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Conservation
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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 Cuyahoga County, Ohio

2018 Area 2 Envirothon



Preface

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

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://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 (<https://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).

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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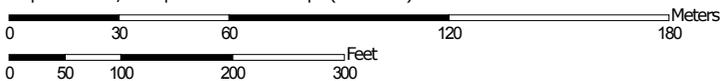
Soil Map

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

Custom Soil Resource Report Soil Map (2018 Area 2 Envirothon)



Map Scale: 1:2,050 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

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 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 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: Cuyahoga County, Ohio
 Survey Area Data: Version 16, Sep 25, 2017

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

Date(s) aerial images were photographed: Aug 16, 2014—Oct 12, 2014

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 (2018 Area 2 Envirothon)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ct	Condit silty clay loam	5.3	24.3%
HaA	Haskins loam, 0 to 2 percent slopes	0.4	2.0%
MgA	Mahoning silt loam, 0 to 2 percent slopes	15.4	70.0%
MgB	Mahoning silt loam, 2 to 6 percent slopes	0.8	3.7%
Totals for Area of Interest		22.0	100.0%

Map Unit Descriptions (2018 Area 2 Envirothon)

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.

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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.

Cuyahoga County, Ohio

Ct—Condit silty clay loam

Map Unit Setting

National map unit symbol: 9myg
Elevation: 800 to 1,000 feet
Mean annual precipitation: 31 to 42 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 140 to 195 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Condit and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Condit

Setting

Landform: Depressions on ground moraines
Parent material: Till

Typical profile

H1 - 0 to 7 inches: silty clay loam
H2 - 7 to 52 inches: silty clay loam
H3 - 52 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Forage suitability group: Unnamed (G139XY000OH)
Hydric soil rating: Yes

Minor Components

Mahoning

Percent of map unit: 15 percent
Landform: Till plains
Hydric soil rating: No

HaA—Haskins loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 9myz
Elevation: 600 to 1,300 feet
Mean annual precipitation: 27 to 42 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 130 to 200 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Haskins and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haskins

Setting

Landform: Beach ridges, terraces
Parent material: Lacustrine deposits and/or outwash and/or till

Typical profile

H1 - 0 to 9 inches: loam
H2 - 9 to 33 inches: sandy clay loam
H3 - 33 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: Unnamed (G139XYC-2OH)
Hydric soil rating: No

Minor Components

Jimtown

Percent of map unit: 5 percent
Landform: Terraces

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Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Mahoning

Percent of map unit: 5 percent

Landform: Till plains

Hydric soil rating: No

Mermill

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

MgA—Mahoning silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2v02z

Elevation: 590 to 1,970 feet

Mean annual precipitation: 33 to 52 inches

Mean annual air temperature: 43 to 52 degrees F

Frost-free period: 135 to 215 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Mahoning and similar soils: 85 percent

Minor components: 15 percent

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

Description of Mahoning

Setting

Landform: Till plains

Landform position (two-dimensional): Summit, footslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Till

Typical profile

Ap - 0 to 7 inches: silt loam

Eg - 7 to 9 inches: silt loam

Btg - 9 to 12 inches: silty clay loam

Bt1 - 12 to 20 inches: silty clay

Bt2 - 20 to 30 inches: silty clay

BCt - 30 to 36 inches: clay loam

C - 36 to 60 inches: clay loam

Custom Soil Resource Report

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Ellsworth

Percent of map unit: 5 percent
Landform: Till plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Miner

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Trumbull

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

MgB—Mahoning silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2v032
Elevation: 590 to 1,970 feet
Mean annual precipitation: 33 to 52 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 135 to 215 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Mahoning and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mahoning

Setting

Landform: Till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Till

Typical profile

Ap - 0 to 7 inches: silt loam
Eg - 7 to 9 inches: silt loam
Btg - 9 to 12 inches: silty clay loam
Bt1 - 12 to 20 inches: silty clay
Bt2 - 20 to 30 inches: silty clay
BCt - 30 to 36 inches: clay loam
C - 36 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D

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Hydric soil rating: No

Minor Components

Ellsworth

Percent of map unit: 10 percent

Landform: Till plains

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Trumbull

Percent of map unit: 5 percent

Landform: Depressions

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

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

Construction Materials

Construction materials interpretations are tools designed to provide guidance to users in selecting a site for potential source of various materials. Individual soils or groups of soils may be selected as a potential source because they are close at hand, are the only source available, or they meet some or all of the physical or chemical properties required for the intended application. Example interpretations include roadfill, sand and gravel, topsoil and reclamation material.

