties and qualities

*Slope:* 8 to 15 percent

*Percent of area covered with surface fragments:* 0.1 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*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:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 6.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* B

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Rock outcrop

*Percent of map unit:* 1 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Linear

*Across-slope shape:* Convex

## **73340—Rueter-Gepp complex, 8 to 15 percent slopes, stony**

### **Map Unit Setting**

*National map unit symbol:* 2q23r  
*Elevation:* 800 to 1,200 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Rueter and similar soils:* 50 percent  
*Gepp and similar soils:* 35 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Rueter**

#### **Setting**

*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over residuum weathered from cherty limestone

#### **Typical profile**

*A - 0 to 6 inches:* very gravelly silt loam  
*E - 6 to 10 inches:* gravelly silt loam  
*Bt1 - 10 to 28 inches:* very gravelly silt loam  
*Bt2 - 28 to 42 inches:* very gravelly clay  
*2Bt3 - 42 to 79 inches:* very cobbly clay

#### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 0.1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.2 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e

## Custom Soil Resource Report

*Hydrologic Soil Group:* C

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Gepp

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Shoulder, summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*A - 0 to 4 inches:* gravelly silt loam

*BA - 4 to 9 inches:* very gravelly silt loam

*Bt1 - 9 to 17 inches:* gravelly clay

*2Bt2 - 17 to 79 inches:* clay

#### Properties and qualities

*Slope:* 8 to 15 percent

*Percent of area covered with surface fragments:* 0.1 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*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:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 5.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* B

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## 73341—Gepp-Arkana complex, 15 to 55 percent slopes, rocky

#### Map Unit Setting

*National map unit symbol:* 2q23s

*Elevation:* 500 to 1,500 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Gepp and similar soils:* 50 percent

*Arkana and similar soils:* 35 percent

*Minor components:* 1 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Gepp

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*A - 0 to 4 inches:* very gravelly silt loam

*Bt1 - 4 to 15 inches:* silty clay

*2Bt2 - 15 to 79 inches:* clay

#### Properties and qualities

*Slope:* 15 to 55 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* High

*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:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 5.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* B

*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed  
Backslope Woodland (F116AY062MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Arkana

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 9 inches:* very gravelly silt loam

*Bt1 - 9 to 14 inches:* very gravelly clay

## Custom Soil Resource Report

*2Bt2 - 14 to 29 inches: clay*  
*2R - 29 to 79 inches: bedrock*

### Properties and qualities

*Slope: 15 to 55 percent*  
*Depth to restrictive feature: 24 to 45 inches to lithic bedrock*  
*Natural drainage class: Well drained*  
*Runoff class: High*  
*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*  
*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*  
*Available water storage in profile: Very low (about 2.7 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 7e*  
*Hydrologic Soil Group: C*  
*Ecological site: Calcareous Dolomite Protected Backslope Forest (F116AY010MO),  
Calcareous Dolomite Exposed Backslope Woodland (F116AY047MO)*  
*Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)*

### Minor Components

#### Rock outcrop

*Percent of map unit: 1 percent*  
*Landform: Hillslopes*  
*Landform position (two-dimensional): Backslope*  
*Landform position (three-dimensional): Side slope*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*

## 73342—Alred-Arkana complex, 8 to 15 percent slopes, rocky

### Map Unit Setting

*National map unit symbol: 2q23t*  
*Elevation: 500 to 1,500 feet*  
*Mean annual precipitation: 39 to 49 inches*  
*Mean annual air temperature: 54 to 59 degrees F*  
*Frost-free period: 172 to 232 days*  
*Farmland classification: Not prime farmland*

### Map Unit Composition

*Alred and similar soils: 50 percent*  
*Arkana and similar soils: 35 percent*  
*Minor components: 1 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Alred

### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from cherty limestone

### Typical profile

*A - 0 to 8 inches:* very gravelly silt loam

*E - 8 to 11 inches:* gravelly silt loam

*Bt1 - 11 to 24 inches:* very gravelly silt loam

*2Bt2 - 24 to 79 inches:* cobbly clay

### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 14 to 40 inches to strongly contrasting textural stratification

*Natural drainage class:* Well drained

*Runoff class:* Medium

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 2.8 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* C

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Description of Arkana

### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 5 inches:* very gravelly silt loam

*Bt1 - 5 to 17 inches:* gravelly clay

*2Bt2 - 17 to 25 inches:* clay

*2R - 25 to 79 inches:* bedrock

### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 24 to 45 inches to lithic bedrock

## Custom Soil Resource Report

*Natural drainage class:* Well drained

*Runoff class:* Medium

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 2.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* C

*Ecological site:* Calcareous Dolomite Upland Woodland (F116AY009MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Minor Components

#### Rock outcrop

*Percent of map unit:* 1 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Convex

## 75417—Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded

### Map Unit Setting

*National map unit symbol:* 2w259

*Elevation:* 330 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Relfe and similar soils:* 50 percent

*Sandbur and similar soils:* 40 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Relfe

#### Setting

*Landform:* Flood plains

*Landform position (three-dimensional):* Rise

*Down-slope shape:* Convex



## Custom Soil Resource Report

*Across-slope shape:* Convex

*Parent material:* Sandy and gravelly alluvium

### Typical profile

*Ap - 0 to 6 inches:* very gravelly sandy loam

*C - 6 to 79 inches:* stratified extremely cobbly coarse sand to very gravelly loamy sand

### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 1.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* A

*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Description of Sandbur

### Setting

*Landform:* Flood plains

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium

### Typical profile

*Ap - 0 to 8 inches:* fine sandy loam

*C - 8 to 50 inches:* stratified loamy fine sand to silt loam

*2Btb - 50 to 79 inches:* very gravelly sandy loam

### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Runoff class:* Very low

*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:* More than 80 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 7.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* A

## Custom Soil Resource Report

*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Farewell

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Ecological site:* Wet Floodplain Step Forest (F116AY040MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Riverwash

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

## 75462—Huzzah sandy loam, 0 to 3 percent slopes, occasionally flooded

### Map Unit Setting

*National map unit symbol:* 2q29l

*Elevation:* 340 to 800 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Huzzah and similar soils:* 90 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Huzzah

#### Setting

*Landform:* Flood-plain steps

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy alluvium over sandy alluvium

#### Typical profile

*A1 - 0 to 6 inches:* sandy loam

*A2 - 6 to 23 inches:* fine sandy loam

*Bw - 23 to 47 inches:* fine sandy loam

*2C - 47 to 60 inches:* loamy sand

**Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Low  
*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:* More than 80 inches  
*Frequency of flooding:* Occasional  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 8.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* B  
*Ecological site:* Loamy Floodplain Step Forest (F116AY039MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

**76007—Cedargap gravelly loam, 1 to 3 percent slopes, rarely flooded**

**Map Unit Setting**

*National map unit symbol:* 2phq1  
*Elevation:* 820 to 1,340 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Cedargap and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Cedargap**

**Setting**

*Landform:* Drainageways  
*Parent material:* Gravelly alluvium

**Typical profile**

*Ap - 0 to 6 inches:* gravelly loam  
*A - 6 to 20 inches:* gravelly loam  
*Bw - 20 to 36 inches:* extremely gravelly sandy loam  
*C - 36 to 60 inches:* extremely gravelly sandy clay loam

**Properties and qualities**

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Low

## Custom Soil Resource Report

*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:* More than 80 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 5.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* B

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Minor Components

#### Cedargap

*Percent of map unit:* 10 percent

*Landform:* Stream terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

## 76022—Huzzah sandy loam, 1 to 3 percent slopes, occasionally flooded

### Map Unit Setting

*National map unit symbol:* 2phpz

*Elevation:* 340 to 800 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Huzzah and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Huzzah

#### Setting

*Landform:* Drainageways

*Parent material:* Loamy alluvium over sandy alluvium

#### Typical profile

*A1 - 0 to 6 inches:* sandy loam

*A2 - 6 to 23 inches:* fine sandy loam

*Bw - 23 to 47 inches:* fine sandy loam

## Custom Soil Resource Report

2C - 47 to 60 inches: loamy sand

### Properties and qualities

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*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:* More than 80 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 8.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* B

