July 22, 2023

ECOLOGY & BASELINE REPORT FOR: SWT MAEDC SALT RIVER SWMP

SITE ASSESSMENT BY: KAITLIN M. FLICK

The SWT MAEDC Salt River SWMP site has 2.4 acres tucked behind a soybean field in Macon, County on a Moniteau silt loam soil that is occasionally flooded. The site is located on the northern border of the soybean field in the image above. The site is not accessible during the crop growing season, however attached is a drone image of the field. From the drones view and my observation, it appears the site has shrubs, fallow soil exposed and trees growing. The site does not have any waste or trash disposed on it or any unpermitted materials or structures. After soybean harvest in the fall, I plan to return and make another assessment to determine plant species at the site. Attached are soil maps that show and explain the sites soil physical properties, hydrologic soil rating, ecology assessments and the University of Missouri site assessment which outlines endangered species in the area.

Soil Map—Macon County, Missouri

Map Scale: 1:1,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N 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 1:24,000.

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: Macon County, Missouri
Survey Area Data: Version 25, Sep 6, 2022

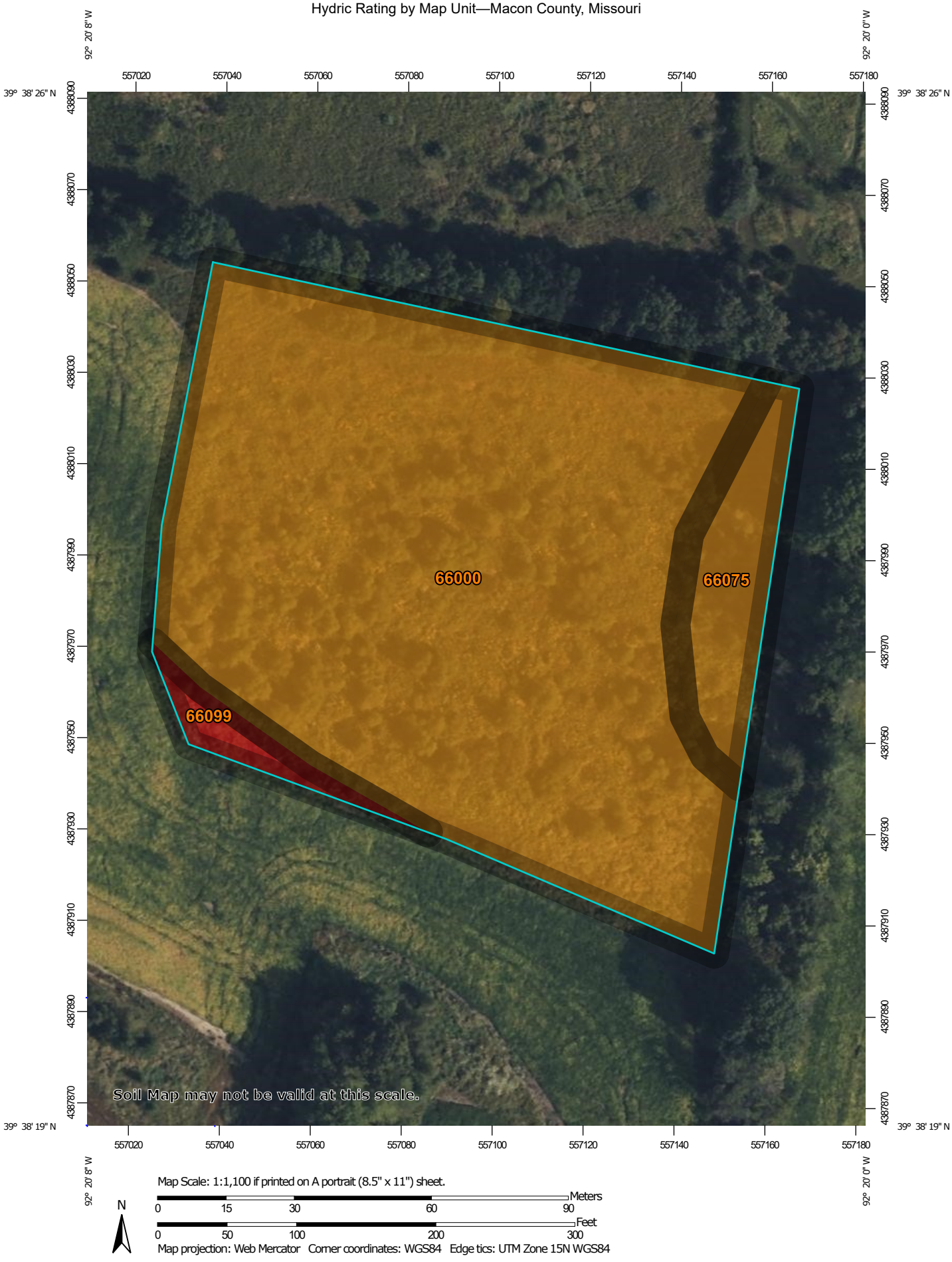
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 14, 2022—Oct 1, 2022