Topsoil Source (OH) (2018 Area 2 Envirothon)

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The soils are rated "good," "fair," or "poor" as potential sources of topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock, and toxic material.

Numerical ratings between 0.00 and 0.99 are given after the specified features. These numbers indicate the degree to which the features limit the soils as sources of topsoil. The lower the number, the greater the limitation.

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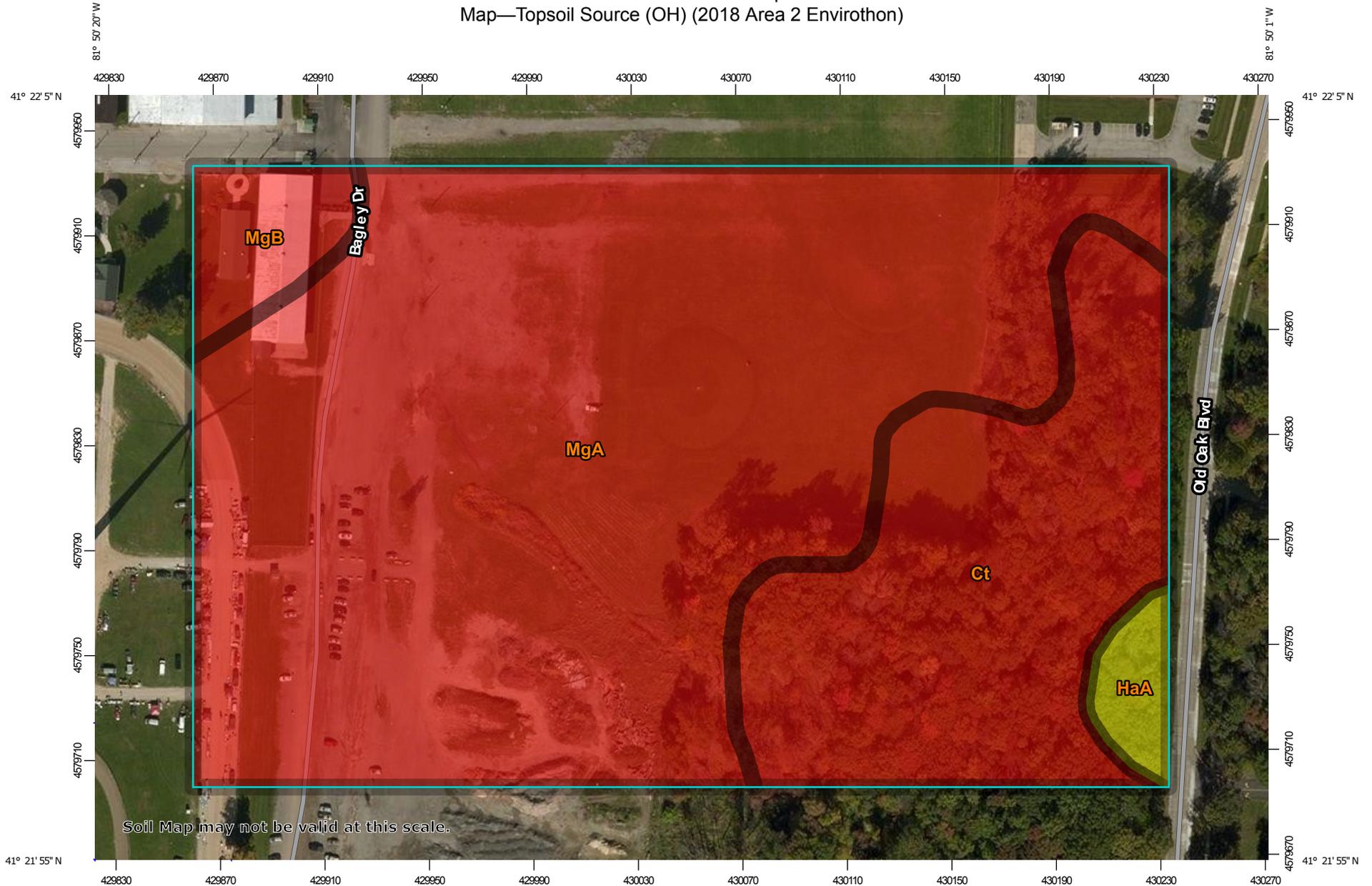
The surface layer of most soils is generally preferred for topsoil because of its content of organic matter. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

The 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 the one shown for the map unit. The percent composition of each component in a particular map unit is given to help the user better understand the extent to which the rating applies to the map unit.