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Huzzah

*Percent of map unit:* 10 percent

*Landform:* Flood-plain steps

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## 76040—Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded

### Map Unit Setting

*National map unit symbol:* 2t7hd

*Elevation:* 500 to 900 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Relfe and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Relfe

#### Setting

*Landform:* Drainageways

## Custom Soil Resource Report

*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy and gravelly alluvium

### Typical profile

*A - 0 to 7 inches:* sandy loam  
*C - 7 to 79 inches:* very gravelly sand

### Properties and qualities

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Excessively drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)  
*Depth to water table:* About 60 to 79 inches  
*Frequency of flooding:* Occasional  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* A  
*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Minor Components

### Gladden

*Percent of map unit:* 5 percent  
*Landform:* Drainageways  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Tilk

*Percent of map unit:* 3 percent  
*Landform:* Terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Secesh

*Percent of map unit:* 2 percent  
*Landform:* Drainageways  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear

## Custom Soil Resource Report

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### **76046—Secesh silt loam, 1 to 3 percent slopes, rarely flooded**

#### **Map Unit Setting**

*National map unit symbol:* 2vxwd

*Elevation:* 400 to 900 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* All areas are prime farmland

#### **Map Unit Composition**

*Secesh and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### **Description of Secesh**

##### **Setting**

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Silty alluvium over gravelly alluvium

##### **Typical profile**

*Ap - 0 to 8 inches:* silt loam

*BE - 8 to 11 inches:* silt loam

*Bt1 - 11 to 27 inches:* gravelly loam

*2Bt2 - 27 to 79 inches:* very gravelly clay loam

##### **Properties and qualities**

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*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:* More than 80 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 7.2 inches)

##### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

## Custom Soil Resource Report

*Hydrologic Soil Group:* B

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Minor Components

#### **Tilk**

*Percent of map unit:* 10 percent

*Landform:* Drainageways

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### **Baylock**

*Percent of map unit:* 5 percent

*Landform:* Drainageways

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Wet Upland Drainageway Forest (F116AY036MO)



# **Soil Information for All Uses**

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## **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.

## **Recreational Development**

Recreational Development interpretations are tools designed to guide the user in identifying and evaluating the suitability of the soil for specific recreational uses. Example interpretations include camp areas, picnic areas, playgrounds, paths and trails, and off-road motorcycle trails.

### **Paths and Trails (Round Spring to Brushy Creek)**

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling.

The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

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.

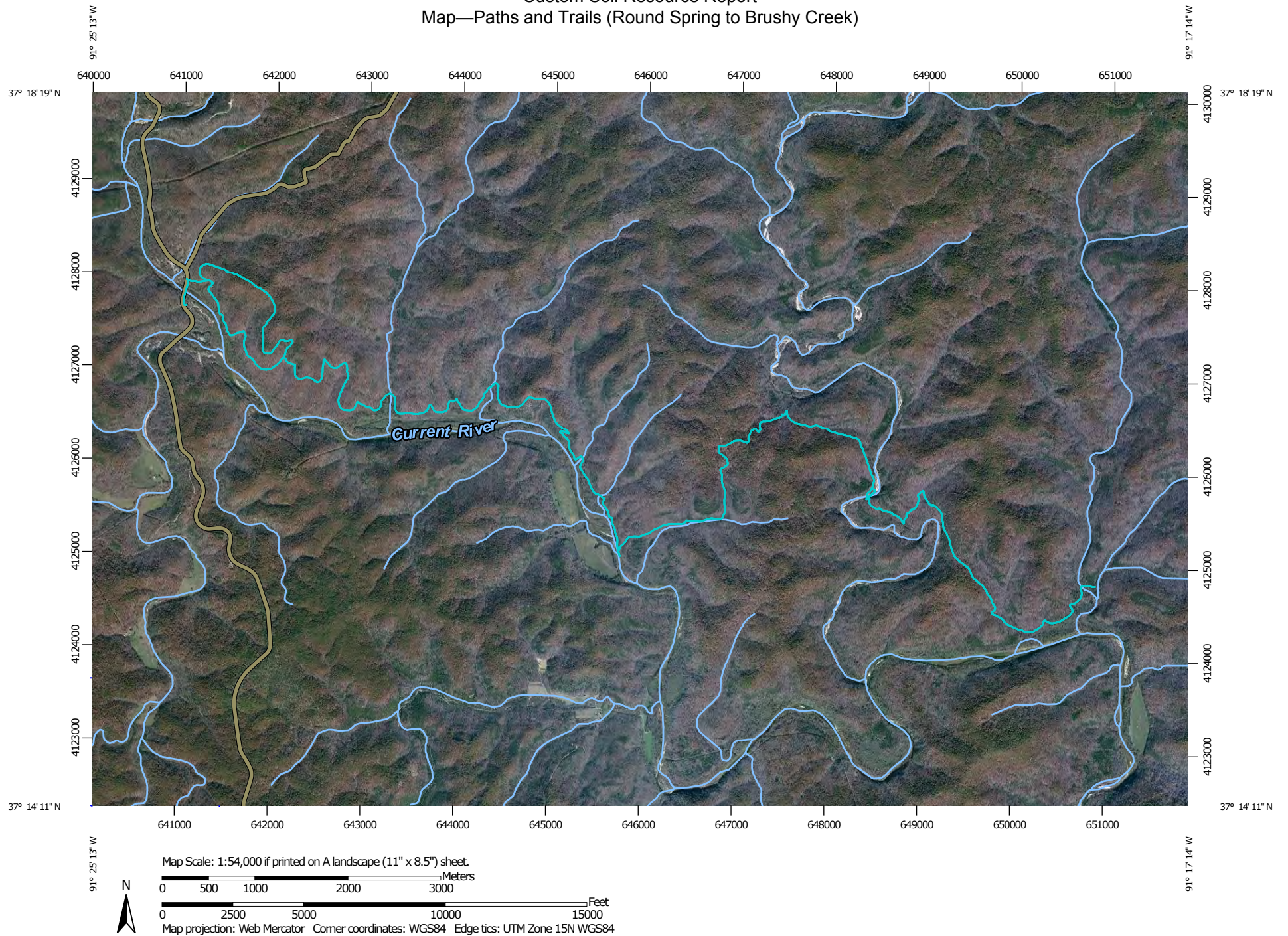
## Custom Soil Resource Report

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—Paths and Trails (Round Spring to Brushy Creek)






## MAP LEGEND

### Area of Interest (AOI)





 Area of Interest (AOI)

### Background





 Aerial Photography

### Soils





#### Soil Rating Polygons

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available


#### Soil Rating Lines

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available






#### Soil Rating Points

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

## MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Shannon County, Missouri  
 Survey Area Data: Version 15, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2010—Nov 14, 2010

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.

