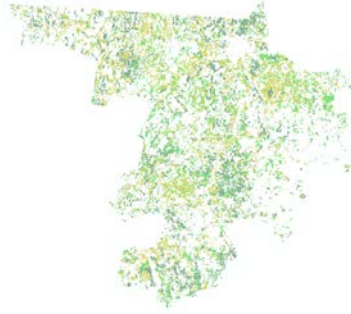


Soils: Tips for NRCS Soil Data Mart download and data use



Revised 3/1/12

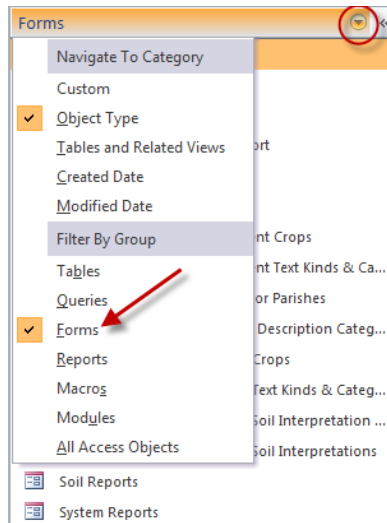
County-level soils data (SSURGO) can be obtained from the National Resources Conservation Service at <http://soildatamart.nrcs.usda.gov/>. Before you do this, take time to read the information on the NRCS site about the data and soils information in general. Also be aware that getting the data may take a few days - you submit a request, and a notification will be sent to you when it is ready for download. Note that you will need Microsoft Access for using the tabular data.

When you are ready to download, go to the **Soil Data Mart** site and follow the directions (**Select a State**, etc.). You should request the option for both tabular and spatial data, which will include a MS Access soils database template. When you get to the request submittal form, be sure to enter your e-mail address. They will notify you when the file is ready for download. It will be a zipped file.

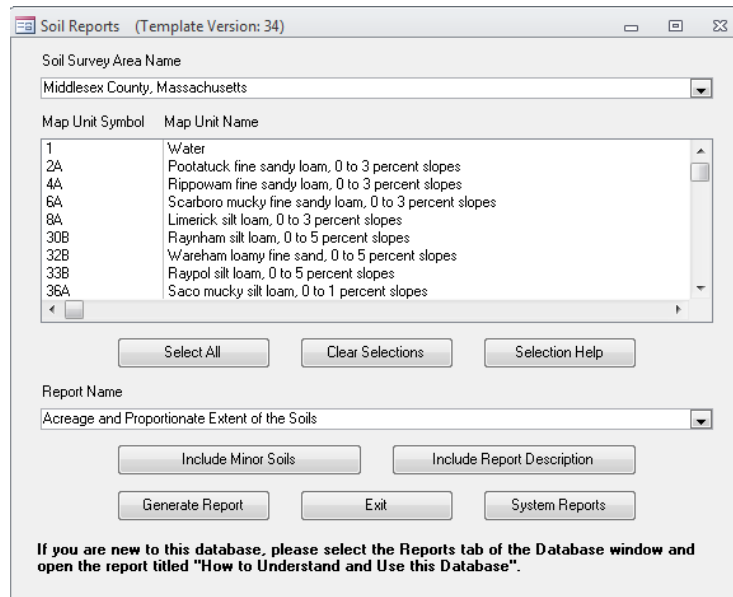
When you receive the zipped data, unzip it. (Right-click on the .zip file and choose 'Extract to,' then navigate to the appropriate folder)


There should be folders for Tabular data, Spatial data, and the Access database folder (soildb_US_2002.zip), as well as metadata and some instructions. Unzip the soildb_US_2002.zip as well.

1. Open the soils Access database template by double-clicking on it (**soildb_US_2002.mdb**) – this should start Microsoft Access and open the file but if it doesn't, start Access first, then select **Open** from the File menu, and navigate to your .mdb document. If you are given a **Macro Single Step** window, you click on **Stop All Macros**. Also, click on **Enable Content** if prompted.
2. Once Access opens, you should immediately see an *import* form. This will import the tabular data into the MS Access template. If you do not see this form, use the arrow in the left side of the Microsoft Access database window to navigate to **Forms**, then look in the window and double-click the form called *IMPORT*.



3. The import form will ask you to enter a directory path (folder path) for the tabular data. Included with your data will be a tabular data folder. Locate the folder in your windows browser, copy the location (e.g., S:\Tutorials\Tufts\ArcGIS10\Editing files\New ArcGIS 10 Word files\Soils test data\soil_ma017\tabular), then paste that location into the Access import form window.
4. The import process takes a few minutes – don't do anything until it has finished (check status in lower right corner of the Access program window).
5. In Access, a **Soils Report** form will appear once the import process has finished – this report form allows you to generate soils reports for selected (or all) soils concerning various aspects of the soils. Explore this tool a bit before moving on to ArcGIS.