Other components with different ratings may occur in each map unit. The ratings for all components, regardless the aggregated rating of the map unit, 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.

Differences between this interpretation for Ohio and the national interpretation: The Ohio interpretation does not consider cemented pan in the ratings.

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Map—Topsoil Source (OH) (2018 Area 2 Envirothon)



Map Scale: 1:2,050 if printed on A landscape (11" x 8.5") sheet.

0 30 60 120 180 Meters

0 50 100 200 300 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

- Area of Interest (AOI)**
 -  Area of Interest (AOI)
- Background**
 -  Aerial Photography
- Soils**
 - Soil Rating Polygons**
 -  Poor
 -  Fair
 -  Good
 -  Not rated or not available
 - Soil Rating Lines**
 -  Poor
 -  Fair
 -  Good
 -  Not rated or not available
 - Soil Rating Points**
 -  Poor
 -  Fair
 -  Good
 -  Not rated or not available
- Water Features**
 -  Streams and Canals
- Transportation**
 -  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads

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 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

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 Survey Area Data: Version 16, Sep 25, 2017

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Date(s) aerial images were photographed: Aug 16, 2014—Oct 12, 2014

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Custom Soil Resource Report

Tables—Topsoil Source (OH) (2018 Area 2 Envirothon)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Ct	Condit silty clay loam	Poor	Condit (85%)	Wetness (0.00)	5.3	24.3%
				Too clayey (0.50)		
HaA	Haskins loam, 0 to 2 percent slopes	Fair	Haskins (85%)	Wetness (0.29)	0.4	2.0%
MgA	Mahoning silt loam, 0 to 2 percent slopes	Poor	Mahoning (85%)	Wetness (0.00)	15.4	70.0%
				Too clayey (0.48)		
			Ellsworth (5%)	Wetness (0.00)		
				Too clayey (0.56)		
				Too acid (0.95)		
			Miner (5%)	Wetness (0.00)		
				Too clayey (0.00)		
			Trumbull (5%)	Wetness (0.00)		
Too clayey (0.26)						
MgB	Mahoning silt loam, 2 to 6 percent slopes	Poor	Mahoning (85%)	Wetness (0.00)	0.8	3.7%
				Too clayey (0.48)		
			Ellsworth (10%)	Wetness (0.00)		
				Too clayey (0.56)		
				Too acid (0.95)		
			Trumbull (5%)	Wetness (0.00)		
				Too clayey (0.26)		
			Totals for Area of Interest			

Rating	Acres in AOI	Percent of AOI
Poor	21.5	98.0%
Fair	0.4	2.0%
Totals for Area of Interest	22.0	100.0%

Rating Options—Topsoil Source (OH) (2018 Area 2 Envirothon)

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Lower

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.

Camp Areas (OH) (2018 Area 2 Envirothon)

Camp areas are tracts of land used intensively as sites for tents, trailers, campers, and the accompanying activities of outdoor living. Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic.

The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock, saturated hydraulic conductivity (Ksat), and toxic substances in the soil.

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 development. "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. "Slightly limited" indicates that the soil has some features that slightly impact the specified use. The limitations can be easily overcome or minimized. "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 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