Custom Soil Resource Report

**Tables—Paths and Trails (Round Spring to Brushy Creek)**

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
73042	Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony	Very limited	Niangua (60%)	Large stones content (1.00)	1.9	31.3%
				Slope (1.00)		
				Dusty (0.07)		
			Bardley (30%)	Large stones content (1.00)		
				Slope (1.00)		
				Dusty (0.07)		
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony	Very limited	Alred (50%)	Slope (1.00)	1.2	19.8%
				Large stones content (0.76)		
				Dusty (0.07)		
			Rueter (35%)	Slope (1.00)		
				Large stones content (0.76)		
				Dusty (0.06)		
			Goss (5%)	Slope (1.00)		
				Dusty (0.07)		
			Gepp (4%)	Slope (1.00)		
				Dusty (0.07)		
			Coulstone (3%)	Slope (1.00)		
				Dusty (0.03)		
73139	Poynor-Clarksville-Scholten complex, 8 to 15 percent slopes, stony	Somewhat limited	Poynor (35%)	Dusty (0.07)	0.1	1.7%
			Clarksville (32%)	Dusty (0.05)		
			Scholten (15%)	Depth to saturated zone (0.82)		
				Dusty (0.07)		
			Goss (5%)	Dusty (0.07)		
			Gepp (4%)	Dusty (0.07)		
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony	Very limited	Clarksville (50%)	Slope (1.00)	0.5	7.5%
				Large stones content (0.53)		
				Dusty (0.07)		
			Scholten (30%)	Slope (1.00)		

# Custom Soil Resource Report

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Large stones content (0.53)		
				Dusty (0.05)		
			Taterhill (5%)	Water erosion (1.00)		
				Dusty (0.07)		
			Gepp (5%)	Slope (1.00)		
				Dusty (0.07)		
			Poynor (5%)	Slope (1.00)		
				Dusty (0.07)		
73144	Courtois silt loam, 8 to 15 percent slopes	Very limited	Courtois (85%)	Water erosion (1.00)	0.1	1.2%
				Dusty (0.07)		
			Gabriel (4%)	Depth to saturated zone (1.00)		
				Dusty (0.07)		
73269	Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery	Very limited	Brussels (45%)	Slope (1.00)	0.5	8.1%
				Large stones content (0.53)		
				Dusty (0.07)		
			Gasconade (35%)	Slope (1.00)		
				Too clayey (1.00)		
				Large stones content (0.53)		
				Dusty (0.07)		
			Gatewood (5%)	Slope (1.00)		
				Water erosion (1.00)		
				Dusty (0.07)		
73336	Rueter-Gepp complex, bench, 8 to 15 percent slopes	Somewhat limited	Rueter, benches (50%)	Dusty (0.07)	0.1	2.3%
			Gepp, benches (35%)	Dusty (0.07)		
73339	Arkana-Gepp complex, 8 to 15 percent slopes, rocky, stony	Very limited	Arkana (50%)	Gravel content (1.00)	0.2	3.3%
				Dusty (0.07)		
73340	Rueter-Gepp complex, 8 to 15 percent slopes, stony	Somewhat limited	Rueter (50%)	Dusty (0.06)	0.2	4.0%
			Gepp (35%)	Dusty (0.07)		
73341	Gepp-Arkana complex, 15 to	Very limited	Gepp (50%)	Slope (1.00)	0.7	11.5%
				Dusty (0.07)		

## Custom Soil Resource Report

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	55 percent slopes, rocky		Arkana (35%)	Slope (1.00)		
				Dusty (0.07)		
73342	Alred-Arkana complex, 8 to 15 percent slopes, rocky	Somewhat limited	Alred (50%)	Dusty (0.07)	0.1	1.7%
			Arkana (35%)	Dusty (0.07)		
75417	Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded	Somewhat limited	Relfe (50%)	Flooding (0.40)	0.2	3.1%
			Sandbur (40%)	Flooding (0.40)		
				Dusty (0.01)		
75462	Huzzah sandy loam, 0 to 3 percent slopes, occasionally flooded	Somewhat limited	Huzzah (90%)	Too sandy (0.05)	0.2	2.9%
76007	Cedargap gravelly loam, 1 to 3 percent slopes, rarely flooded	Somewhat limited	Cedargap (90%)	Dusty (0.04)	0.0	0.5%
			Cedargap (10%)	Dusty (0.04)		
76022	Huzzah sandy loam, 1 to 3 percent slopes, occasionally flooded	Somewhat limited	Huzzah (90%)	Too sandy (0.05)	0.0	0.6%
			Huzzah (10%)	Too sandy (0.05)		
76040	Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded	Somewhat limited	Relfe (90%)	Too sandy (0.02)	0.0	0.0%
			Gladden (5%)	Dusty (0.04)		
			Tilk (3%)	Dusty (0.03)		
			Secesh (2%)	Dusty (0.06)		
76046	Secesh silt loam, 1 to 3 percent slopes, rarely flooded	Somewhat limited	Secesh (85%)	Dusty (0.07)	0.0	0.4%
			Tilk (10%)	Dusty (0.03)		
<b>Totals for Area of Interest</b>					<b>6.2</b>	<b>100.0%</b>

Paths and Trails— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	5.1	82.8%
Somewhat limited	1.1	17.2%
<b>Totals for Area of Interest</b>	<b>6.2</b>	<b>100.0%</b>

### Rating Options—Paths and Trails (Round Spring to Brushy Creek)

*Aggregation Method:* Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

*Component Percent Cutoff: None Specified*

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

*Tie-break Rule: Higher*

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



# References

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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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)



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Agriculture

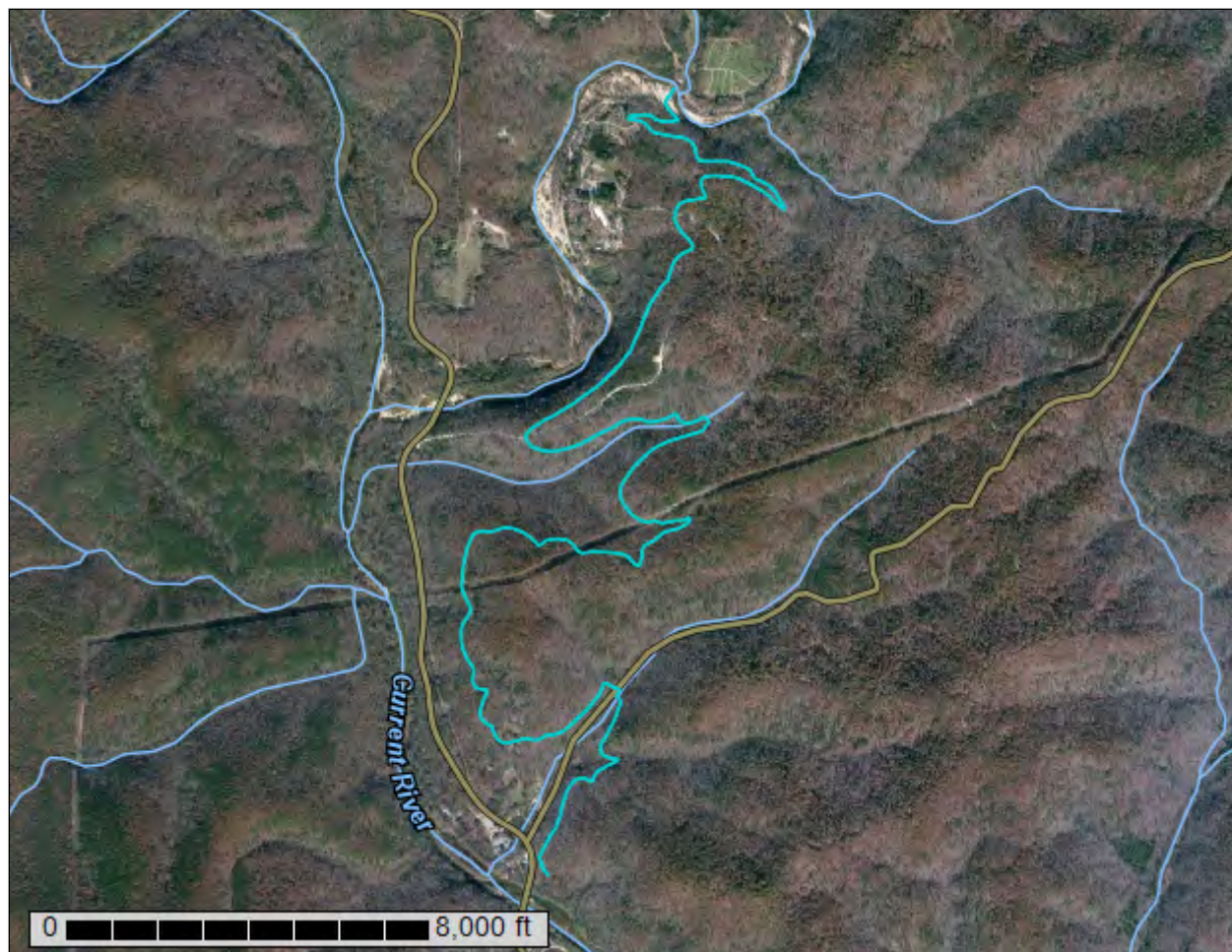
NRCS

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 Shannon County, Missouri

Round Spring to Camp Zoe



# Preface

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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://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) 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://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

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 Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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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.