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
66000	Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded	3.3	88.7%
66075	Chequest silty clay loam, 0 to 2 percent slopes, occasionally flooded	0.3	8.6%
66099	Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded	0.1	2.7%
Totals for Area of Interest		**3.7**	**100.0%**



Map Scale: 1:1,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- 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

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Survey Area Data: Version 25, Sep 6, 2022

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

Date(s) aerial images were photographed: Sep 14, 2022—Oct 1, 2022

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Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
66000	Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded	90	3.3	88.7%
66075	Chequest silty clay loam, 0 to 2 percent slopes, occasionally flooded	93	0.3	8.6%
66099	Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded	100	0.1	2.7%
Totals for Area of Interest			**3.7**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

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.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

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.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

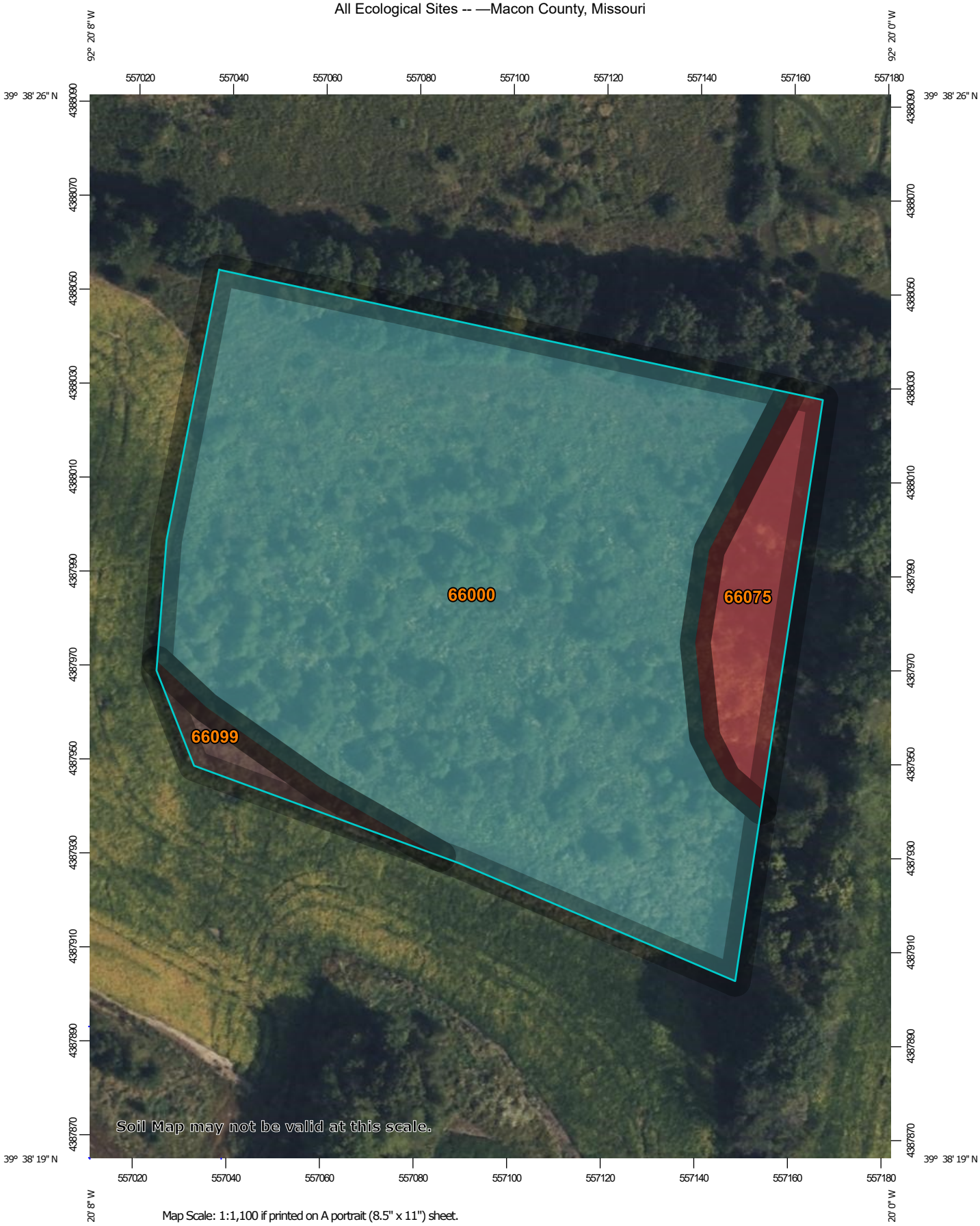
Hydrologic Soil Group and Surface Runoff–Macon County, Missouri			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
66000—Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded			
Moniteau	90	—	C/D

