

State Soil Geographic Data Base (STATSGO) Soil Survey Geographic Data Base (SSURGO)

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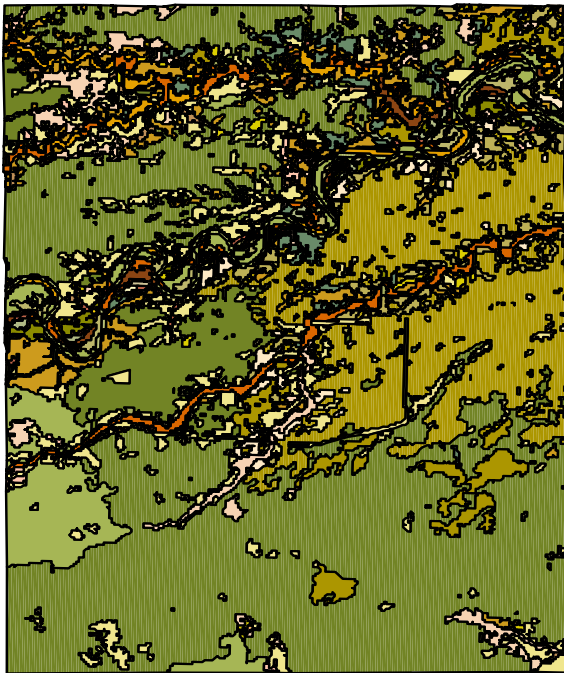
DEFINITIONS — Vector maps (points, lines, polygons) showing soil map areas along with conventional and special features like sand spots, gullies, and escarpments. Maps from adjacent counties or states are perfectly matched to provide continuous coverage.

STATSGO — State Soil Geographic Data Base

SSURGO — Soil Survey Geographic Data Base.

PURPOSE OF MAPS AND EXTENT OF COVERAGE

STATSGO maps cover multi-county, state, multi-state and regional areas and are designed for regional planning and management uses. STATSGO data are generalized from county general soil maps, overlaid onto the U.S. Geological Survey's 1:250,000-scale topographic quadrangle series. The smallest area mapped is about 1,500 acres.



Example SSURGO data located near Antwerp in Paulding County, Ohio.

Every STATSGO polygon is linked to the Soil Interpretations Record (SIR) attribute data base, which includes over 25 physical and chemical soil properties such as available water capacity, soil reaction, period of flooding, depth to seasonal water table, and depth to bedrock, as well as interpretations of soil properties for engineering uses, and for cropland, woodland, rangeland, pastureland, wildlife, and recreation development.

SSURGO map data are derived from detailed soil survey maps at scales between 1:12,000 to 1:63,360. Information from soil survey sheets is recompiled onto a 3.75 minute digital orthophoto quarter quadrangle (DOQQ), a 7.5 minute digital orthophoto quadrangle (DOQ) or other planimetrically accurate base map, producing georeferenced data compatible with GIS programs.

The soil map units are linked to attributes in the Map Unit Interpretations Record (MUIR) relational data base, which includes over 25 physical and chemical soil properties and interpretations for use, as in STATSGO.

PRODUCT DELIVERY FORMAT

STATSGO and SSURGO data are available in 3 formats:

1. USGS Digital Line Graph Optional format (also referred to as DLG-3), with file extension .dlg
2. ArcView Shape File Format
3. Arc Interchange format, with file extension .e00
4. Coverages with file extension .cov
5. ASCII attribute data

PRODUCT AVAILABILITY

See <http://soildatamart.nrcs.usda.gov/> for a list of available SSURGO data. Data are distributed on CD rom, for about \$50 per CD, or can be downloaded free of charge at the web site. The availability of SSURGO for Ohio can be found at <http://www.ncgc.nrcs.usda.gov/branch/ssb/products/ssurgo/data/oh.html>

STATSGO data are available for all states in either coverage or dlg format from: <http://www.ncgc.nrcs.usda.gov/branch/ssb/products/statsgo/index.html>

PROCESSING THE FILES FOR USE IN GIS SOFTWARE

The Optional format DLG files for any location will have the same number code and four extensions: .#aa, .#af, .#sa, and .#sf. You must give the .#af and .#sf files unique names with the suffix .dlg.

File formats in shape file are easily imported into all GIS packages. When using the Optional format (with extension .dlg) in ArcView it requires conversion to either shapefiles, with extension .shp, or AutoCAD files, with extension .dxf. Numerous freeware conversion utilities are available which can carry out these conversions.

DLGLX, which converts DLGs to DXF, is available at <http://members.visi.net/%7Eeddbunch/dlgx.htm>.

A similar utility, dlg2dxf, is available from <http://software.geocomm.com/translators/dlg.html>. Dlg21a.ave is an ArcView 3.x script, written by Mark Cederholm, which converts a .dlg file of lines, points (degenerate lines), or polylines to a shapefile, with attributes. The script and supporting documentation are available as one of the choices called DLG2SHP at <http://software.geocomm.com/translators/dlg.html>. You will need to assign a button on the view tool bar to the script.

Files with the .e00 extension must be converted to coverages using an ESRI utility called Import71. Go to <http://gis.esri.com/download/index.cfm?downloadid=175> and search for Import71.exe.

DLGs available as coverages are immediately viewable in ArcView, and the tables are linked. Projection information is found in a text file called prj.adf.

The STATSGO coverages are not linked to attribute files. When you add a coverage to the view in ArcView, a file with a name such as "attributes of OH" accompanies the coverage, but this file contains only the map unit id number (muid) of each polygon and some other information, such as the area and perimeter of each polygon. It does not contain soil attribute information. To use the soil data, you must add the mapunit.dbf file to ArcView's list of tables. This file is in the Spatial folder created by the data download and contains the same muid number, with the accompanying Map Unit Name and for each polygon. Join the two files using the common id field.

COORDINATE SYSTEMS

The metadata files accompanying the data reveal

the coordinate system used in the data. The two main coordinate systems are: 1. geographic (unprojected data) in decimal degrees; and 2. projected data in meters. Differences in methods used to project data, using different reference points and systems in different years, are important when attempting to display and manipulate data with true positional accuracy.

SSURGO data available through the Soil Data Mart can be obtained in either the UTM Zone (NAD 83) or in the State Plane coordinate system.

DLG files in Optional format are projected to UTM in either NAD27 or NAD83. The projection data are found in the .#aa and .#sa files which accompany the data.

Data coordinates for Arc interchange files vary with the geographic extent. Coordinates for quadrangle coverages are in UTM meters. Coordinates for survey area wide coverages are in Geographic decimal degrees. Both are referenced to the North American Datum of 1983.

Projection information for a SSURGO coverage is found in an accompanying text file called prj.adf. Projection information for a STATSGO coverage is found in the head.txt and proj.txt files located in the header folder.

REFERENCES

<http://www.ncgc.nrcs.usda.gov/branch/ssb/products/ssurgo>
<http://soildatamart.nrcs.usda.gov/>

CONTACTS

For STATSGO:

National Cartography and Geospatial
U.S. Department of Agriculture
Natural Resources Conservation Service
P.O. Box 6567
Fort Worth, TX 76115
(800) 672-5559 (Ordering Information)
(402) 437-4007 (Tech Support)
(817) 509-3469 FAX

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