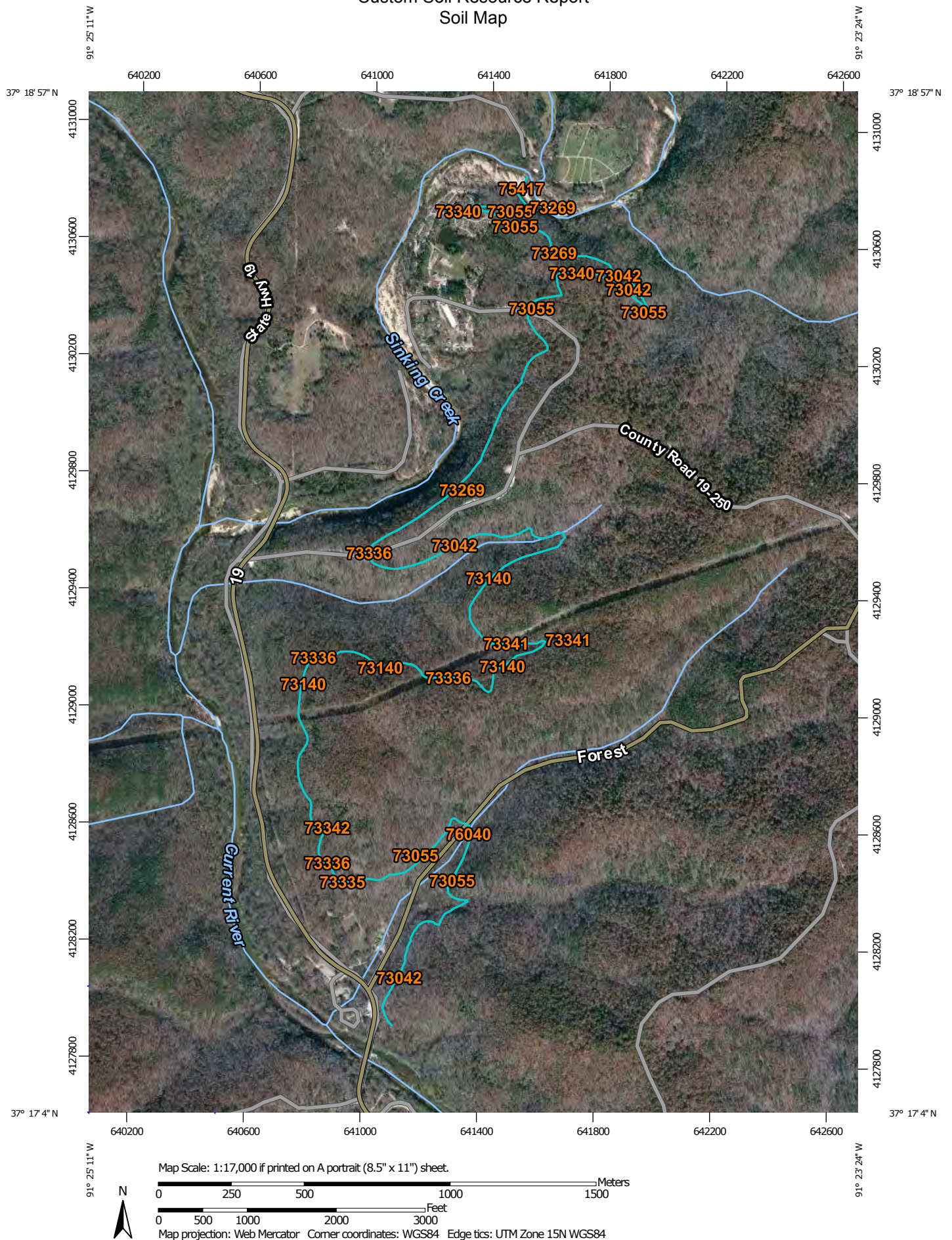


# Soil Map

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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




# Custom Soil Resource Report


## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)


### Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

### 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

### Water Features

 Streams and Canals


### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Shannon County, Missouri  
Survey Area Data: Version 15, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2010—Nov 14, 2010

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

Shannon County, Missouri (MO203)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
73042	Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony	0.4	19.8%
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony	0.6	26.1%
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony	0.6	24.7%
73269	Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery	0.3	11.6%
73335	Hobson-Rueter complex, 3 to 8 percent slopes	0.0	0.9%
73336	Rueter-Gepp complex, bench, 8 to 15 percent slopes	0.1	5.0%
73340	Rueter-Gepp complex, 8 to 15 percent slopes, stony	0.1	5.0%
73341	Gepp-Arkana complex, 15 to 55 percent slopes, rocky	0.1	2.8%
73342	Alred-Arkana complex, 8 to 15 percent slopes, rocky	0.1	2.4%
75417	Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded	0.0	1.2%
76040	Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded	0.0	0.5%
<b>Totals for Area of Interest</b>		<b>2.3</b>	<b>100.0%</b>

## 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

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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.



## Shannon County, Missouri

### 73042—Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony

#### Map Unit Setting

*National map unit symbol:* 2qpg1  
*Elevation:* 800 to 1,200 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Niangua and similar soils:* 60 percent  
*Bardley and similar soils:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Niangua

##### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over residuum weathered from dolomite over dolomite

##### Typical profile

*A - 0 to 3 inches:* very gravelly silt loam  
*E - 3 to 14 inches:* very gravelly silt loam  
*2Bt - 14 to 52 inches:* clay  
*2R - 52 to 80 inches:* bedrock

##### Properties and qualities

*Slope:* 15 to 50 percent  
*Percent of area covered with surface fragments:* 9.0 percent  
*Depth to restrictive feature:* 40 to 60 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* Very high  
*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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

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*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Bardley

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite over dolomite

#### Typical profile

*A - 0 to 4 inches:* very gravelly silt loam

*E - 4 to 8 inches:* extremely gravelly silt loam

*2Bt - 8 to 27 inches:* clay

*3R - 27 to 80 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 50 percent

*Percent of area covered with surface fragments:* 9.0 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Very high

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 2.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* D

*Ecological site:* Chert Dolomite Protected Backslope Forest (F116AY016MO), Chert Dolomite Exposed Backslope Woodland (F116AY048MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## 73055—Alred-Rueter complex, 15 to 35 percent slopes, very stony

#### Map Unit Setting

*National map unit symbol:* 2vxq7

*Elevation:* 700 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland



### Map Unit Composition

*Alred and similar soils:* 50 percent

*Rueter and similar soils:* 35 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Alred

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 4 inches:* gravelly silt loam

*E - 4 to 8 inches:* gravelly silt loam

*Bt1 - 8 to 22 inches:* very gravelly silty clay loam

*2Bt2 - 22 to 79 inches:* gravelly clay

#### Properties and qualities

*Slope:* 15 to 35 percent

*Percent of area covered with surface fragments:* 2.0 percent

*Depth to restrictive feature:* 14 to 40 inches to strongly contrasting textural stratification

*Natural drainage class:* Well drained

*Runoff class:* High

*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

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 3.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C

*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Rueter

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

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### Typical profile

*A - 0 to 6 inches:* very gravelly silt loam  
*E - 6 to 10 inches:* gravelly silt loam  
*Bt1 - 10 to 28 inches:* very gravelly silt loam  
*Bt2 - 28 to 42 inches:* very gravelly clay  
*2Bt3 - 42 to 79 inches:* very cobbly clay

### Properties and qualities

*Slope:* 15 to 35 percent  
*Percent of area covered with surface fragments:* 2.0 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Goss

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* Chert Upland Woodland (F116AY011MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gepp

*Percent of map unit:* 4 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Coulstone

