OJT Training Module Cover Sheet

Title: Geodatabase Setup for Update Surveys

Type: □x Skill   □ Knowledge

Performance Objective:
Trainee will be able to setup a Geodatabase using the ARcGIS 9.2 versions of the ArcToolbox and the Geodatabase Setup Scripts.

Trainer Preparation:
Make sure the participants have machines that they have write permission to the C drive and access to the internet.

Special Requirements:
CCE configuration including ArcGIS 9.2.

Prerequisite Modules:
None.

Procedure:
Trainer will use as a job aid to help prepare for this task.
Trainer can then use this job aid as a training module to accomplish the task.

Notes/Purpose:
The purpose is for the trainee to be able to obtain and run scripts to create a geodatabase using ArcGIS 9.2

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Approved by:

Geodatabase Setup for an Update Soil Survey Project

Objectives:

Create an Update Soil Survey Geodatabase Using Soil Survey GeoDatabase Setup Tools

Incorporate Custom Soil Survey Toolboxes into your default setup

Step 1. Download and Unzip the Toolboxes

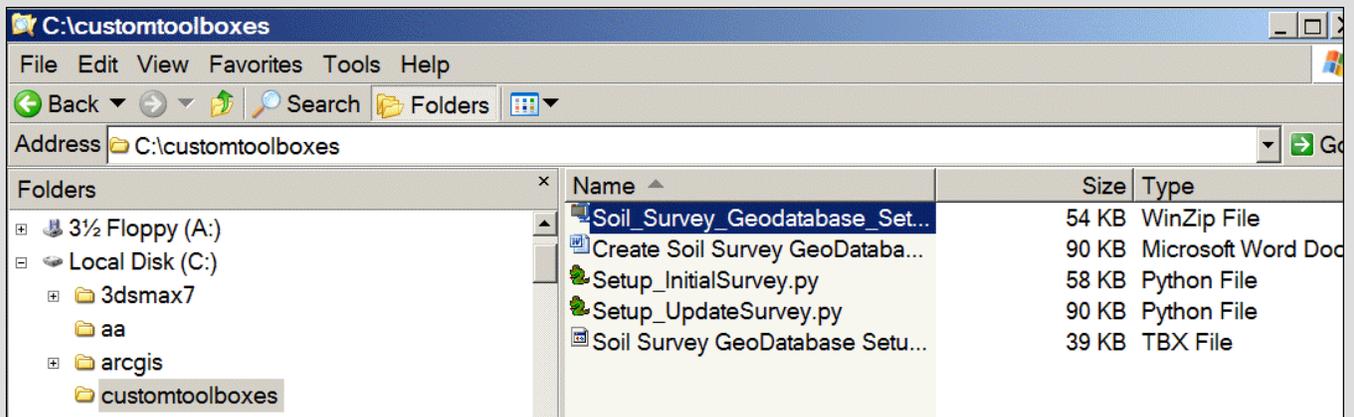a. Using Windows Explorer, create the following directory (folder):

   C:\customtoolboxes
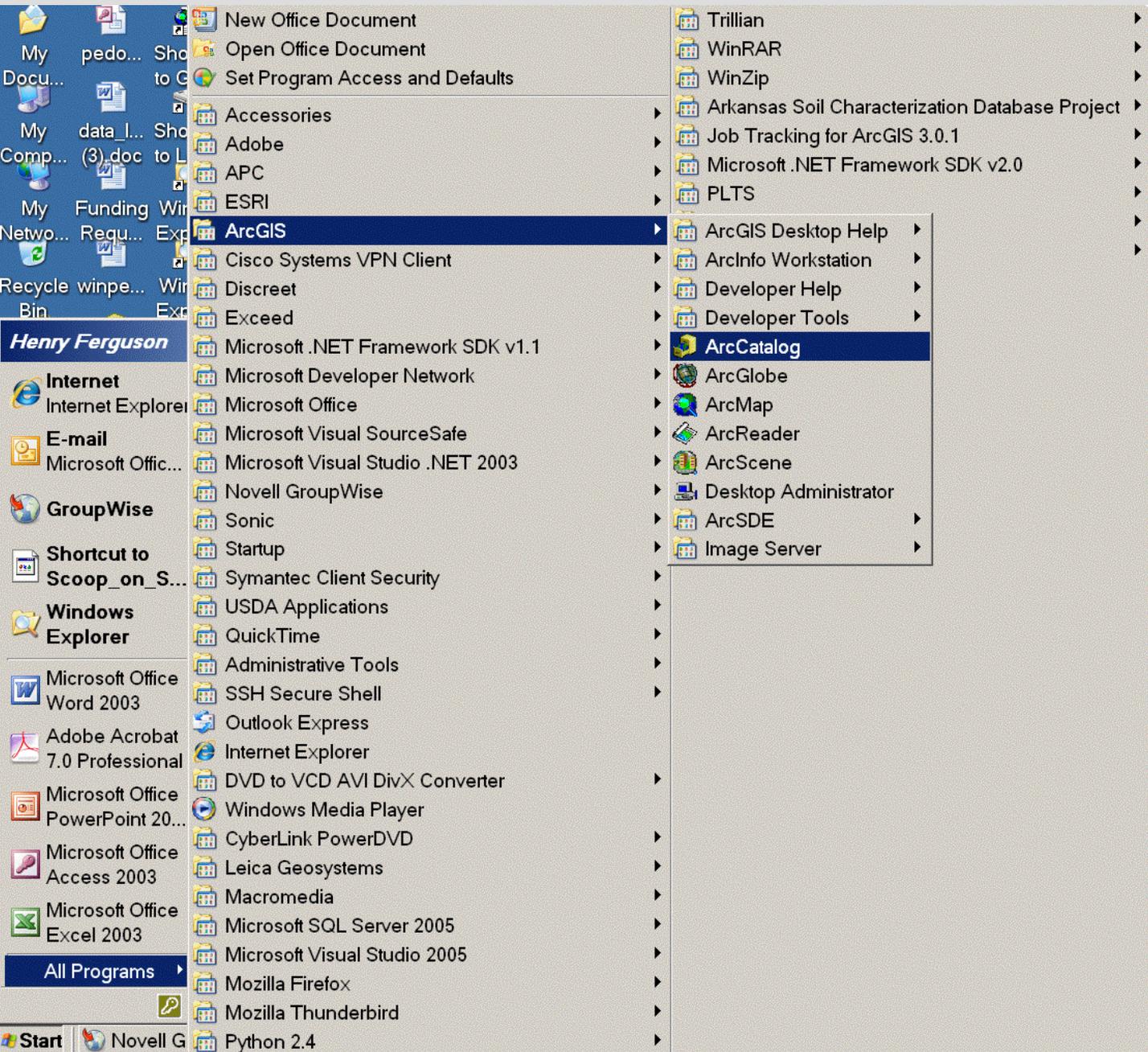
b. Download Soil_Survey_Geodatabase_Setup.zip from:

http://www.soils.usda.gov/education/training/ descriptions.html#GIS_JA
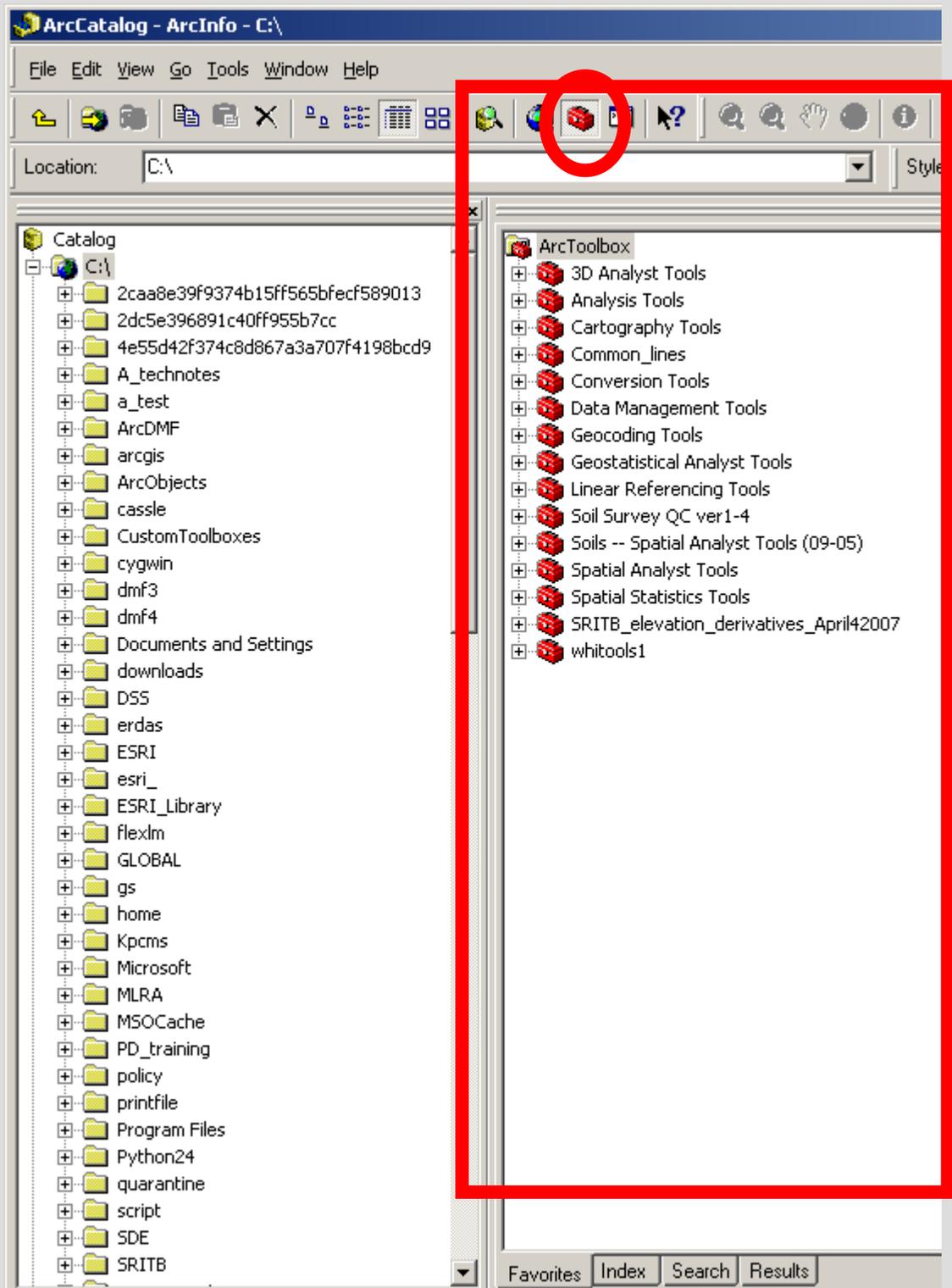
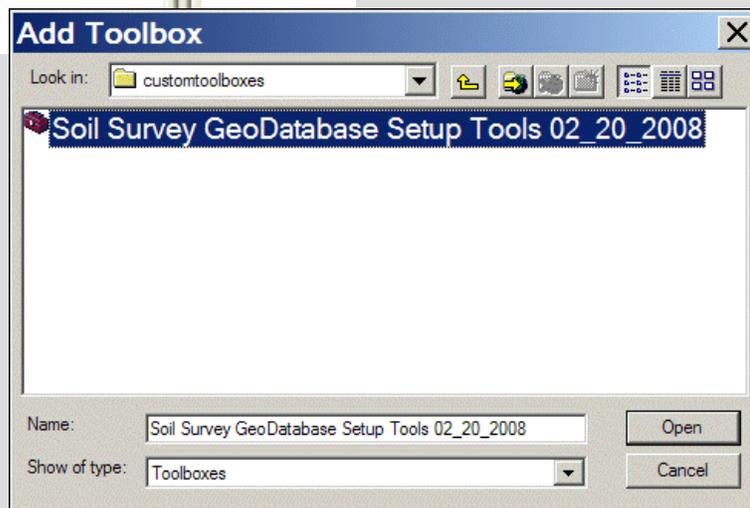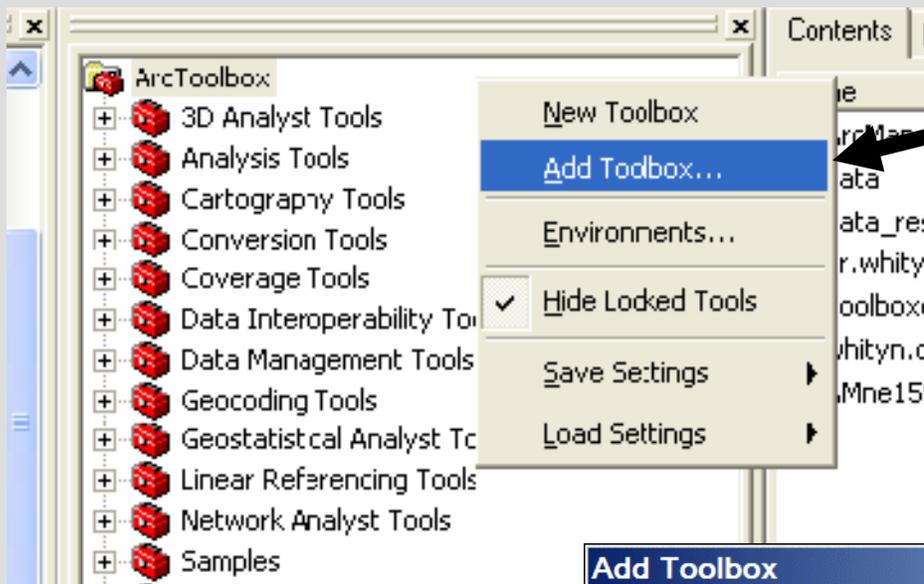c. Save the file to C:\customtoolboxes and Unzip the file (Right-click on the .zip file > Winzip > Extract to here)