Hydrologic Soil Group and Surface Runoff–Macon County, Missouri			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
66075—Chequest silty clay loam, 0 to 2 percent slopes, occasionally flooded			
Chequest	90	Medium	D
66099—Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded			
Piopolis	90	—	C/D

Data Source Information

Soil Survey Area: Macon County, Missouri
Survey Area Data: Version 25, Sep 6, 2022

All Ecological Sites -- —Macon County, Missouri



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N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

F115XB025MO

F115XB030MO

R115XC001MO

Not rated or not available

Soil Rating Lines

F115XB025MO

F115XB030MO

R115XC001MO

Not rated or not available

Soil Rating Points

F115XB025MO

F115XB030MO

R115XC001MO

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

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All Ecological Sites —

Map unit symbol	Map unit name	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
66000	Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded	Moniteau (90%)	F115XB025MO — Wet Terrace Forest	3.3	88.7%
		Freeburg (10%)	F115XB025MO — Wet Terrace Forest		
66075	Chequest silty clay loam, 0 to 2 percent slopes, occasionally flooded	Chequest (90%)	R115XC001MO — Wet Floodplain Prairie	0.3	8.6%
		Dockery (7%)	F115XB031MO — Loamy Floodplain Forest		
		Wabash (3%)	F114XB203IN — Wet Floodplain Forest		
66099	Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded	Piopolis (90%)	F115XB030MO — Wet Floodplain Woodland	0.1	2.7%
		Arbela (7%)	R109XY038MO — Wet Terrace Prairie		
		Chequest (3%)	R115XC001MO — Wet Floodplain Prairie		
Totals for Area of Interest				**3.7**	**100.0%**