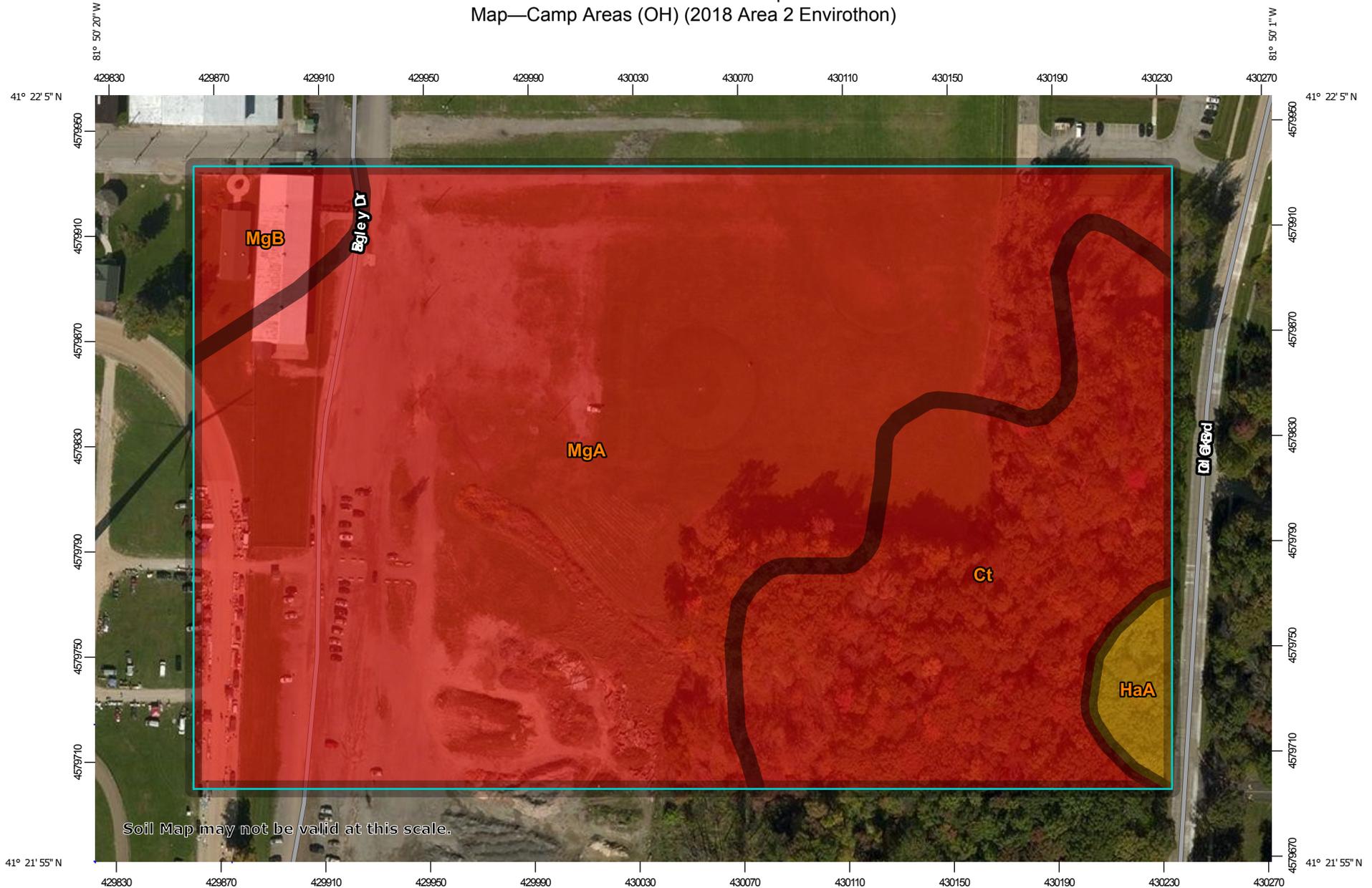
Custom Soil Resource Report

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 the one shown for the map unit. The percent composition of each component in a particular map unit is given to help the user better understand the extent to which the rating applies to the map unit.

Other components with different ratings may occur in each map unit. The ratings for all components, regardless the aggregated rating of the map unit, 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.

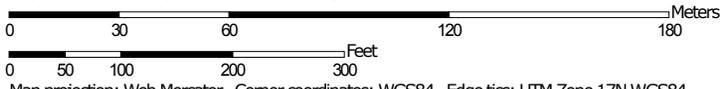
Differences between this interpretation for Ohio and the national interpretation: The Ohio interpretation does not consider cemented pans in the ratings and it uses different rules for slope, percolation, depth to water table, and surface stones. It will give a rating for soils with an organic surface, whereas the national rule will not because the sieves are not populated.

Custom Soil Resource Report
Map—Camp Areas (OH) (2018 Area 2 Envirothon)



Soil Map may not be valid at this scale.

Map Scale: 1:2,050 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

- Area of Interest (AOI)**
 -  Area of Interest (AOI)
 - Soils**
 - Soil Rating Polygons**
 -  Very limited
 -  Somewhat limited
 -  Slightly limited
 -  Not limited
 -  Not rated or not available
 - Soil Rating Lines**
 -  Very limited
 -  Somewhat limited
 -  Slightly limited
 -  Not limited
 -  Not rated or not available
 - Soil Rating Points**
 -  Very limited
 -  Somewhat limited
 -  Slightly limited
 -  Not limited
 -  Not rated or not available
 - 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 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 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: Cuyahoga County, Ohio
 Survey Area Data: Version 16, Sep 25, 2017

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

Date(s) aerial images were photographed: Aug 16, 2014—Oct 12, 2014

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—Camp Areas (OH) (2018 Area 2 Envirothon)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI					
Ct	Condit silty clay loam	Very limited	Condit (85%)	Depth to saturated zone (1.00)	5.3	24.3%					
				Ponding (1.00)							
				Restricted permeability (0.96)							
HaA	Haskins loam, 0 to 2 percent slopes	Somewhat limited	Haskins (85%)	Restricted permeability (0.99)	0.4	2.0%					
				Depth to saturated zone (0.87)							
MgA	Mahoning silt loam, 0 to 2 percent slopes	Very limited	Mahoning (85%)	Depth to saturated zone (1.00)	15.4	70.0%					
				Restricted permeability (1.00)							
			Ellsworth (5%)	Depth to saturated zone (1.00)							
				Restricted permeability (1.00)							
			Miner (5%)	Depth to saturated zone (1.00)							
				Ponding (1.00)							
				Restricted permeability (1.00)							
			Trumbull (5%)	Depth to saturated zone (1.00)							
				Ponding (1.00)							
				Restricted permeability (1.00)							
			MgB	Mahoning silt loam, 2 to 6 percent slopes			Very limited	Mahoning (85%)	Depth to saturated zone (1.00)	0.8	3.7%
									Restricted permeability (1.00)		

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Ellsworth (10%)	Depth to saturated zone (1.00)		
				Restricted permeability (1.00)		
			Trumbull (5%)	Depth to saturated zone (1.00)		
				Ponding (1.00)		
				Restricted permeability (1.00)		
Totals for Area of Interest					22.0	100.0%

Rating	Acres in AOI	Percent of AOI
Very limited	21.5	98.0%
Somewhat limited	0.4	2.0%
Totals for Area of Interest	22.0	100.0%

Rating Options—Camp Areas (OH) (2018 Area 2 Envirothon)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Management

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

Pond Reservoir Area (OH) (2018 Area 2 Envirothon)

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

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use.

Custom Soil Resource Report

"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 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 the one shown for the map unit. The percent composition of each component in a particular map unit is given to help the user better understand the extent to which the rating applies to the map unit.

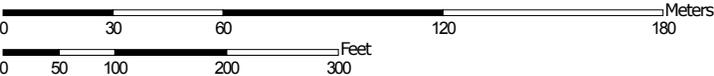
Other components with different ratings may occur in each map unit. The ratings for all components, regardless the aggregated rating of the map unit, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may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

Differences between this interpretation for Ohio and the national interpretation: The Ohio interpretation uses different rules for seepage and bedrock and does not contain a rule for cemented pans. This interpretation includes a rule for soil slippage potential.

Custom Soil Resource Report
Map—Pond Reservoir Area (OH) (2018 Area 2 Envirothon)



Map Scale: 1:2,050 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

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 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 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: Cuyahoga County, Ohio
 Survey Area Data: Version 16, Sep 25, 2017

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

Date(s) aerial images were photographed: Aug 16, 2014—Oct 12, 2014

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

Tables—Pond Reservoir Area (OH) (2018 Area 2 Envirothon)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Ct	Condit silty clay loam	Not limited	Condit (85%)		5.3	24.3%
HaA	Haskins loam, 0 to 2 percent slopes	Somewhat limited	Haskins (85%)	Seepage (0.50)	0.4	2.0%
MgA	Mahoning silt loam, 0 to 2 percent slopes	Not limited	Mahoning (85%)		15.4	70.0%
			Miner (5%)			
			Trumbull (5%)			
MgB	Mahoning silt loam, 2 to 6 percent slopes	Somewhat limited	Mahoning (85%)	Slope (0.08)	0.8	3.7%
			Ellsworth (10%)	Slope (0.08)		
Totals for Area of Interest					22.0	100.0%

Rating	Acres in AOI	Percent of AOI
Not limited	20.7	94.4%
Somewhat limited	1.2	5.6%
Totals for Area of Interest	22.0	100.0%

Rating Options—Pond Reservoir Area (OH) (2018 Area 2 Envirothon)

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher