

Soil Organic Carbon: SHAPE Report

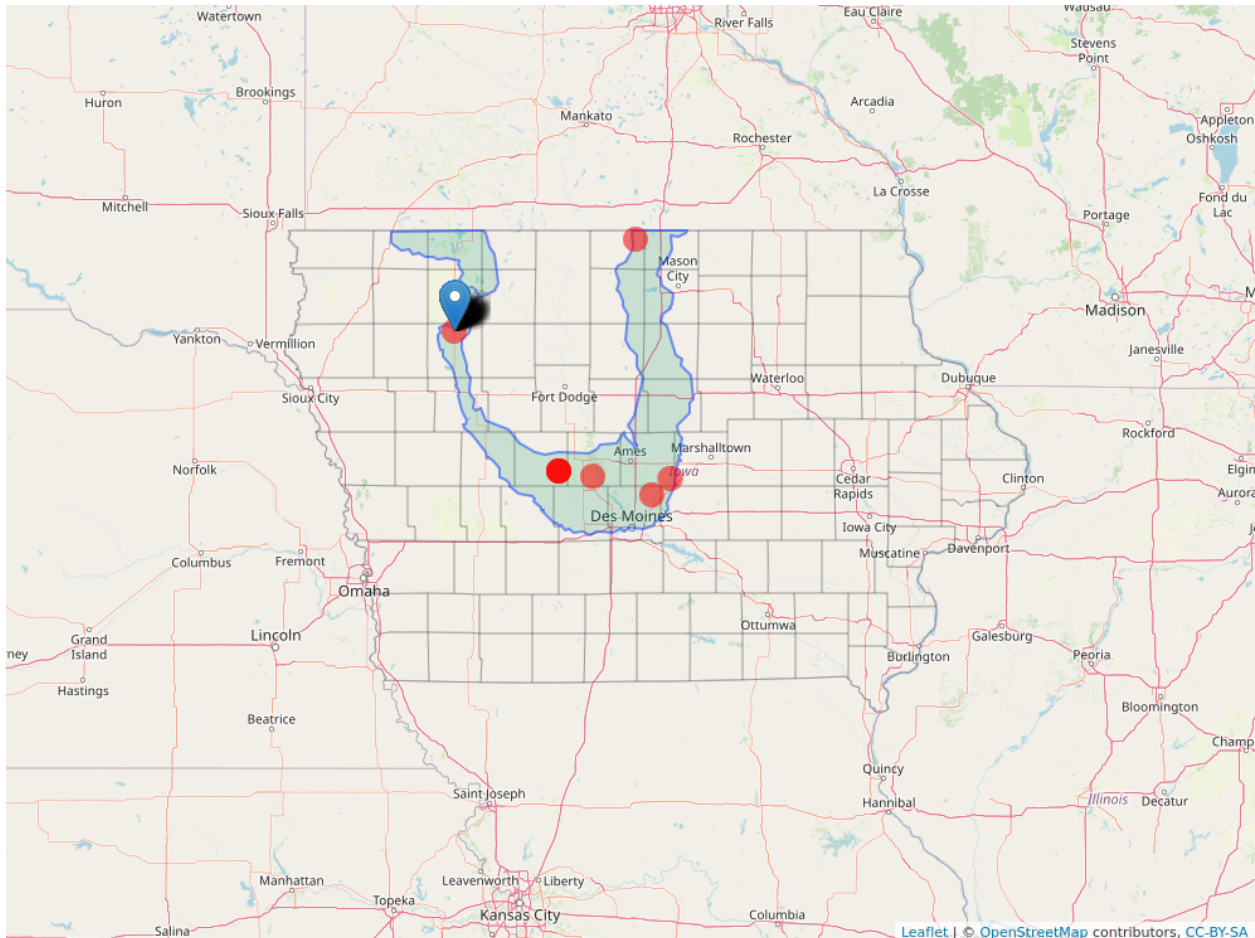
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1 Introduction

This report has been generated for your field 0001-14. The map below displays your field (as a Blue Marker) in the context of the other fields comprising the Standard Background Database containing fields from your field's Geographic Subregion.



2 Subregion

Based on the geographic information contained within the data, we've identified your Geographic Subregion as Bemis Till Plain. Below is a description of this subregion:

Bemis Till Plain – This is the oldest part of the Des Moines Lobe with the most irregular topography. It surrounds the Algona and Altamont till plains and extends further to the south. It is partially crossed by streams and rivers and has variable texture soils often chalky with calcium carbonate and layered with loam to silt loam or sandy loam, a heterogenous mixture of clay, sand, gravel, and boulders. The ground is predominantly moraine which is material left behind by a moving glacier. Upland hilltops are usually loam, while the upland depressions or channels are typically clay loam in soil texture.

Although poorly drained soils and potholes also dot the landscape in this subregion of the Des Moines Lobe, the concentration of poorly drained soils in this region is the lowest of the Des Moines lobe subregions. This region has slightly higher slopes and less extensive flat areas than the northern Algona and Altamont till plains subregions, but good organic matter and complimentary topography make this region good for growing crops.

Although not quite as flat as other areas of the Des Moines Lobe, with a 2% median slope gradient, there are relatively few significantly convex, concave or straight downhill areas as illustrated by the distribution of hillslope positions in the subregion: Summit (typically flat): (18%) Shoulder (typically convex): (13%) Backslope (Backslopes have the greatest potential for erosion with water speed able to increase on any straight part of the down slope): (20%) Footslope (typically concave): (16%) Toeslope (typically flat): (33%)

Dominant Soil Series: Clarion (29%), Nicollet (13%), Webster (13%), Canisteo (11%)

The Clarion soil series consists of very deep, moderately well drained soils on uplands. These soils formed in glacial till and are on higher landscape positions on convex slopes and have a frequently saturated zone between depths of 4 to 6 feet during March to June in normal years during the wettest periods of years when precipitation is within one standard deviation of 30 year mean annual precipitation. Slopes range from 1 to 9 percent. Mean air annual temperature is about 48 degrees F.

The Nicollet soil series consists of very deep, somewhat poorly drained soils that formed in calcium carbonate rich (more than 15%) chalky/limestone, loamy glacial till on till plains and moraines that crumble easily. They are in higher landscape positions on flat and rises. Nicollet soils are on till plains, ground and terminal moraines left by the retreating glacier. In an undrained condition, a frequently saturated zone occurs at the surface to a depth of a foot during the wettest periods of years when precipitation is within one standard deviation of 30 year mean annual precipitation. Slopes range from 0 to 5 percent.

The Webster soil series consists of very deep, poorly drained, moderately permeable chalky soils formed in glacial till or local alluvium derived from till on uplands. A saturated zone occurs within depths of 0 to 6 inches during the wettest period in normal years in natural conditions. Slopes range from 0 to 3 percent.

The Canisteo soil series consists of very deep, poorly and very poorly drained soils that formed in calcium carbonate rich, loamy till or in a thin mantle of loamy or silty sediments and the underlying chalky, loamy till. a frequently saturated zone occurs at the surface to a depth of 1 foot during the wettest periods of years when precipitation is within one standard deviation of 30 year mean annual precipitation. These soils are on rims of depressions, depressions and flats on material left behind by a moving glacier or till plains. Slopes range from 0 to 2 percent.

Dominant Land Uses: Row Crop (75%), Urban (10%), Grassland/Pasture (9%) Vegetation: Most areas are artificially drained and cultivated. The principal crops are corn, soybeans, small grains, and legume hay. Reed canarygrass commonly dominates partially drained pasture. Native Vegetation is predominantly wet-site tall prairie species such as prairie cordgrass, switchgrass, big bluestem, little bluestem wooly sedge, giant goldenrod and Canada goldenrod. The native Vegetation on very poorly drained ponded phases is herbaceous marsh species tolerant of excessive wetness such as, cattails, bulrushes, giant burreed, giant reed grass and hydrophytic sedges.

3 SHAPE Test

The Soil Health Assessment Protocol and Evaluation (SHAPE) tool finds soil organic carbon (SOC) to be a key proxy measurement of soil health because it can detect changes in soil biological and chemical functions related to agricultural productivity and ecosystem health. Understanding soil health from this perspective can help to ensure sustainable land management. Fortunately, SOC can be extrapolated from soil organic matter, which is a common measurement in standard soil testing, and is able to be analyzed for this SHAPE metric through the portal.

Scored values represent the percent of this soil’s capacity to produce organic carbon that is being achieved based on this location and 30-year weather history, rather than compared to soils in any other location.

For more information about the SHAPE Test, please [click here](#).

3.1 Your Results

Point	Field_ID	MATC	MAPmm	SOC	Score_2.5%	Score_Mean	Score_97.5%
1	0001-14_001	8.146882	814.6871	0.4	0.0000019	0.0000051	0.0000106
2	0001-14_002	8.146882	814.6871	0.2	0.0000000	0.0000000	0.0000000
3	0001-14_003	8.146882	814.6871	1.9	0.2594627	0.2752057	0.2912387
4	0001-14_004	8.146882	814.6871	1.5	0.1054747	0.1184211	0.1316773
5	0001-14_005	8.146882	814.6871	0.7	0.0007056	0.0011274	0.0016829
6	0001-14_006	8.146882	814.6871	0.5	0.0000256	0.0000537	0.0000974
7	0001-14_007	8.146882	814.6871	2.0	0.3033793	0.3192991	0.3362142
8	0001-14_008	8.146882	814.6871	2.3	0.4347743	0.4516266	0.4679301
9	0001-14_009	8.146882	814.6871	2.2	0.3919461	0.4081171	0.4246509

Field Soil Organic Carbon Scores