Extension
University of Missouri

Ag Site Report

Prepared on Jul 24 2023

Evaluation Site

Geographic Summary

Map Info

Evaluation Site Area	3.4 Acres
County	Macon (MO)
Legal Description (Central Section)	Sec. 23, T56N, R13W, 5th PM
Center of Site Latitude/Longitude (Degrees)	39° 38' 22" N 92° 20' 4" W
Center of Site Latitude/Longitude (Decimal Degrees)	39.63970 N -92.33458 W

Demographics

Population

Map Info

Distance	Number of Persons (2020)	Persons per Square Mile
Within 1 Mile	33	10.5
Within 5 Miles	719	9.2

Source: U.S. Census Bureau, 2020 Decennial Census

Population

Map Info

Distance	Number of Persons (2020)	Persons per Square Mile
Within 1 Mile	33	10.5
Within 5 Miles	719	9.2

Source: U.S. Census Bureau, 2020 Decennial Census

Hydrologic Summary

Streams (length in feet)

Map Info

Total Streams	Perennial	Intermittent	Canal or Ditch	Pipelines Carrying Water	Other Streams
0	0	0	0	0	0

Source: USGS National Hydrography Dataset (NHD), 2021

Wetlands

Map Info

Wetland Type	Wetland Description	Acres
Report Area	Total wetlands acres in the report area	

Source: U.S. Fish & Wildlife Service, National Wetlands Inventory, December 2018. (classification descriptions)

12-Digit Hydrologic Units

Map Info

HU ID	Watershed (HU Name)	Farm Acres in HU	Total HU Acreage
071100060205	Narrows Creek-Middle Fork Salt River	1.60	29,455
071100060208	Rich Land Creek-Middle Fork Salt River	1.79	33,161

Source: USGS Watershed Boundary Dataset, 2019

Soils and Productivity

SOILS

Map Info

Map Unit Symbol	Map Unit Name	Acres	Percent of Area	Hydrologic Group	Productivity Index (NCCPI)	Productivity Index Crop
66000	Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded	3.0	87.39	C/D	71.4	Soybeans
66075	Chequest silty clay loam, 0 to 2 percent slopes, occasionally flooded	0.3	9.97	D	69.4	Corn
66099	Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded	0.1	2.64	C/D	50.2	Corn
--	Report Area	3.4	100.00	--	70.6	Average

Source: USDA NRCS SSURGO Database, accessed October 2022 via the Geospatial Data Gateway

Environmental Concerns

Threatened and Endangered Species

Map Info

Species	County	Group	Status
Gray bat	Macon (MO)	Mammals	Endangered
Indiana bat	Macon (MO)	Mammals	Endangered
Northern Long-Eared Bat	Macon (MO)	Mammals	Threatened

Source: U.S. Fish & Wildlife Service Environmental Conservation Online System (ECOS), obtained by request, September, 2019. Note: the listing of endangered species in your county does not indicate that they are present on your land.

Flood Hazards

Map Info

Acres in Floodway	Acres in 100-Year Floodplain	Acres in 500-Year Floodplain	Notes
0	3.78	0	Flood hazards have not been determined for a portion of this site

Source: FEMA National Flood Hazard Layer, March 2023

Karst Geology

Map Info

Karst Type	Geologic Unit	Acres
No karst geology found in evaluation area		0

Source: Weary, D.J., and Doctor, D.H., 2014, Karst in the United States: A digital map compilation and database: U.S. Geological Survey Open-File Report 2014–1156

Climate Summary

30-Year Normal Precipitation (Inches)

Map Info

Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
42.06	1.7	2.0	2.8	4.4	5.4	5.4	4.6	3.9	4.0	3.3	2.6	2.0

Source: PRISM Climate Group, Oregon State University, created November 2021 for the period 1991-2020.

30-Year Normal Temperatures (Fahrenheit)

Map Info

	Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	63.7	36.0	41.2	52.9	64.5	74.0	83.1	87.2	85.9	78.9	67.0	52.9	40.6
Mean	53.4	27.1	31.4	42.2	53.4	63.7	73.0	76.9	75.1	67.2	55.6	42.9	32.0
Low	43.0	18.1	21.6	31.6	42.3	53.4	62.9	66.6	64.2	55.5	44.2	32.9	23.3

Source: PRISM Climate Group, Oregon State University, created November 2021 for the period 1991-2020.

