

Louisville District Process for Determining Land Capability Class

Requirements and Step:

In order to answer particular questions dealing with soil data the NRCS (Natural Resources Conservation Service) has developed the “Soil Data Viewer”. This viewer will answer a variety of soil questions about specific soil units. For example, “what is the capability class of a particular map soil unit?” Information about the Soil Data Viewer including download, installation, and use instructions can be found at <http://soildataviewer.nrcs.usda.gov/>.

Soil Data Viewers

- 1) Current Version – Soil Data Viewer 5.0 requires ESRI’s ArcGIS 8.3 or 9.0. New version for ArcGIS 9.1 will be out as soon as possible.
Note: We are currently running 9.1 and have never used this current version with either 8.3 or 9.0. I assume it will be capable of providing the same information as before.
- 2) Previous version – Soil Data Viewer 3.0 requires ESRI’s ArcView 3.2 or 3.3.
Note: This is the version I’m familiar with and have used to provide the data that is currently in OMBIL. The information discussed in this document describes the processes relevant to this previous version.

Soil Data

In order to use the Soil Data Viewer, soil data in both Tabular and Spatial format must exist for your area of interest. This is not the case for a large part of the country. The good news is that the NRCS is continually adding and updating this type of soil information. Soil Data is distributed by county or in some cases a group of counties. At the same time one is downloading soil data, one must also download a relevant Access database for the state of interest and it must also match the version of Access on ones own PC.

Soil Data can be downloaded at the Soil Data Mart: (More detailed instructions exist here) <http://soildatamart.nrcs.usda.gov/Default.aspx>.

The soil data will be downloaded in a Zip file which contains the Spatial and Tabular data as well as an Access database. After unzipping the file, the Tabular data must be imported into the Access database.

Fee Title

In order to determine the soil capability classes for a COE project it is necessary to possess the fee title boundary in a polygon GIS format. (Explained why this is below)

GIS

Once the Access database is processed, the Spatial data (shapefile format) can be brought into ArcView 3.2 or 3.3. At this point, the Soil Data Viewer is used to answer specific questions concerning the soil data. Here is where individual map units can be classified according to capability class for non-irrigated and/or irrigated lands (depending on the part of the country). Once the capability classes are determined from the soil data viewer a new shapefile needs to be created. The new shapefile's database will contain the capability class information.

Instruction on how to use the Soil Data Viewer can be found at:

http://soildataviewer.nrcs.usda.gov/userguide/Soil_Data_Viewer.htm.

The soil data processing needs to take place for each county file that a particular project's fee title intersects. Once all counties are processed then all of the counties can be merged together into one soil shapefile. The fee title GIS polygon is then used to create a new shapefile by "clipping out" only the soil data that falls within the fee title. Some simple GIS processing then needs to take place to determine how many total acres are present for each capability class.

The final numbers were than simply transposed into an Excel spreadsheet.