*Percent of map unit:* 3 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Low-Base Sandstone Protected Backslope Woodland (F116AY045MO), Low-Base Sandstone Exposed Backslope Woodland (F116AY053MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### **Taterhill**

*Percent of map unit:* 3 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* Dry Footslope Forest (F116AY031MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## **73140—Clarksville-Scholten complex, 15 to 45 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2vxq9

*Elevation:* 800 to 1,500 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Clarksville and similar soils:* 50 percent

*Scholten and similar soils:* 30 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Clarksville**

#### **Setting**

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### **Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 6 inches:* very gravelly silt loam

*E - 6 to 13 inches:* gravelly silt loam

*Bt1 - 13 to 21 inches:* very gravelly silt loam

## Custom Soil Resource Report

*Bt2 - 21 to 43 inches: extremely gravelly clay loam*

*2Bt3 - 43 to 79 inches: very gravelly clay*

### Properties and qualities

*Slope: 15 to 45 percent*

*Percent of area covered with surface fragments: 1.6 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Somewhat excessively drained*

*Runoff class: Medium*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Low (about 5.0 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 6s*

*Hydrologic Soil Group: B*

*Ecological site: Low-Base Chert Protected Backslope Woodland (F116AY013MO),  
Low-Base Chert Exposed Backslope Woodland (F116AY049MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

## Description of Scholten

### Setting

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Slope alluvium over pedis sediment over residuum weathered from dolomite*

### Typical profile

*Oi - 0 to 1 inches: slightly decomposed plant material*

*A - 1 to 6 inches: very gravelly silt loam*

*E - 6 to 13 inches: very gravelly silt loam*

*Bt1 - 13 to 34 inches: extremely gravelly clay loam*

*2Btx - 34 to 58 inches: very gravelly loam*

*3Bt2 - 58 to 79 inches: very gravelly clay*

### Properties and qualities

*Slope: 15 to 45 percent*

*Percent of area covered with surface fragments: 1.6 percent*

*Depth to restrictive feature: 16 to 36 inches to fragipan*

*Natural drainage class: Moderately well drained*

*Runoff class: High*

*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 14 to 34 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Very low (about 3.0 inches)*

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C

*Ecological site:* Low-Base Chert Protected Backslope Woodland (F116AY013MO),

Low-Base Chert Exposed Backslope Woodland (F116AY049MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Taterhill

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* Dry Footslope Forest (F116AY031MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Gepp

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Poynor

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Low-Base Chert Protected Backslope Woodland (F116AY013MO), Low-Base Chert Exposed Backslope Woodland (F116AY049MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Tilk

*Percent of map unit:* 5 percent

*Landform:* Flood-plain steps

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

**73269—Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery**

**Map Unit Setting**

*National map unit symbol:* 2vxrb  
*Elevation:* 800 to 1,100 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Brussels and similar soils:* 45 percent  
*Gasconade and similar soils:* 35 percent  
*Rock outcrop:* 15 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Brussels**

**Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Residuum weathered from dolomite

**Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 10 inches:* gravelly silty clay loam  
*Bt1 - 10 to 49 inches:* very gravelly silty clay loam  
*Bt2 - 49 to 79 inches:* gravelly silty clay loam

**Properties and qualities**

*Slope:* 35 to 90 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 1 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 7.3 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Ecological site:* Talus Foothill Forest (F116AY022MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Gasconade

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Residuum weathered from dolomite

#### Typical profile

*A - 0 to 9 inches:* flaggy clay  
*Bw - 9 to 14 inches:* very channery clay  
*R - 14 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 35 to 90 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* 4 to 20 inches to lithic bedrock  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 1 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 1.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Ecological site:* Dolomite Protected Cliff (R116AY014MO), Dolomite Exposed Cliff (R116AY017MO)  
*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Description of Rock Outcrop

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

#### Properties and qualities

*Slope:* 35 to 90 percent  
*Depth to restrictive feature:* 0 inches to lithic bedrock

## Custom Soil Resource Report

*Runoff class:* Very high

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

### **Minor Components**

#### **Gatewood**

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Chert Dolomite Upland Woodland (F116AY044MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## **73335—Hobson-Rueter complex, 3 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2q23l

*Elevation:* 700 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Hobson and similar soils:* 50 percent

*Rueter and similar soils:* 35 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Hobson**

#### **Setting**

*Landform:* Interfluves

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over pedisediment over residuum weathered from limestone and sandstone

#### **Typical profile**

*A - 0 to 10 inches:* silt loam

*BE - 10 to 16 inches:* silt loam

*Bt1 - 16 to 32 inches:* silt loam



## Custom Soil Resource Report

*2Btx - 32 to 42 inches: very gravelly silt loam*

*3Bt2 - 42 to 79 inches: very gravelly clay*

### Properties and qualities

*Slope: 3 to 8 percent*

*Depth to restrictive feature: 22 to 37 inches to fragipan*

*Natural drainage class: Moderately well drained*

*Runoff class: Medium*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.06 in/hr)*

*Depth to water table: About 18 to 30 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Moderate (about 6.9 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 3e*

*Hydrologic Soil Group: C*

*Ecological site: Fragipan Upland Woodland (F116AY004MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

## Description of Rueter

### Setting

*Landform: Interfluves*

*Landform position (two-dimensional): Summit*

*Landform position (three-dimensional): Interfluve*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Slope alluvium over residuum weathered from dolomite*

### Typical profile

*A - 0 to 4 inches: very gravelly silt loam*

*E - 4 to 17 inches: gravelly silt loam*

*Bt1 - 17 to 32 inches: very gravelly silt loam*

*Bt2 - 32 to 43 inches: very gravelly silty clay*

*2Bt3 - 43 to 79 inches: very cobbly clay*

### Properties and qualities

*Slope: 3 to 8 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Somewhat excessively drained*

*Runoff class: Medium*

*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*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Low (about 5.8 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 3e*

*Hydrologic Soil Group: C*

## Custom Soil Resource Report

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### 73336—Rueter-Gepp complex, bench, 8 to 15 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2q23m

*Elevation:* 800 to 1,200 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Rueter, benches, and similar soils:* 50 percent

*Gepp, benches, and similar soils:* 35 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Rueter, Benches

##### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from cherty limestone

##### Typical profile

*A - 0 to 5 inches:* gravelly silt loam

*E - 5 to 12 inches:* gravelly silt loam

*Bt1 - 12 to 24 inches:* very gravelly silt loam

*Bt2 - 24 to 43 inches:* very gravelly silty clay loam

*2Bt3 - 43 to 79 inches:* very cobbly clay

##### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 6.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

## Custom Soil Resource Report

*Hydrologic Soil Group:* C

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Gepp, Benches

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from dolomite

#### Typical profile

*A - 0 to 5 inches:* gravelly silt loam

*BA - 5 to 10 inches:* gravelly silt loam

*Bt1 - 10 to 16 inches:* gravelly clay

*2Bt2 - 16 to 79 inches:* clay

#### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 0.20 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 6.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* D

*Ecological site:* Chert Upland Woodland (F116AY011MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### 73340—Rueter-Gepp complex, 8 to 15 percent slopes, stony

#### Map Unit Setting

*National map unit symbol:* 2q23r

*Elevation:* 800 to 1,200 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Rueter and similar soils: 50 percent*

*Gepp and similar soils: 35 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Rueter

#### Setting

*Landform: Ridges*

*Landform position (two-dimensional): Shoulder, summit*

*Landform position (three-dimensional): Crest*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Slope alluvium over residuum weathered from cherty limestone*

#### Typical profile

*A - 0 to 6 inches: very gravelly silt loam*

*E - 6 to 10 inches: gravelly silt loam*

*Bt1 - 10 to 28 inches: very gravelly silt loam*

*Bt2 - 28 to 42 inches: very gravelly clay*

*2Bt3 - 42 to 79 inches: very cobbly clay*

#### Properties and qualities

*Slope: 8 to 15 percent*

*Percent of area covered with surface fragments: 0.1 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Somewhat excessively drained*

*Runoff class: Medium*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Low (about 5.2 inches)*

#### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 4e*

*Hydrologic Soil Group: C*

*Ecological site: Chert Upland Woodland (F116AY011MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

### Description of Gepp

#### Setting

*Landform: Ridges*

*Landform position (two-dimensional): Shoulder, summit*

*Landform position (three-dimensional): Crest*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Slope alluvium over residuum weathered from dolomite*

#### Typical profile

*A - 0 to 4 inches: gravelly silt loam*

*BA - 4 to 9 inches: very gravelly silt loam*

## Custom Soil Resource Report

*Bt1 - 9 to 17 inches: gravelly clay*

*2Bt2 - 17 to 79 inches: clay*

### Properties and qualities

*Slope: 8 to 15 percent*

*Percent of area covered with surface fragments: 0.1 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Well drained*

*Runoff class: Medium*

*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: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Low (about 5.9 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 4e*

*Hydrologic Soil Group: B*

*Ecological site: Chert Upland Woodland (F116AY011MO)*

*Other vegetative classification: Trees/Timber (Woody Vegetation)*

## 73341—Gepp-Arkana complex, 15 to 55 percent slopes, rocky

### Map Unit Setting

*National map unit symbol: 2q23s*

*Elevation: 500 to 1,500 feet*

*Mean annual precipitation: 39 to 49 inches*

*Mean annual air temperature: 54 to 59 degrees F*

*Frost-free period: 172 to 232 days*

*Farmland classification: Farmland of statewide importance*

### Map Unit Composition

*Gepp and similar soils: 50 percent*

*Arkana and similar soils: 35 percent*

*Minor components: 1 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Gepp

#### Setting

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear*

*Across-slope shape: Convex*

*Parent material: Slope alluvium over residuum weathered from dolomite*

## Custom Soil Resource Report

### Typical profile

*A - 0 to 4 inches:* very gravelly silt loam  
*Bt1 - 4 to 15 inches:* silty clay  
*2Bt2 - 15 to 79 inches:* clay

### Properties and qualities

*Slope:* 15 to 55 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*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:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* B  
*Ecological site:* Chert Protected Backslope Forest (F116AY002MO), Chert Exposed Backslope Woodland (F116AY062MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

## Description of Arkana

### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Slope alluvium over residuum weathered from dolomite

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 9 inches:* very gravelly silt loam  
*Bt1 - 9 to 14 inches:* very gravelly clay  
*2Bt2 - 14 to 29 inches:* clay  
*2R - 29 to 79 inches:* bedrock

### Properties and qualities

*Slope:* 15 to 55 percent  
*Depth to restrictive feature:* 24 to 45 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* C

*Ecological site:* Calcareous Dolomite Protected Backslope Forest (F116AY010MO),

Calcareous Dolomite Exposed Backslope Woodland (F116AY047MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

**Minor Components**

**Rock outcrop**

*Percent of map unit:* 1 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

**73342—Alred-Arkana complex, 8 to 15 percent slopes, rocky**

**Map Unit Setting**

*National map unit symbol:* 2q23t

*Elevation:* 500 to 1,500 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Alred and similar soils:* 50 percent

*Arkana and similar soils:* 35 percent

*Minor components:* 1 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Alred**

**Setting**

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Slope alluvium over residuum weathered from cherty limestone

**Typical profile**

*A - 0 to 8 inches:* very gravelly silt loam

*E - 8 to 11 inches:* gravelly silt loam

*Bt1 - 11 to 24 inches:* very gravelly silt loam

*2Bt2 - 24 to 79 inches:* cobbly clay

**Properties and qualities**

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* 14 to 40 inches to strongly contrasting textural stratification  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* C  
*Ecological site:* Chert Upland Woodland (F116AY011MO)  
*Other vegetative classification:* Trees/Timber (Woody Vegetation)

**Description of Arkana**

**Setting**

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Slope alluvium over residuum weathered from dolomite

**Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 5 inches:* very gravelly silt loam  
*Bt1 - 5 to 17 inches:* gravelly clay  
*2Bt2 - 17 to 25 inches:* clay  
*2R - 25 to 79 inches:* bedrock

**Properties and qualities**

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* 24 to 45 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*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  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* C  
*Ecological site:* Calcareous Dolomite Upland Woodland (F116AY009MO)



## Custom Soil Resource Report

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

### Minor Components

#### Rock outcrop

*Percent of map unit:* 1 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Convex

## 75417—Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded

### Map Unit Setting

*National map unit symbol:* 2w259

*Elevation:* 330 to 1,300 feet

*Mean annual precipitation:* 39 to 49 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 172 to 232 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Relfe and similar soils:* 50 percent

*Sandbur and similar soils:* 40 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Relfe

#### Setting

*Landform:* Flood plains

*Landform position (three-dimensional):* Rise

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Sandy and gravelly alluvium

#### Typical profile

*Ap - 0 to 6 inches:* very gravelly sandy loam

*C - 6 to 79 inches:* stratified extremely cobbly coarse sand to very gravelly loamy sand

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Frequent

## Custom Soil Resource Report

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 1.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* A

*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Description of Sandbur

#### Setting

*Landform:* Flood plains

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium

#### Typical profile

*Ap - 0 to 8 inches:* fine sandy loam

*C - 8 to 50 inches:* stratified loamy fine sand to silt loam

*2Btb - 50 to 79 inches:* very gravelly sandy loam

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Runoff class:* Very low

*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:* More than 80 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 7.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* A

*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Farewell

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Ecological site:* Wet Floodplain Step Forest (F116AY040MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Riverwash

*Percent of map unit:* 5 percent

## Custom Soil Resource Report

*Landform:* Flood plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Ecological site:* Sandy/Gravelly Floodplain Forest (F116AY042MO)

### 76040—Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded

#### Map Unit Setting

*National map unit symbol:* 2t7hd  
*Elevation:* 500 to 900 feet  
*Mean annual precipitation:* 39 to 49 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 172 to 232 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Relfe and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Relfe

##### Setting

*Landform:* Drainageways  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy and gravelly alluvium

##### Typical profile

*A - 0 to 7 inches:* sandy loam  
*C - 7 to 79 inches:* very gravelly sand

##### Properties and qualities

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Excessively drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)  
*Depth to water table:* About 60 to 79 inches  
*Frequency of flooding:* Occasional  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w

## Custom Soil Resource Report

*Hydrologic Soil Group:* A

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

### Minor Components

#### Gladden

*Percent of map unit:* 5 percent

*Landform:* Drainageways

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Tilk

*Percent of map unit:* 3 percent

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Trees/Timber (Woody Vegetation)

#### Secesh

*Percent of map unit:* 2 percent

*Landform:* Drainageways

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Gravelly/Loamy Upland Drainageway Forest (F116AY037MO)

*Other vegetative classification:* Mixed/Transitional (Mixed Native Vegetation)

# **Soil Information for All Uses**

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## **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.

## **Recreational Development**

Recreational Development interpretations are tools designed to guide the user in identifying and evaluating the suitability of the soil for specific recreational uses. Example interpretations include camp areas, picnic areas, playgrounds, paths and trails, and off-road motorcycle trails.

### **Paths and Trails (Round Spring to Camp Zoe)**

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling.

The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

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.

## Custom Soil Resource Report

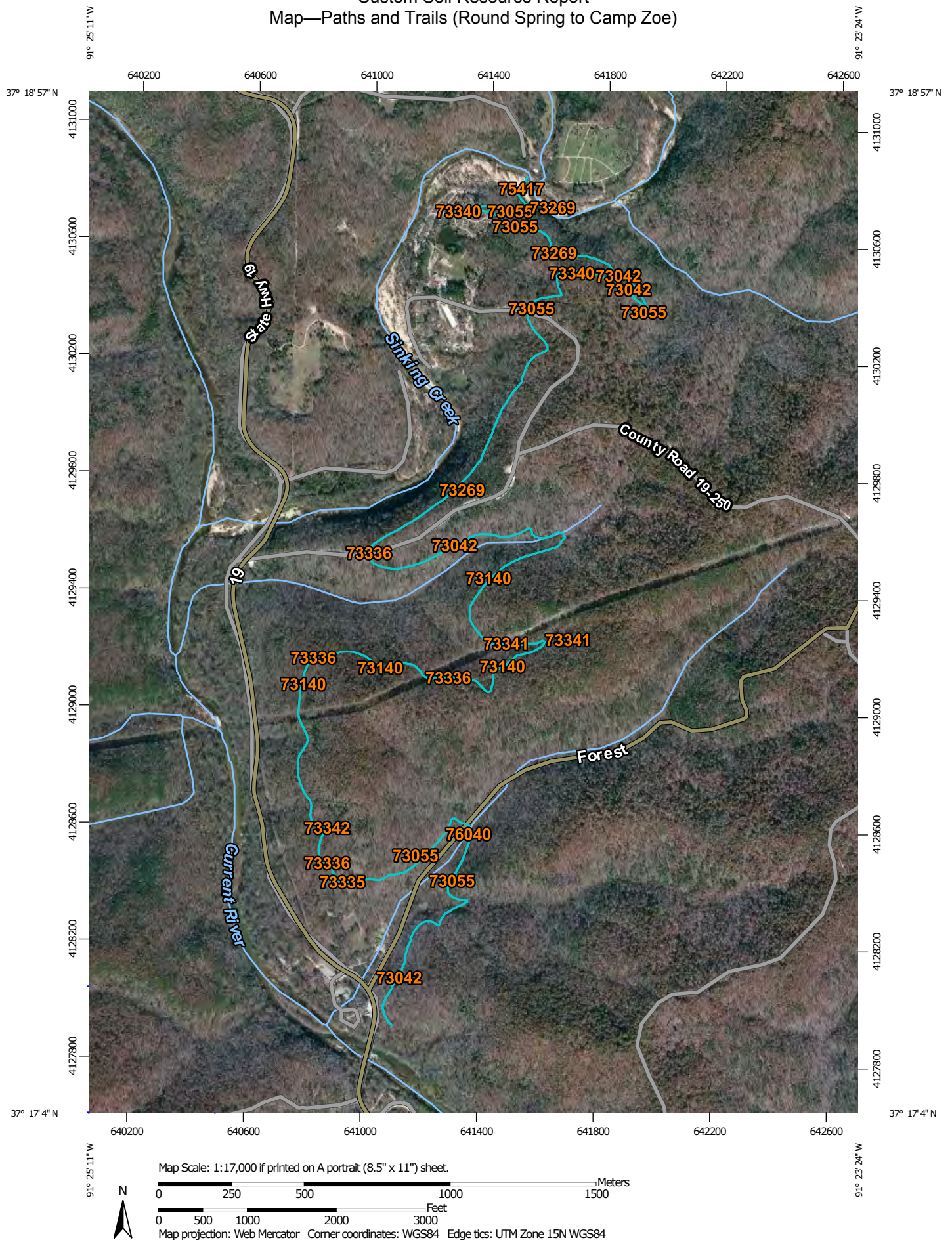
Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not 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—Paths and Trails (Round Spring to Camp Zoe)




## MAP LEGEND

### Area of Interest (AOI)





 Area of Interest (AOI)

### Background





 Aerial Photography

### Soils





#### Soil Rating Polygons

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available


#### Soil Rating Lines

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available






#### Soil Rating Points

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

## MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Shannon County, Missouri  
 Survey Area Data: Version 15, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2010—Nov 14, 2010

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.



Custom Soil Resource Report

**Tables—Paths and Trails (Round Spring to Camp Zoe)**

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
73042	Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony	Very limited	Niangua (60%)	Large stones content (1.00)	0.4	19.8%
				Slope (1.00)		
				Dusty (0.07)		
			Bardley (30%)	Large stones content (1.00)		
				Slope (1.00)		
				Dusty (0.07)		
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony	Very limited	Alred (50%)	Slope (1.00)	0.6	26.1%
				Large stones content (0.76)		
				Dusty (0.07)		
			Rueter (35%)	Slope (1.00)		
				Large stones content (0.76)		
				Dusty (0.06)		
			Goss (5%)	Slope (1.00)		
				Dusty (0.07)		
			Gepp (4%)	Slope (1.00)		
				Dusty (0.07)		
			Coulstone (3%)	Slope (1.00)		
				Dusty (0.03)		
			Taterhill (3%)	Water erosion (1.00)		
				Dusty (0.07)		
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony	Very limited	Clarksville (50%)	Slope (1.00)	0.6	24.7%
				Large stones content (0.53)		
				Dusty (0.07)		
			Scholten (30%)	Slope (1.00)		
				Large stones content (0.53)		
				Dusty (0.05)		
			Taterhill (5%)	Water erosion (1.00)		
				Dusty (0.07)		
			Gepp (5%)	Slope (1.00)		
				Dusty (0.07)		
			Poynor (5%)	Slope (1.00)		

# Custom Soil Resource Report

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Dusty (0.07)		
73269	Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery	Very limited	Brussels (45%)	Slope (1.00)	0.3	11.6%
				Large stones content (0.53)		
				Dusty (0.07)		
			Gasconade (35%)	Slope (1.00)		
				Too clayey (1.00)		
				Large stones content (0.53)		
				Dusty (0.07)		
			Gatewood (5%)	Slope (1.00)		
				Water erosion (1.00)		
				Dusty (0.07)		
73335	Hobson-Rueter complex, 3 to 8 percent slopes	Somewhat limited	Hobson (50%)	Dusty (0.07)	0.0	0.9%
			Rueter (35%)	Dusty (0.07)		
73336	Rueter-Gepp complex, bench, 8 to 15 percent slopes	Somewhat limited	Rueter, benches (50%)	Dusty (0.07)	0.1	5.0%
			Gepp, benches (35%)	Dusty (0.07)		
73340	Rueter-Gepp complex, 8 to 15 percent slopes, stony	Somewhat limited	Rueter (50%)	Dusty (0.06)	0.1	5.0%
			Gepp (35%)	Dusty (0.07)		
73341	Gepp-Arkana complex, 15 to 55 percent slopes, rocky	Very limited	Gepp (50%)	Slope (1.00)	0.1	2.8%
				Dusty (0.07)		
			Arkana (35%)	Slope (1.00)		
				Dusty (0.07)		
73342	Alred-Arkana complex, 8 to 15 percent slopes, rocky	Somewhat limited	Alred (50%)	Dusty (0.07)	0.1	2.4%
			Arkana (35%)	Dusty (0.07)		
75417	Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded	Somewhat limited	Relfe (50%)	Flooding (0.40)	0.0	1.2%
			Sandbur (40%)	Flooding (0.40)		
				Dusty (0.01)		
76040	Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded	Somewhat limited	Relfe (90%)	Too sandy (0.02)	0.0	0.5%
			Gladden (5%)	Dusty (0.04)		
			Tilk (3%)	Dusty (0.03)		
			Secesh (2%)	Dusty (0.06)		
Totals for Area of Interest					2.3	100.0%

## Custom Soil Resource Report

Paths and Trails— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	1.9	85.0%
Somewhat limited	0.3	15.0%
<b>Totals for Area of Interest</b>	<b>2.3</b>	<b>100.0%</b>

### Rating Options—Paths and Trails (Round Spring to Camp Zoe)

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

### Paths and Trails (Round Spring to Camp Zoe)

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling.

The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

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).