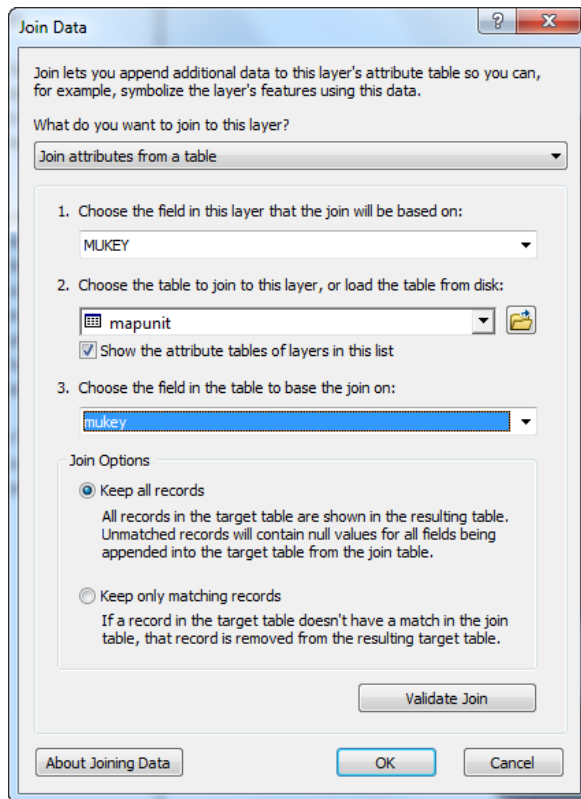
6. Once you have imported the data to Microsoft Access and looked at the Soils Report form, **close** the database and **quit** Access.
7. Under the spatial data folder, there are several shape files. The soils polygons of interest to you are the map unit polygons - this layer is named "*soilmu_a_...*" followed by the state abbreviation and county FIPS code (e.g., *soilmu_a_tx453*).
8. Start **ArcMap** and use the **Add Data button** () to add the **soilmu_a...** shapefile.
9. Right click on **soilmu_a...** to open the attribute table to see what fields it contains. Note there is a field called *musym* that is an abbreviation for the map unit, and there is a field called *mukey* that is a code for the map unit. A map unit is a polygon area that has an associated set of soils and soil characteristics.

The *musym* field is an abbreviation that refers to the soil association, and the *mukey* is a code for that same association. These fields can then be joined or related to other tables in the soils database to provide more information.

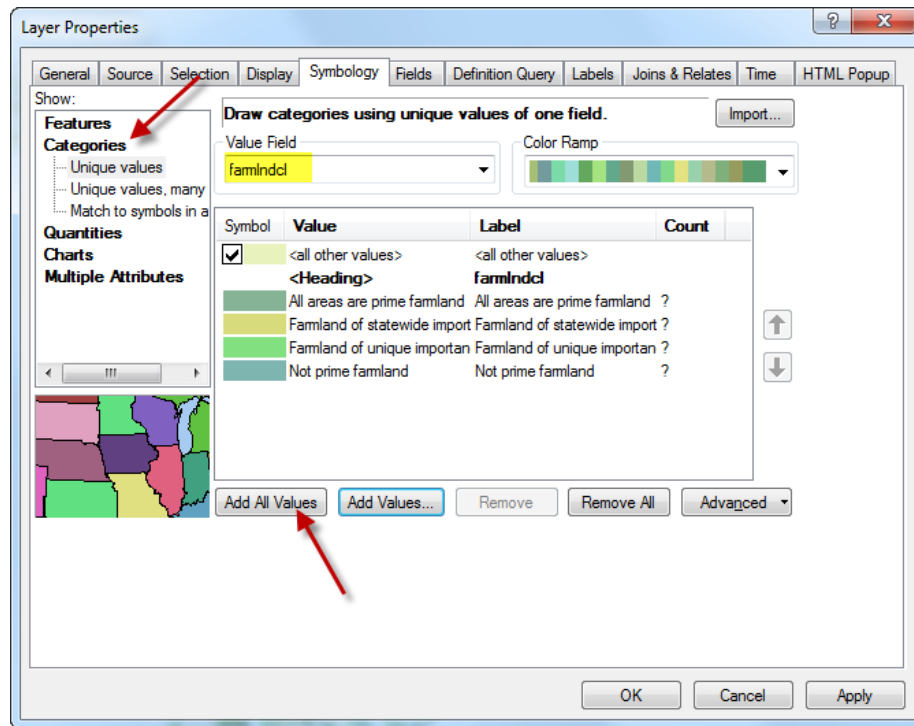
10. In **ArcMap** click **Add Data** to add the Access database, **soildb_US_2002.mdb** - you will see a long list of files available. Find and add the *MAPUNIT* file to your data frame.

Open the *MAPUNIT* table to see what it contains. You will see fuller descriptions of the soil association, including name. Among the other attributes are indications of whether that map unit is considered prime farmland (farmlandcl).

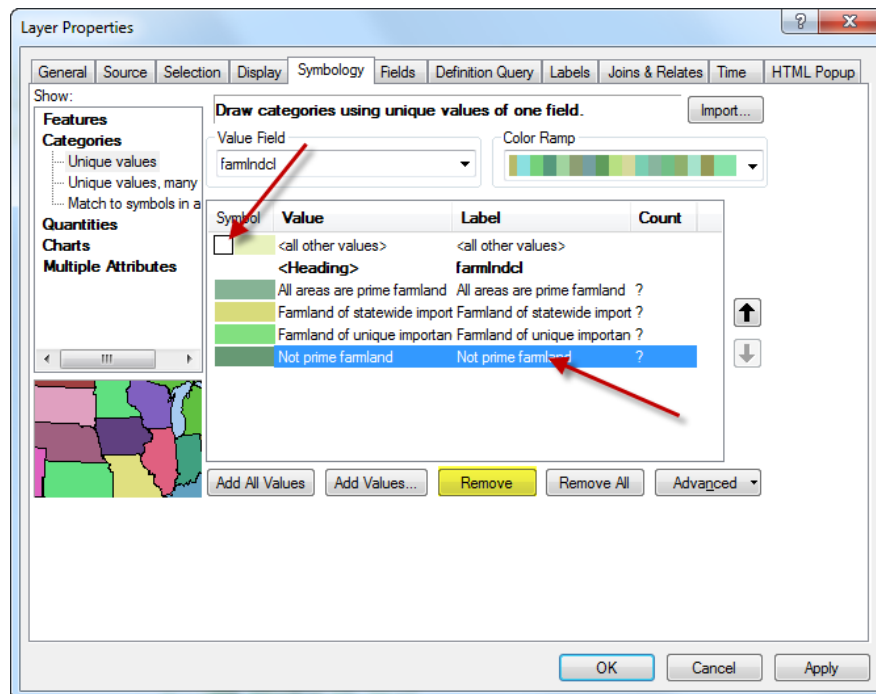
11. You can join the *MAPUNIT* table to the soil map unit polygons to see and map information in a single layer. To make this join, right-click on the **soilmu_a...** GIS layer and choose **Joins and Relates - Join...**
12. Fill out the dialog box as shown and click OK - you are joining the *MAPUNIT* table to the soils map units polygon GIS data layer (*soilmu_a_ma017* in this case) using their shared attribute field, *mukey*:



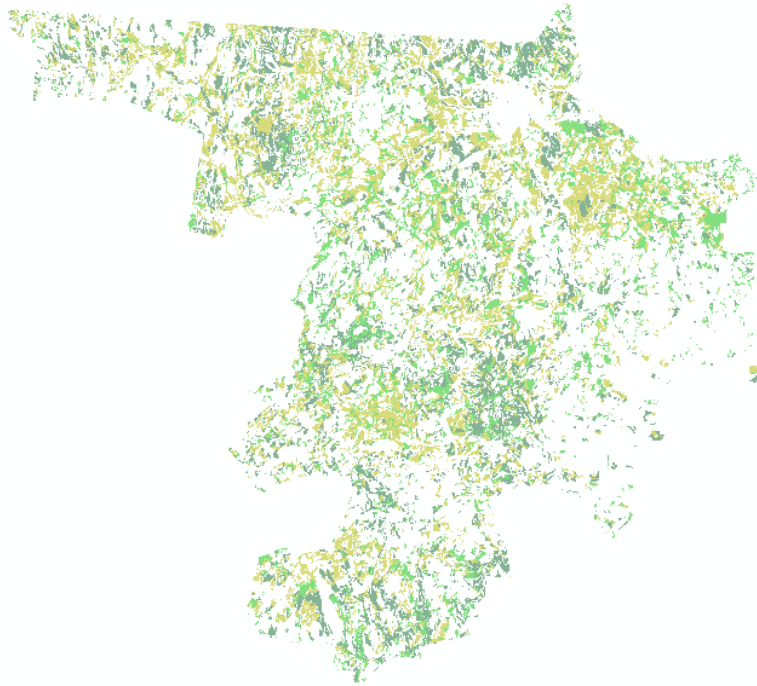
13. Now look at the soils polygons attribute table again and you will see all the attribute fields from both tables.
14. Try mapping prime farmland for your county. Start by right clicking on **soilmu_a...** (in this case **soilmu_a_ma017**) and selecting **Properties**. Then click the **Symbology** tab, and select **Categories** on the left.
15. The **Value Field** of farmland is displayed as "farmlandcl." To display all the types of farmland, click **Add All Values**. You should see the following:



16. Note that if you click on “Not Prime Farmland” to highlight it in the Symbology dialog box and remove that from the map, you can get a nice map of prime farmland soils in your county. You may also want to uncheck the box next to “<all other values>” to remove that from display. See the graphic below for guidance.



17. At this point your map might look something like this:



18. If you like, you can create a permanent shape file with all the data joined by right-clicking on the soils polygon layer (e.g., *soilmu_a_ma017*) and choosing **Data – Export Data** - this will create a new shape file so remember to specify a location and name for your new file.