Step 2. Add the Soil Survey Geodatabase Setup Toolbox in ArcGIS

b. Open ArcToolbox
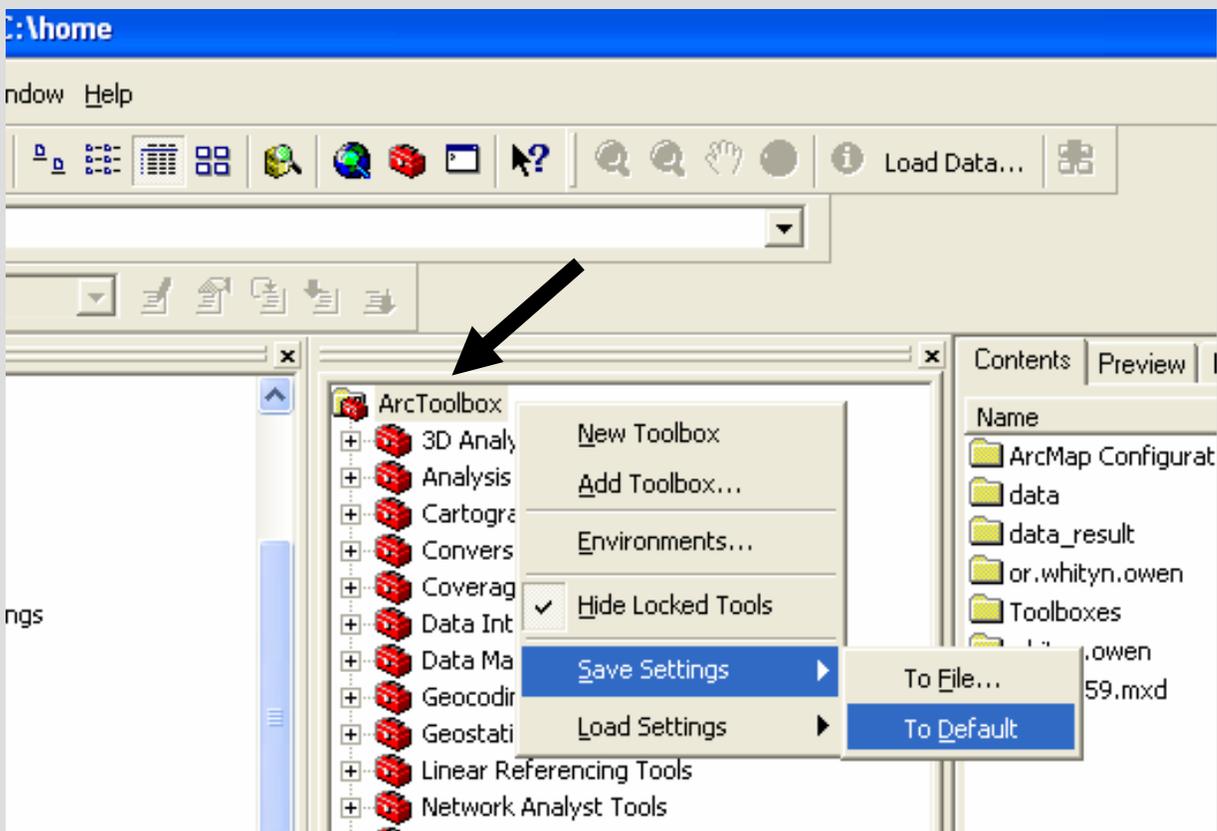
(Click on the Red Toolbox Icon)

c. Right-click on "ArcToolbox" at top of the list in ArcToolbox
- **Select "Add Toolbox"**
- **Navigate to C:\customtoolboxes\ Select "Soil Survey Geodatabase Setup Tools" And select "Open"**

Step 3. Save the Toolbox to Default Settings

**With the toolbox added, right-click on "Arctoolbox" again, click Save Settings > To Default**

This toolbox is now part of your default setup.

It is available in both ArcCatalog and all new ArcMap sessions.

Step 4. Explore the scripts provided in the Soil Survey Geodatabase Setup Toolbox

- **Expand or "Open" the toolbox by clicking the + sign next to the toolbox**

- **The toolbox contains two Geodatabase Setup Scripts**
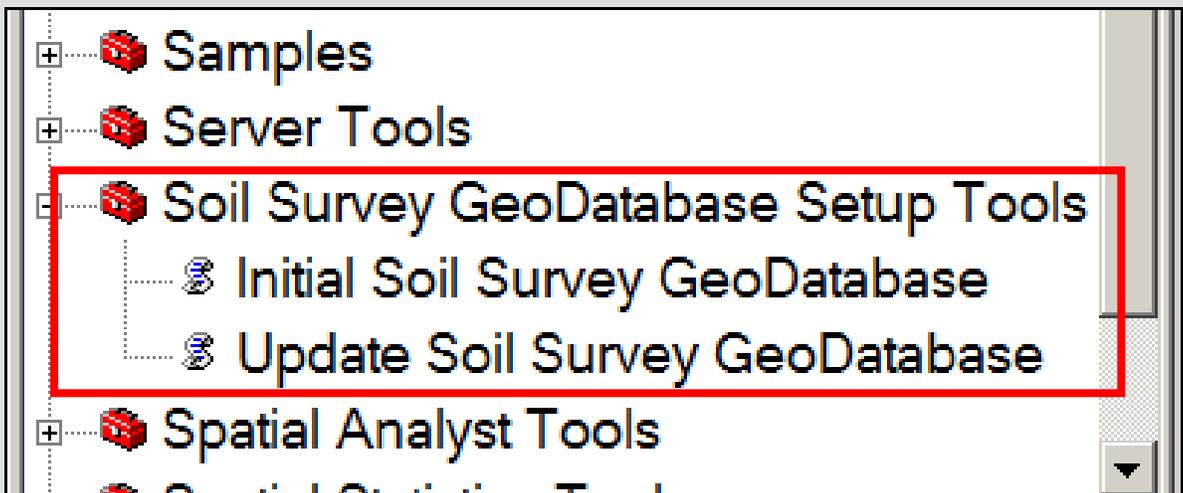
Explore setup scripts continued…

- **Each Setup Script creates a new geodatabase based on user input**

- **Feature classes and attribute fields are generated automatically**

- **Each script is designed for a specific purpose and it is important to under-stand the differences between each Script…**

Script 1. Initial soil survey geodatabase

– For new surveys with no existing digital data

– Option to digitize soils as polygons or as lines

– *Requires* a survey boundary polygon file

Script 2 . Update soil survey Geodatabase

– Requires existing digital soils data

– Designed to import SSURGO shapefiles or coverages downloaded from the Soil Data Mart into the new geodatabase

Run the script "Update Soil Survey Geodatabase"

This script requires existing soils data.

This script creates a new personal geodatabase or file geodatabase and feature dataset for editing existing SSURGO soils data downloaded from the Soil Data Mart.

The script imports shapefiles or coverages to the feature dataset.

The script creates a topology object involving the soil polygon feature class with two rules, no gaps and no overlaps

Step 5. Create location for Geodatabase

Create a MLRA folder on the C:\ drive.

In the folder just created make a project folder using the soil survey area ID number, e.g. ne159, and a folder called geodatabase as well.
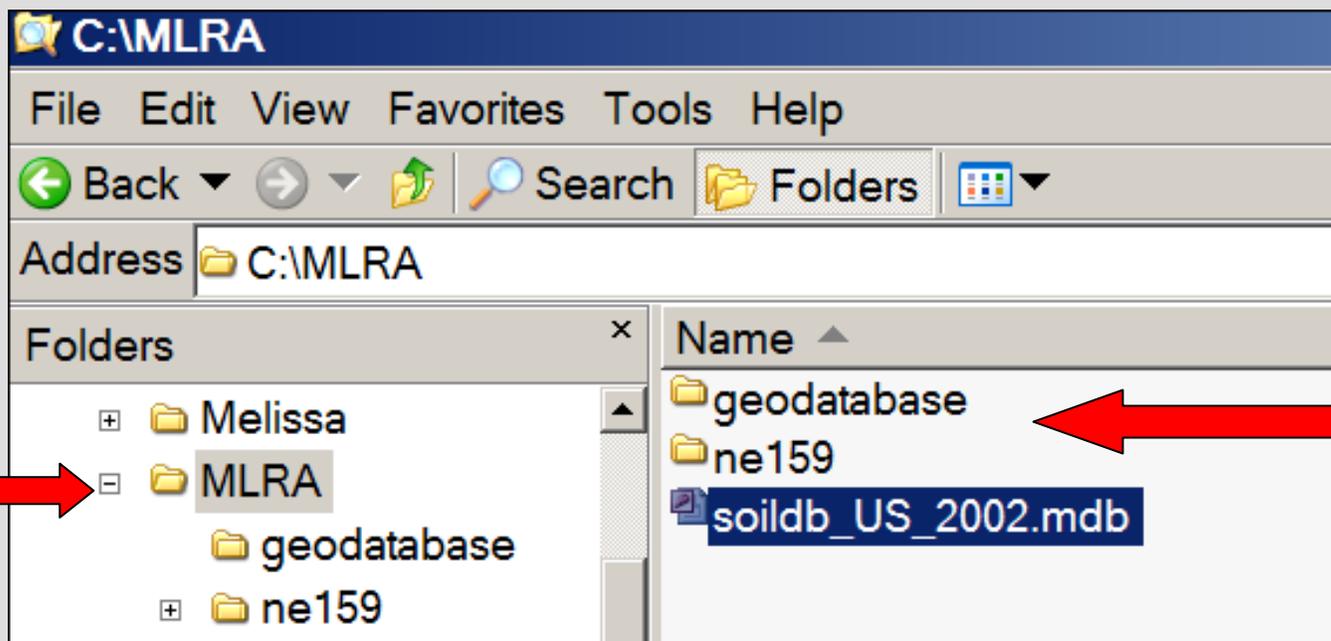
Step 6. Download **SSURGO** data from the **Soil DataMart**

Type or Copy the following link into your web browser
http://soildatamart.nrcs.usda.gov/Default.aspx
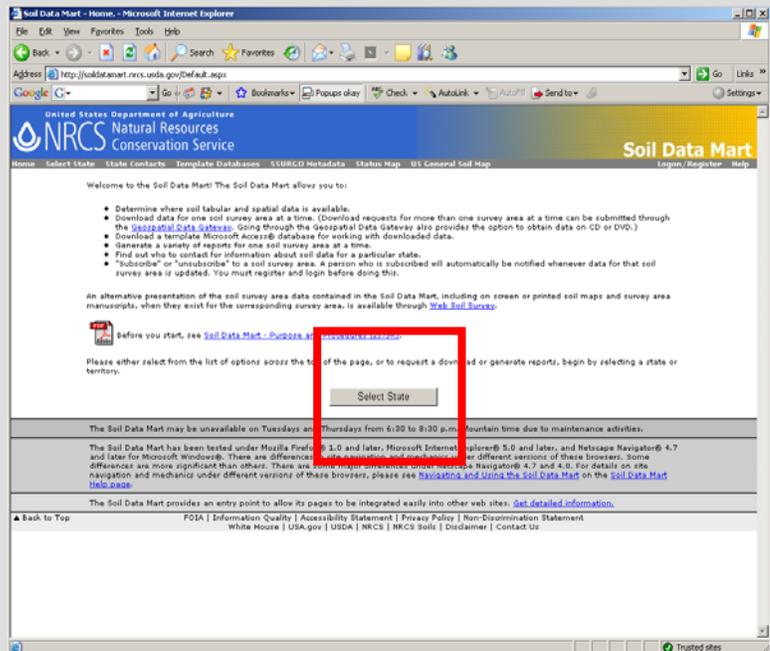
Click Select State

Select State

Then click: Select Survey Area
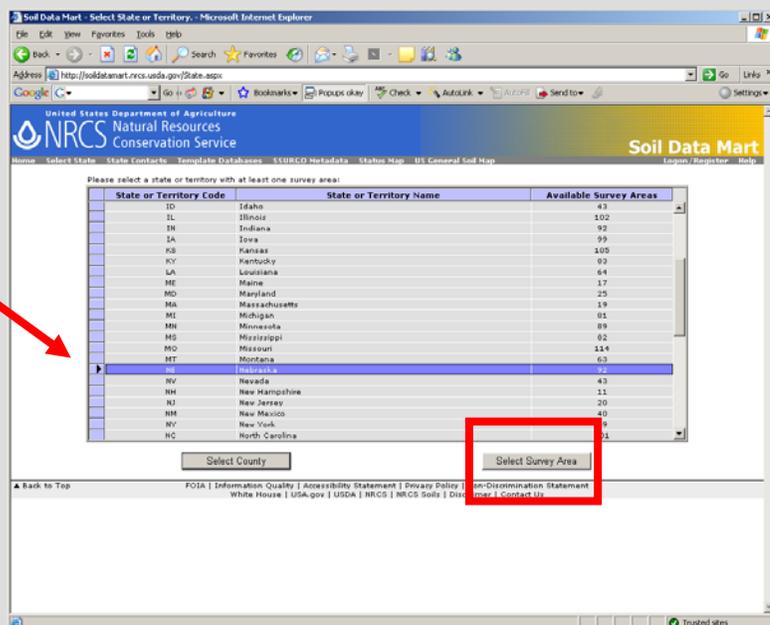
Select desired Soil Survey Area

Click Download Data…

Verify the following information:
1) Download: Tabular and Spatial Data
2) Format: ArcView Shapefile
3) Projection: Default UTM

Next, enter your email address
Then Submit Request…
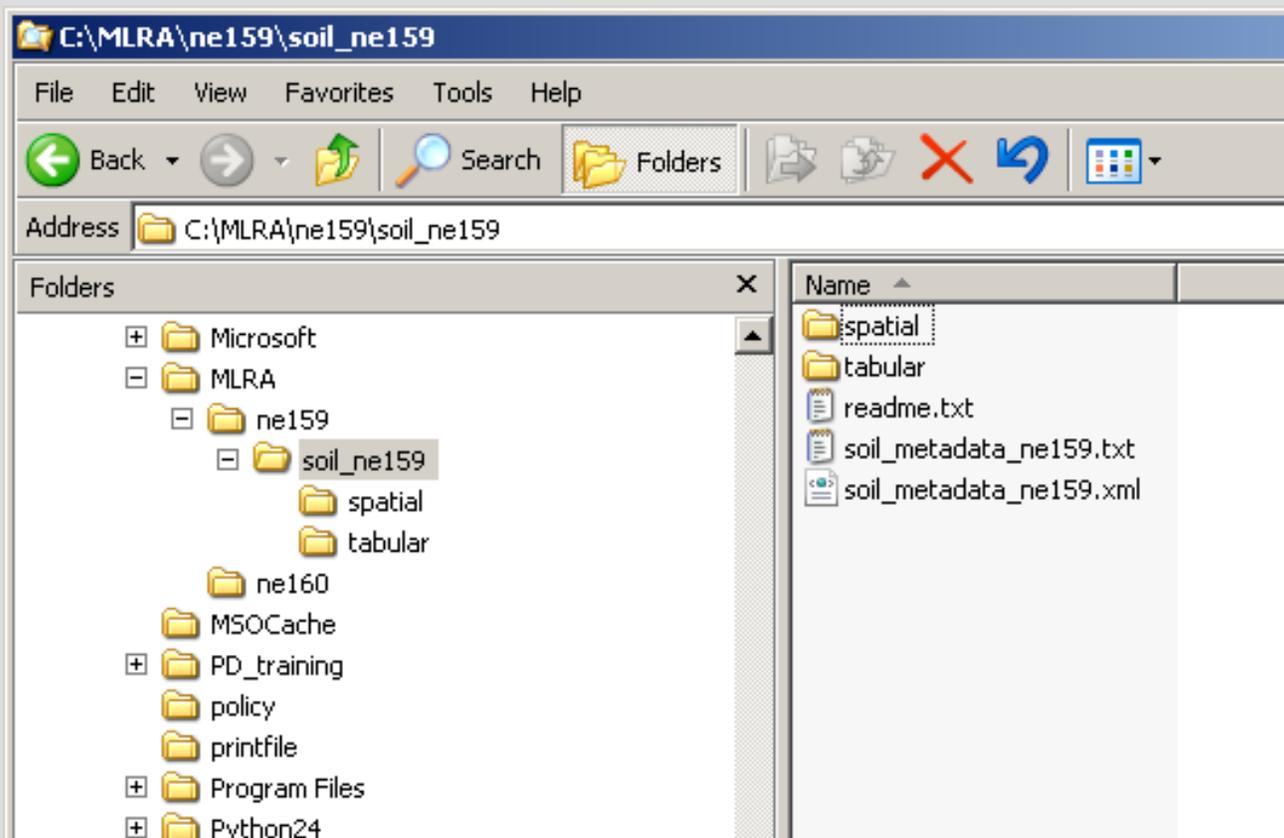

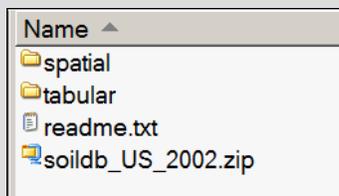# You will receive an email with a link to
download the data

The downloaded zip file contains a template, spatial data, and tabular data

Use the link to download the SSURGO data to the project folder you created

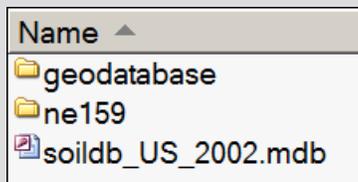**Right–click on the Zip file and choose Winzip >> Extract to here…**
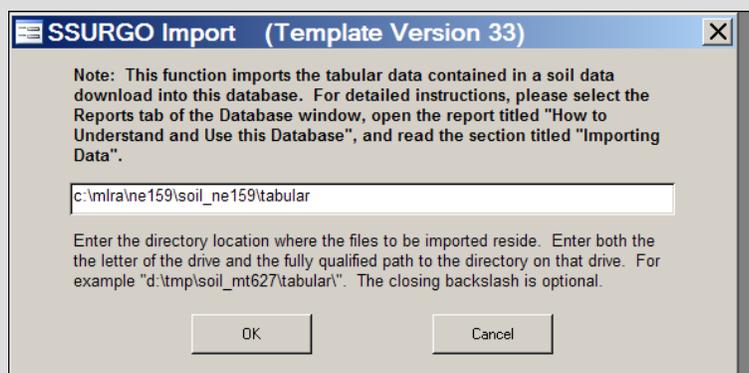
Extract the soildb_US_2002.zip file

Name ▲
📁 spatial
📁 tabular
📄 readme.txt
🗜 soildb_US_2002.zip

Open the soildb_US_2002.mdb file by double clicking on it, ignore any security warnings.

- Unsafe expressions (click on no)

- This file may not be safe… (click open)

Name ▲
📁 geodatabase
📁 ne159
📊 soildb_US_2002.mdb

Enter the directory location of the tablular data into the SSURGO Import screen

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SSURGO Import (Template Version 33) ✕

Note: This function imports the tabular data contained in a soil data download into this database. For detailed instructions, please select the Reports tab of the Database window, open the report titled "How to Understand and Use this Database", and read the section titled "Importing Data".

`c:\mlra\ne159\soil_ne159\tabular`

Enter the directory location where the files to be imported reside. Enter both the the letter of the drive and the fully qualified path to the directory on that drive. For example "d:\tmp\soil_mt627\tabular\". The closing backslash is optional.

[OK]   [Cancel]

Press OK

After you Press OK a Soil Reports Screen pops up. Choose "Exit" and then choose File > Exit and the data are now ready for import into a geodatabase using the script "Update Soil Survey Geodatabase".
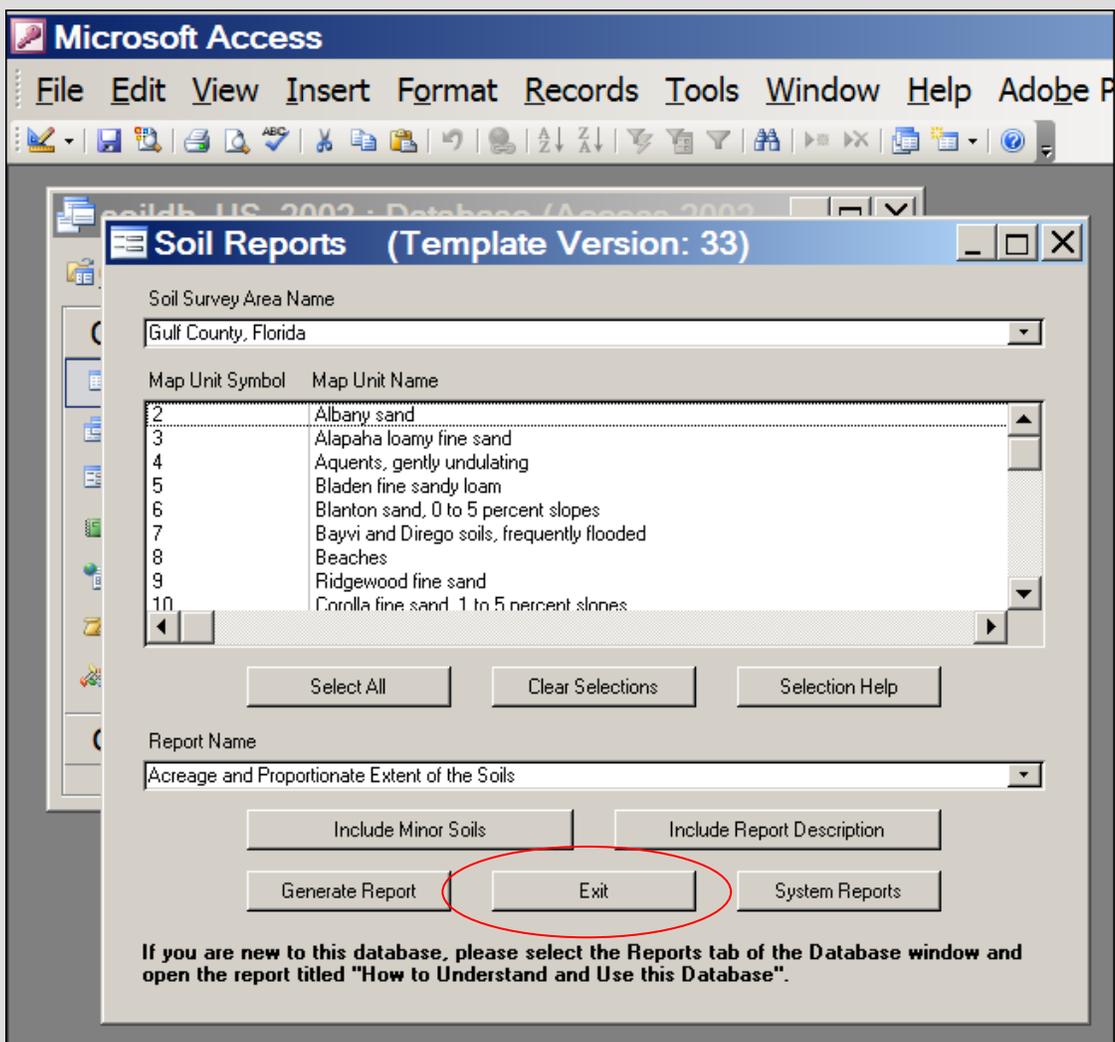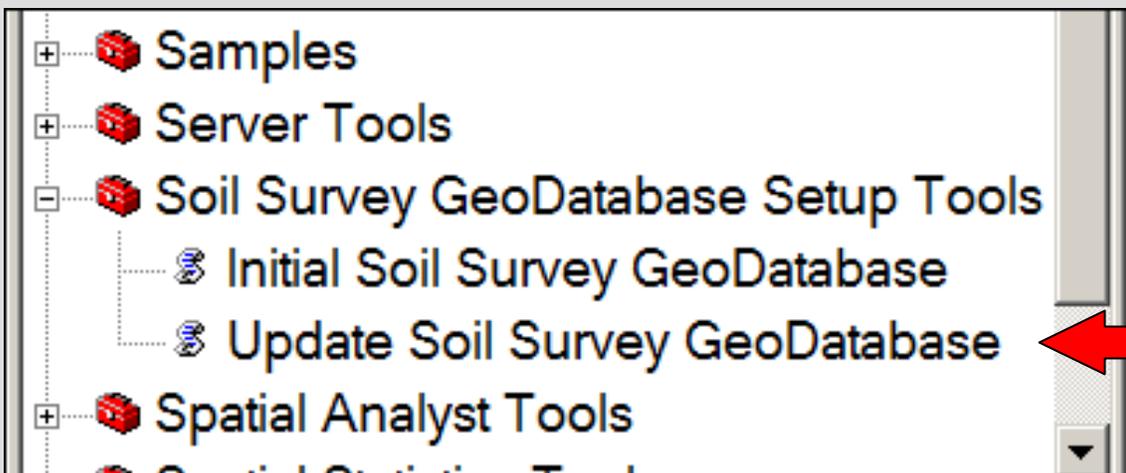
Step 7a. Open the User Input dialog box.

Using ArcCatalog

Double-click the Script (Update Soil Survey Geodatabase) to open the User Input dialog box.
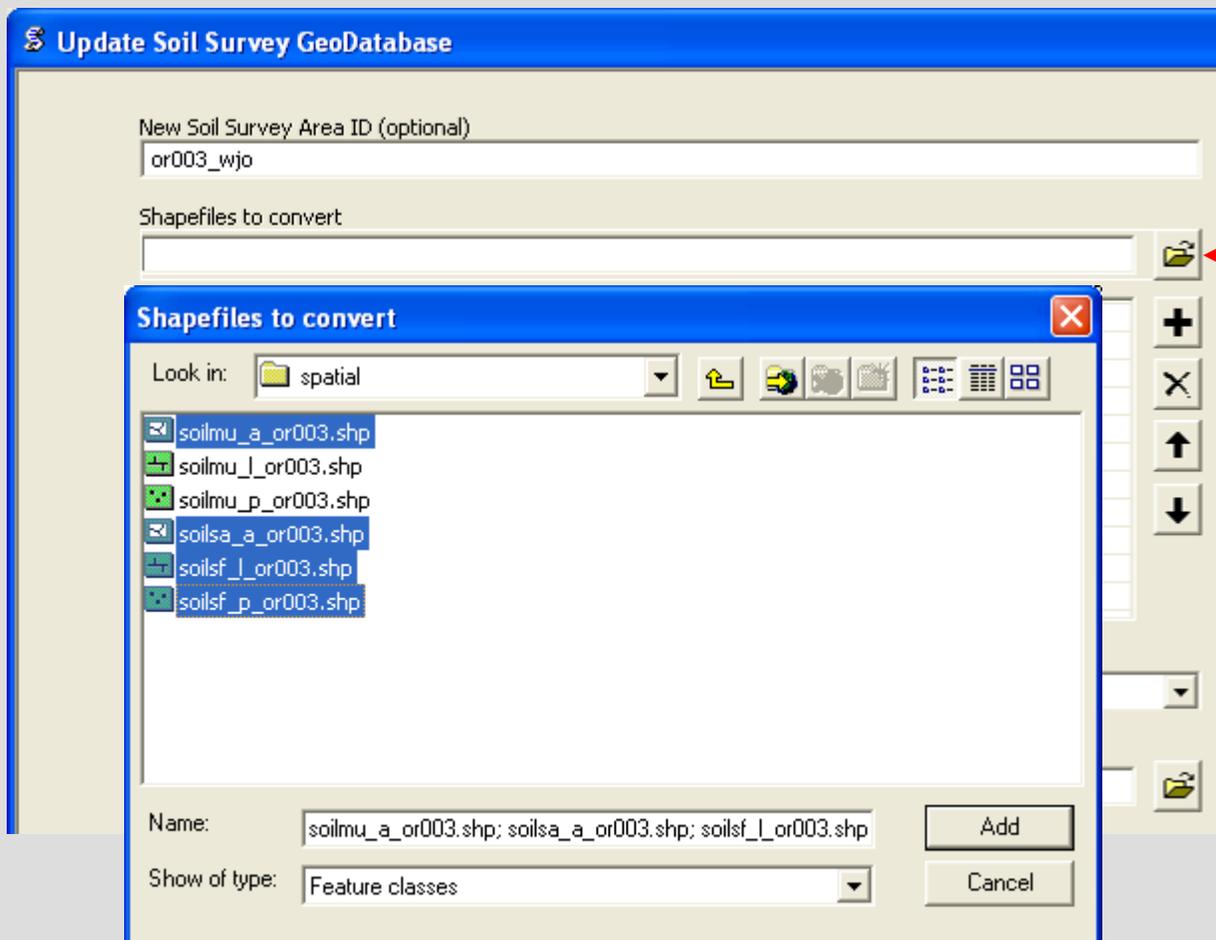
Inputting a New Soil Survey ID will change the naming convention of your Geodatabase. This field is optional.