Predicted Maximum 24-Hour Precipitation (inches)

Map Info

25-Year	100-Year
6.0	7.8

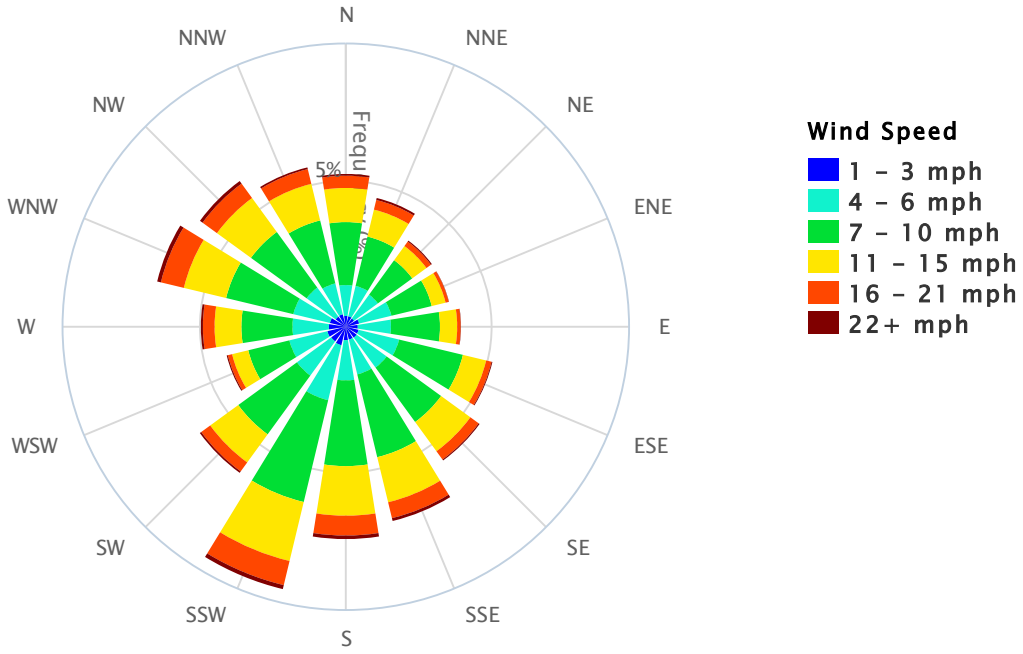
Source: NOAA National Weather Service NOAA Atlas 14, Volumes 1,2,6,8,9,10 (2004-2015).

Info

Nearest Climate Station

KIRKSVILLE REGIONAL ARPT (KIRK), MO

Calm winds: 9.47%, Variable direction winds:1.49%, Data period: 2008-2015



Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec

Chart indicates the frequency of winds blowing FROM a direction.
Source: NOAA NCEI Quality Controlled Local Climatological Data (QCLCD)

Station Name	Distance	Direction
KIRKSVILLE REGIONAL ARPT (KIRK)	33.4 Miles	NNW
COLUMBIA REGIONAL AIRPORT (KCOU)	57.1 Miles	S
QUINCY RGNL-BLDWN FLD ARPT (KUIN)	64.2 Miles	ENE
AGRICULTURAL SCIENCE CENTER (KCDJ)	67.5 Miles	W
JEFFERSON CITY MEMO ARPT (KJEF)	73.0 Miles	S

Assessment Area Map

The Ag Site Assessment Tool was designed by University of Missouri Extension for educational purposes. For questions about the report, please contact us at help@cares.missouri.edu.

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

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

Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

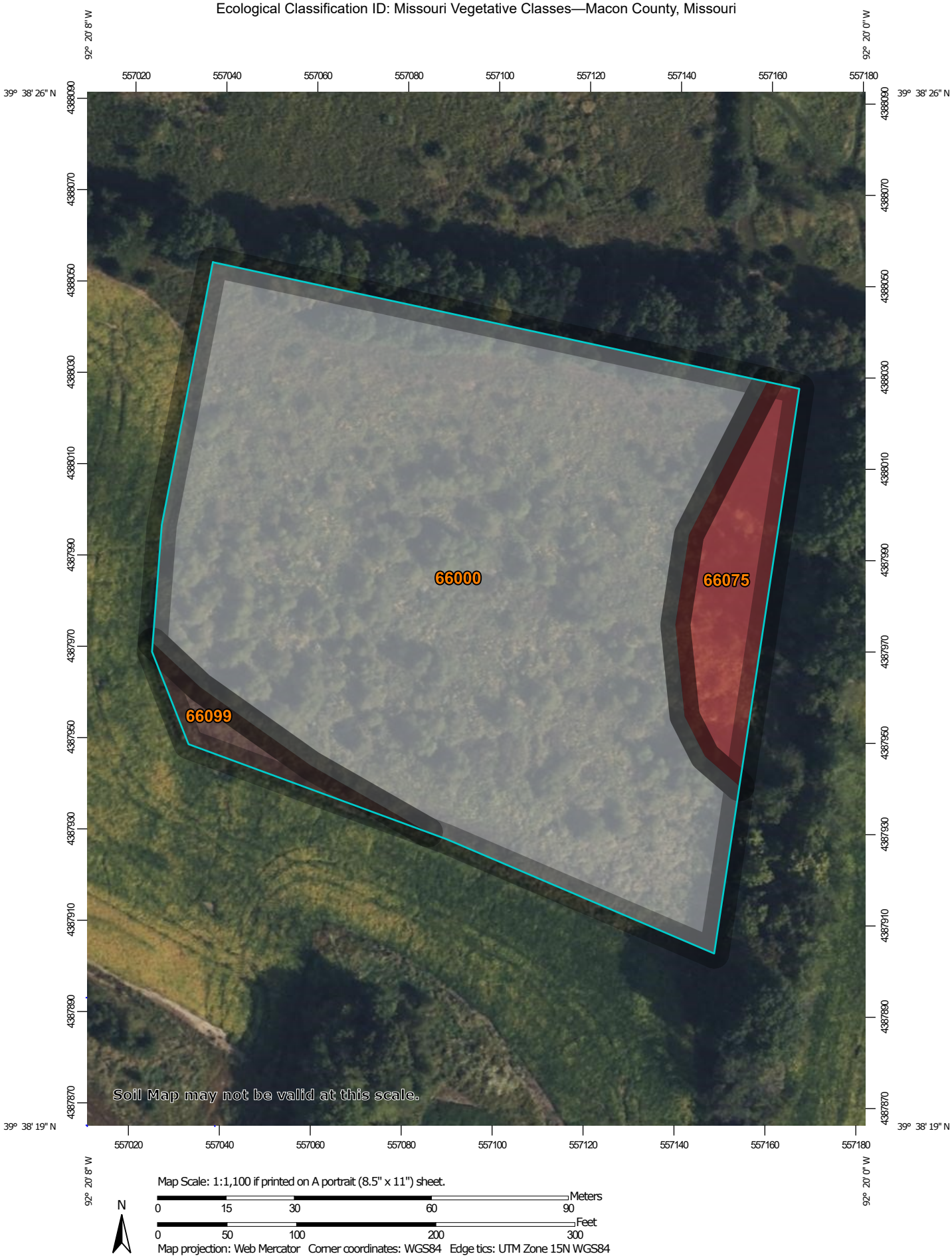
Physical Soil Properties–Macon County, Missouri														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
66000—Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded														
Moniteau	0-7	1-10- 15	67-79- 88	10-11- 20	1.43-1.44 -1.46	4.00-9.00-14.00	0.22-0.23-0. 24	0.9- 1.1- 2.3	1.0- 1.7- 2.0	.49	.49	5	5	56
	7-15	1- 5- 15	65-76- 88	10-19- 20	1.45-1.47 -1.50	4.00-9.00-14.00	0.22-0.23-0. 24	0.5- 1.5- 2.5	0.1- 0.3- 0.5	.43	.43			
	15-52	1- 6- 20	48-66- 81	18-28- 35	1.47-1.48 -1.50	1.40-2.70-14.00	0.18-0.19-0. 22	1.3- 2.9- 3.9	0.1- 0.3- 0.5	.49	.49			
	52-79	1-16- 40	36-63- 84	15-21- 30	1.43-1.51 -1.53	1.40-2.70-14.00	0.12-0.21-0. 22	0.8- 1.9- 3.2	0.1- 0.2- 0.5	.55	.55			
66075—Chequest silty clay loam, 0 to 2 percent slopes, occasionally flooded														
Chequest	0-18	-20-	-48-	30-33- 35	1.30-1.33 -1.35	1.40-3.00-4.00	0.18-0.19-0. 20	4.4- 4.9- 6.4	3.0- 3.5- 4.0	.24	.24	5	6	48
	18-60	- 7-	-54-	35-39- 42	1.35-1.40 -1.45	0.40-0.90-1.40	0.14-0.16-0. 18	5.6- 7.1- 8.2	0.0- 0.5- 1.0	.37	.37			

Physical Soil Properties–Macon County, Missouri														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
66099—Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded														
Piopolis	0-10	1- 5- 7	65-65- 68	25-30- 32	1.37-1.38 -1.39	1.40-3.00-4.00	0.21-0.22-0. 23	3.6- 4.5- 4.8	1.9- 2.4- 3.1	.32	.32	5	6	48
	10-32	0- 5- 7	53-62- 65	29-34- 43	1.29-1.29 -1.41	1.40-3.00-4.00	0.18-0.19-0. 20	4.3- 5.3- 7.5	0.7- 2.2- 2.2	.37	.37			
	32-60	2- 4- 7	51-57- 72	22-39- 44	1.34-1.34 -1.44	0.40-1.00-1.40	0.18-0.19-0. 20	3.1- 6.4- 7.8	0.3- 1.2- 1.2	.37	.37			

Data Source Information

Soil Survey Area: Macon County, Missouri
Survey Area Data: Version 25, Sep 6, 2022

Ecological Classification ID: Missouri Vegetative Classes—Macon County, Missouri



Map Scale: 1:1,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Mixed Native Vegetation
- Woody Vegetation
- Not rated or not available

Soil Rating Lines

- Mixed Native Vegetation
- Woody Vegetation
- Not rated or not available

Soil Rating Points

- Mixed Native Vegetation
- Woody Vegetation
- 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 1:24,000.

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: Macon County, Missouri
Survey Area Data: Version 25, Sep 6, 2022

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

Date(s) aerial images were photographed: Sep 14, 2022—Oct 1, 2022

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.

Ecological Classification ID: Missouri Vegetative Classes

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
66000	Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded		3.3	88.7%
66075	Chequest silty clay loam, 0 to 2 percent slopes, occasionally flooded	Mixed Native Vegetation	0.3	8.6%
66099	Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded	Woody Vegetation	0.1	2.7%
Totals for Area of Interest			**3.7**	**100.0%**

Description

Ecological classifications consist of a series of vegetative classification systems developed by various partners in the National Cooperative Soil Survey. The classifications include, but are not limited to, systematic vegetative groupings. Examples include NRCS ecological sites, United States Forest Service plant associations, and forage suitability groups. The classifications systems are identified by the Ecological Classification Type Name field, which is in the Component Ecological Classification table.

Rating Options

Class: Missouri Vegetative Classes

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower