SSURGO Information

Soil mapunits are the basic geographic unit of the Soil Survey Geographic Database (SSURGO). The SSURGO dataset is a compilation of soils information collected over the last century by the Natural Resources Conservation Service (NRCS). Mapunits delineate the extent of different soils. Data for each mapunit contains descriptions of the soil's components, productivity, unique properties, and suitability interpretations.

Each soil type has a unique combination of physical, chemical, nutrient and moisture properties. Soil type has ramifications for engineering and construction activities, natural hazards such as landslides, agricultural productivity, the distribution of native plant and animal life and hydrologic and other physical processes. Soil types in the context of climate and terrain can be used as a general indicator of engineering constraints, agriculture suitability, biological productivity and the natural distribution of plants and animals.

Attributes Metadata
https://www.arcgis.com/home/item.html?id=cdc49bd63ea54dd2977f3f2853e07fff
Key fields from eight commonly used SSURGO tables were compiled to create the 155 attribute fields in this layer. Some fields were joined directly to the SSURGO Map Unit polygon feature class while others required summarization and other processing to create a 1:1 relationship between the attributes and polygons prior to joining the tables. Attributes of this layer are listed below in their order of occurrence in the attribute table and are organized by the SSURGO table they originated from and the processing methods used on them.

Map Unit Polygon Feature Class Attribute Table
The fields in this table are from the attribute table of the Map Unit polygon feature class which provides the geographic extent of the map units.

Area Symbol
Spatial Version
Map Unit Symbol

Map Unit Table
The fields in this table have a 1:1 relationship with the map unit polygons and were joined to the table using the Map Unit Key field.

Map Unit Name
Map Unit Kind
Farmland Class
Interpretive Focus
Intensity of Mapping
Iowa Corn Suitability Rating

Legend Table
This table has 1:1 relationship with the Map Unit table and was joined using the Legend Key field.

Project Scale

Survey Area Catalog Table
The fields in this table have a 1:1 relationship with the polygons and were joined to the Map Unit table using the Survey Area Catalog Key and Legend Key fields.

Survey Area Version
Tabular Version

Map Unit Aggregated Attribute Table
The fields in this table have a 1:1 relationship with the map unit polygons and were joined to the Map Unit attribute table using the Map Unit Key field.

Slope Gradient - Dominant Component
Slope Gradient - Weighted Average
Bedrock Depth - Minimum
Water Table Depth - Annual Minimum
Water Table Depth - April to June Minimum
Flooding Frequency - Dominant Condition
Flooding Frequency - Maximum
Ponding Frequency - Presence
Available Water Storage 0-25 cm - Weighted Average
Available Water Storage 0-50 cm - Weighted Average
Available Water Storage 0-100 cm - Weighted Average
Available Water Storage 0-150 cm - Weighted Average
Drainage Class - Dominant Condition
Drainage Class - Wettest
Hydrologic Group - Dominant Condition
Irrigated Capability Class - Dominant Condition
Irrigated Capability Class - Proportion of Mapunit with Dominant Condition
Non-Irrigated Capability Class - Dominant Condition
Non-Irrigated Capability Class - Proportion of Mapunit with Dominant Condition
Rating for Buildings without Basements - Dominant Condition
Rating for Buildings with Basements - Dominant Condition
Rating for Buildings with Basements - Least Limiting
Rating for Buildings with Basements - Most Limiting
Rating for Septic Tank Absorption Fields - Dominant Condition
Rating for Septic Tank Absorption Fields - Least Limiting
Rating for Septic Tank Absorption Fields - Most Limiting

Rating for Sewage Lagoons - Dominant Condition
Rating for Sewage Lagoons - Dominant Component
Rating for Roads and Streets - Dominant Condition
Rating for Sand Source - Dominant Condition
Rating for Sand Source - Most Probable
Rating for Paths and Trails - Dominant Condition
Rating for Paths and Trails - Weighted Average
Erosion Hazard of Forest Roads and Trails - Dominant Component
Hydric Classification - Presence
Rating for Manure and Food Processing Waste - Weighted Average

Component Table – Dominant Component
Map units have one or more components. To create a 1:1 join component data must be summarized by map unit. For these fields a custom script was used to select the component with the highest value for the Component Percentage Representative Value field (comppct_r). Ties were broken with the Slope Representative Value field (slope_r). Components with lower average slope were selected as dominant. If both soil order and slope were tied, the first value in the table was selected.

Component Percentage - Low Value
Component Percentage - Representative Value
Component Percentage - High Value
Component Name
Component Kind
Other Criteria Used to Identify Components
Criteria Used to Identify Components at the Local Level
Runoff Class
Soil loss tolerance factor
Wind Erodibility Index
Wind Erodibility Group
Erosion Class
Earth Cover 1
Earth Cover 2
Hydric Condition
Hydric Rating
Aspect Range - Counter Clockwise Limit
Aspect - Representative Value
Aspect Range - Clockwise Limit
Geomorphic Description
Non-Irrigated Capability Subclass
Non-Irrigated Unit Capability Class
Irrigated Capability Subclass
Irrigated Unit Capability Class
Conservation Tree Shrub Group

Grain Wildlife Habitat
Grass Wildlife Habitat
Herbaceous Wildlife Habitat
Shrub Wildlife Habitat
Conifer Wildlife Habitat
Hardwood Wildlife Habitat
Wetland Wildlife Habitat
Shallow Water Wildlife Habitat
Rangeland Wildlife Habitat
Openland Wildlife Habitat
Woodland Wildlife Habitat
Wetland Wildlife Habitat
Soil Slip Potential
Susceptibility to Frost Heaving
Concrete Corrosion
Steel Corrosion
Taxonomic Class
Taxonomic Order
Taxonomic Suborder
Great Group
Subgroup
Particle Size
Particle Size Mod
Cation Exchange Activity Class
Carbonate Reaction
Temperature Class
Moist Subclass
Soil Temperature Regime
Edition of Keys to Soil Taxonomy Used to Classify Soil
California Storie Index
Component Key

Component Table – Weighted Average
Map units may have one or more soil components. To create a 1:1 join, data from the Component table must be summarized by map unit. For these fields a custom script was used to calculate an average value for each map unit weighted by the Component Percentage Representative Value field (comppct_r).

Slope Gradient - Low Value
Slope Gradient - Representative Value
Slope Gradient - High Value
Slope Length USLE - Low Value
Slope Length USLE - Representative Value

Slope Length USLE - High Value
Elevation - Low Value
Elevation - Representative Value
Elevation - High Value
Albedo - Low Value
Albedo - Representative Value
Albedo - High Value
Mean Annual Air Temperature - Low Value
Mean Annual Air Temperature - Representative Value
Mean Annual Air Temperature - High Value
Mean Annual Precipitation - Low Value
Mean Annual Precipitation - Representative Value
Mean Annual Precipitation - High Value
Relative Effective Annual Precipitation - Low Value
Relative Effective Annual Precipitation - Representative Value
Relative Effective Annual Precipitation - High Value
Days between Last and First Frost - Low Value
Days between Last and First Frost - Representative Value
Days between Last and First Frost - High Value
Range Forage Annual Potential Production - Low Value
Range Forage Annual Potential Production - Representative Value
Range Forage Annual Potential Production - High Value
Initial Subsidence - Low Value
Initial Subsidence - Representative Value
Initial Subsidence - High Value
Total Subsidence - Low Value
Total Subsidence - Representative Value
Total Subsidence - High Value

Valu1 table (gSSURGO)
The fields in this table have a 1:1 relationship with the map unit polygons and were joined to the table using the Map Unit Key field.

Crop Productivity Index (ncppi_all field)

Esri Symbology
This field was created to provide symbology based on the Taxonomic Order field (taxorder). Because some mapunits have a null value for soil order, a custom script was used to populate this field using the Component Name (compname) and Mapunit Name (muname) fields. This field was created using the dominant component of each mapunit.

Esri Symbology

Horizon Table
Each map unit polygon has one or more components and each component has one or more layers known as horizons. To incorporate this field from the Horizon table into the attributes for this layer, a custom script was used to first calculate the mean value weighted by thickness of the horizon for each component and then a mean value of components weighted by the Component Percentage Representative Value field for each map unit.

K-Factor Rock Free

Esri Soil Order
These fields were calculated from the Component table using a model that included the Pivot Table Tool, the Summarize Tool and a custom script. The first 11 fields provide the sum of Component Percentage Representative Value for each soil order for each map unit. The Soil Order Dominant Condition field was calculated by selecting the highest value in the preceding 11 soil order fields. In the case of tied values the component with the lowest average slope value (slope_r) was selected. If both soil order and slope were tied the first value in the table was selected.

Percent Alfisols
Percent Andisols
Percent Aridisols
Percent Entisols
Percent Gelisols
Percent Histosols
Percent Inceptisols
Percent Mollisols
Percent Spodosols
Percent Ultisols
Percent Vertisols
Soil Order - Dominant Condition

Esri Popup String
This field contains a text string calculated by Esri that is used to create a basic pop-up using some of the more popular SSURGO attributes.

Map Unit Key
The Mapunit key field is found throughout SSURGO and provides a primary link between the geographic and tabular data.

Map Unit Key

For more information on the fields, tables and relationships of SSURGO see the metadata produced by NRCS: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053631

Source: Esri, USDA NRCS

Links

Links	https://www.nrcs.usda.gov/wps/portal/nrcs/site/soils/home/ https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053631 https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/ https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm https://www.arcgis.com/home/item.html?id=cdc49bd63ea54dd2977f3f2853e07fff https://gdg.sc.egov.usda.gov/ http://www.pickawayswcd.org/ http://www.pickawayswcd.org/web-soil-survey.html