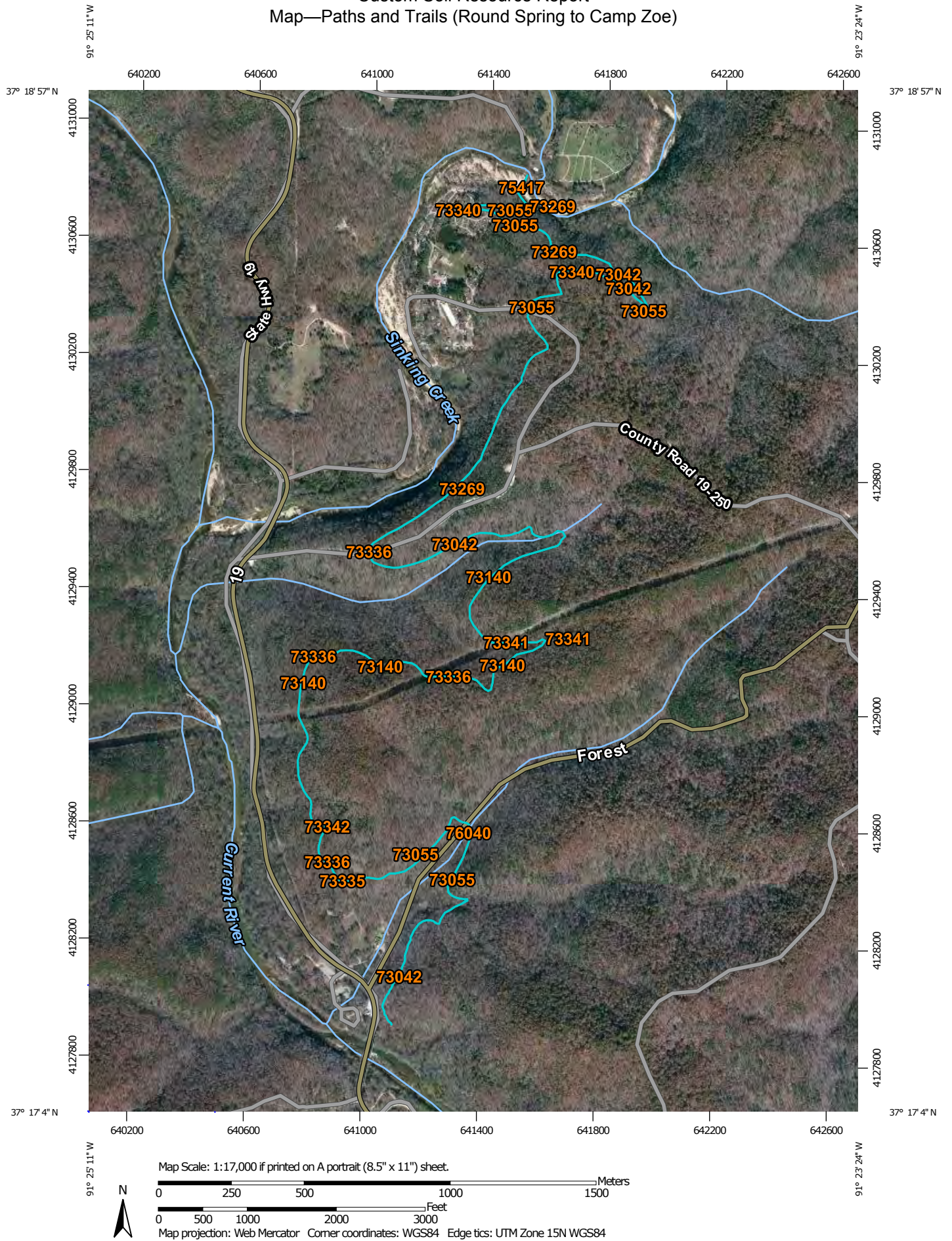
The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit 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.

## Custom Soil Resource Report

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—Paths and Trails (Round Spring to Camp Zoe)




## MAP LEGEND

### Area of Interest (AOI)





 Area of Interest (AOI)

### Background





 Aerial Photography

### Soils





#### Soil Rating Polygons

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available


#### Soil Rating Lines

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available






#### Soil Rating Points

 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

## MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Soil Survey Area: Shannon County, Missouri  
 Survey Area Data: Version 15, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2010—Nov 14, 2010

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Custom Soil Resource Report

**Tables—Paths and Trails (Round Spring to Camp Zoe)**

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
73042	Niangua-Bardley complex, 15 to 50 percent slopes, extremely stony	Very limited	Niangua (60%)	Large stones content (1.00)	0.4	19.8%
				Slope (1.00)		
				Dusty (0.07)		
			Bardley (30%)	Large stones content (1.00)		
				Slope (1.00)		
				Dusty (0.07)		
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony	Very limited	Alred (50%)	Slope (1.00)	0.6	26.1%
				Large stones content (0.76)		
				Dusty (0.07)		
			Rueter (35%)	Slope (1.00)		
				Large stones content (0.76)		
				Dusty (0.06)		
			Goss (5%)	Slope (1.00)		
				Dusty (0.07)		
			Gepp (4%)	Slope (1.00)		
				Dusty (0.07)		
			Coulstone (3%)	Slope (1.00)		
				Dusty (0.03)		
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony	Very limited	Clarksville (50%)	Water erosion (1.00)	0.6	24.7%
				Dusty (0.07)		
				Dusty (0.07)		
			Scholten (30%)	Slope (1.00)		
				Large stones content (0.53)		
				Dusty (0.05)		
			Taterhill (5%)	Water erosion (1.00)		
				Dusty (0.07)		
			Gepp (5%)	Slope (1.00)		
				Dusty (0.07)		
			Poynor (5%)	Slope (1.00)		

# Custom Soil Resource Report

Paths and Trails— Summary by Map Unit — Shannon County, Missouri (MO203)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Dusty (0.07)		
73269	Brussels-Gasconade-Rock outcrop complex, 35 to 90 percent slopes, very bouldery	Very limited	Brussels (45%)	Slope (1.00)	0.3	11.6%
				Large stones content (0.53)		
				Dusty (0.07)		
			Gasconade (35%)	Slope (1.00)		
				Too clayey (1.00)		
				Large stones content (0.53)		
				Dusty (0.07)		
			Gatewood (5%)	Slope (1.00)		
				Water erosion (1.00)		
				Dusty (0.07)		
73335	Hobson-Rueter complex, 3 to 8 percent slopes	Somewhat limited	Hobson (50%)	Dusty (0.07)	0.0	0.9%
			Rueter (35%)	Dusty (0.07)		
73336	Rueter-Gepp complex, bench, 8 to 15 percent slopes	Somewhat limited	Rueter, benches (50%)	Dusty (0.07)	0.1	5.0%
			Gepp, benches (35%)	Dusty (0.07)		
73340	Rueter-Gepp complex, 8 to 15 percent slopes, stony	Somewhat limited	Rueter (50%)	Dusty (0.06)	0.1	5.0%
			Gepp (35%)	Dusty (0.07)		
73341	Gepp-Arkana complex, 15 to 55 percent slopes, rocky	Very limited	Gepp (50%)	Slope (1.00)	0.1	2.8%
				Dusty (0.07)		
			Arkana (35%)	Slope (1.00)		
				Dusty (0.07)		
73342	Alred-Arkana complex, 8 to 15 percent slopes, rocky	Somewhat limited	Alred (50%)	Dusty (0.07)	0.1	2.4%
			Arkana (35%)	Dusty (0.07)		
75417	Relfe-Sandbur complex, 0 to 2 percent slopes, frequently flooded	Somewhat limited	Relfe (50%)	Flooding (0.40)	0.0	1.2%
			Sandbur (40%)	Flooding (0.40)		
				Dusty (0.01)		
76040	Relfe sandy loam, 1 to 3 percent slopes, occasionally flooded	Somewhat limited	Relfe (90%)	Too sandy (0.02)	0.0	0.5%
			Gladden (5%)	Dusty (0.04)		
			Tilk (3%)	Dusty (0.03)		
			Secesh (2%)	Dusty (0.06)		
Totals for Area of Interest					2.3	100.0%



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Paths and Trails— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	1.9	85.0%
Somewhat limited	0.3	15.0%
<b>Totals for Area of Interest</b>	<b>2.3</b>	<b>100.0%</b>

### Rating Options—Paths and Trails (Round Spring to Camp Zoe)

*Aggregation Method:* Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

*Component Percent Cutoff:* None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

*Tie-break Rule:* Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

# References

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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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

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://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)