Click the folder icon and navigate to the SSURGO download to point to the data to be converted.
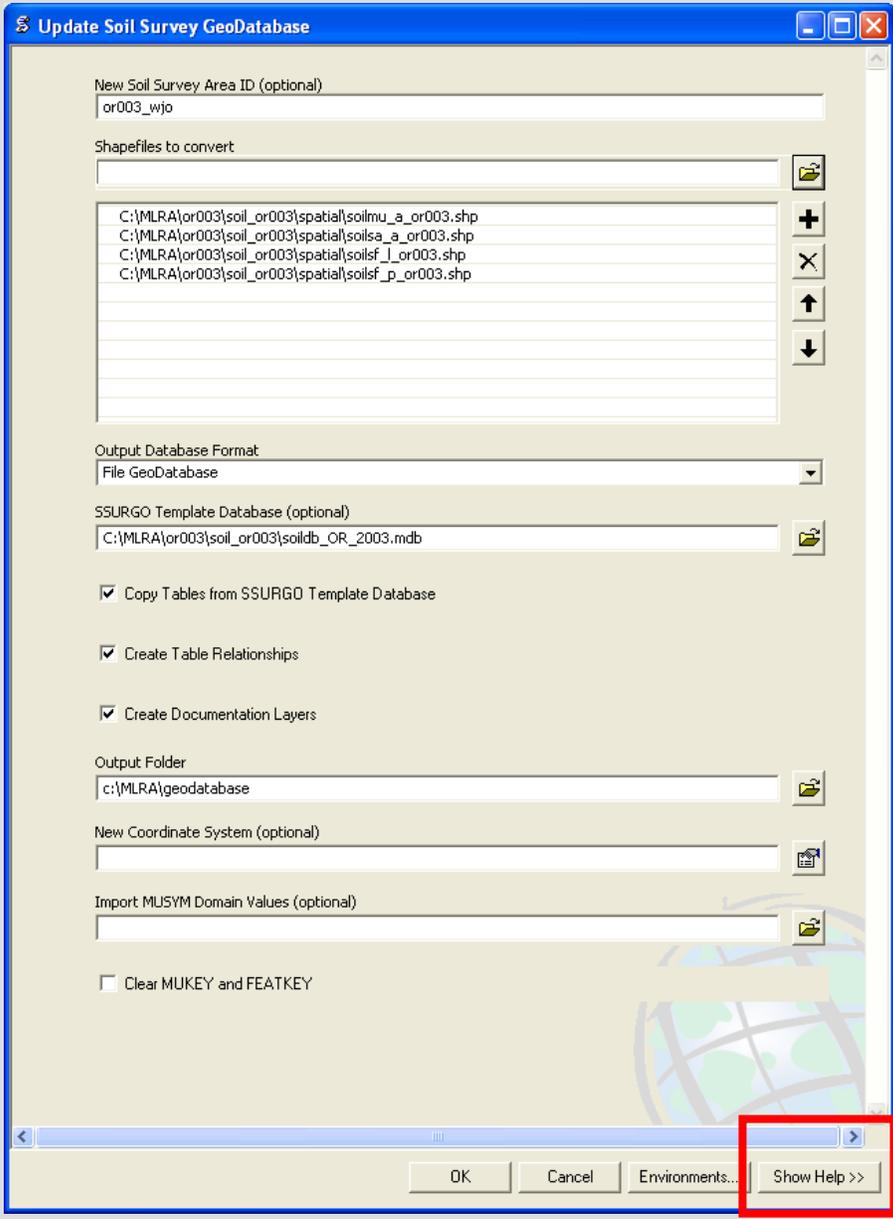
Navigate to the SSURGO download and select data to import into the new geodatabase

Use the Control key to select multiple layers

Click Add

7b. Fill in ALL Parameters according to the instructions in the Help window (soil survey area ID or SSAID numbers are used in place of the st###'s.)

Shapefiles to convert

Browse to and select SSURGO shapefiles to be converted to geodatabase featureclasses. Spatial layers are called featureclasses when stored in a geodatabase. Please make sure that none of the selected shapefiles are currently being referenced in ArcMap or ArcCatalog. This will cause a file-locking conflict and the layers will not be converted.

Output Folder

Directory or folder where the the new geodatabase will be created. User may type full path in this field or click on the browse button to the right.

If a geodatabase of the same name (<"PG" + <survey_id>) already exists, neither it or any of its contents will be overwritten.
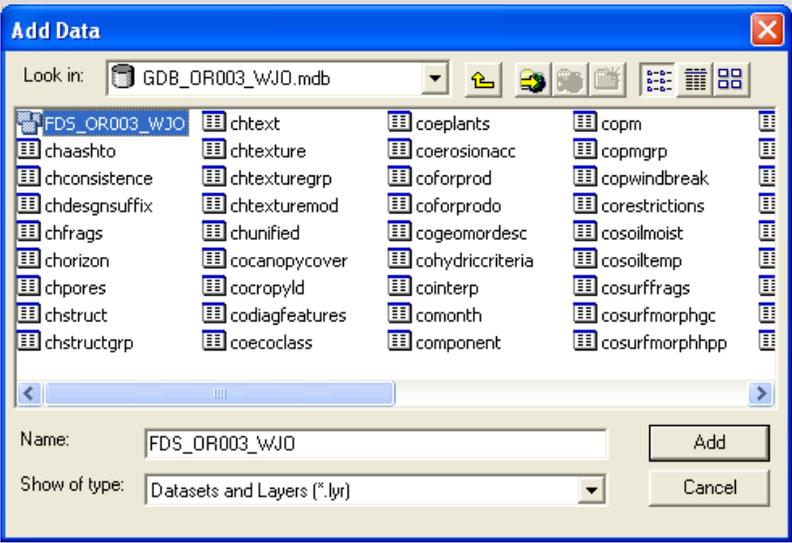
Double-check ALL inputs.

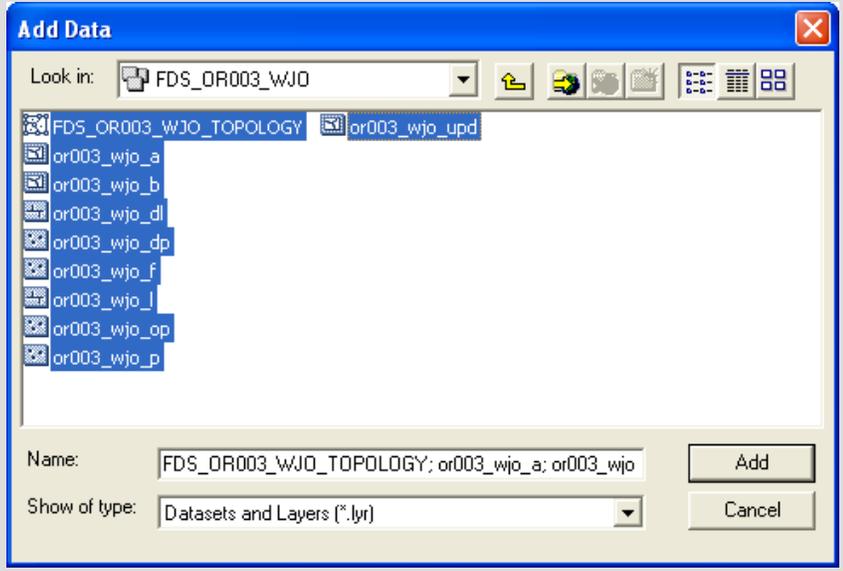# Click OK to run the script.

Step 8. Explore the results
Add the spatial data to ArcMap

Double-click on the Feature Dataset

Hold shift to select all of the feature classes
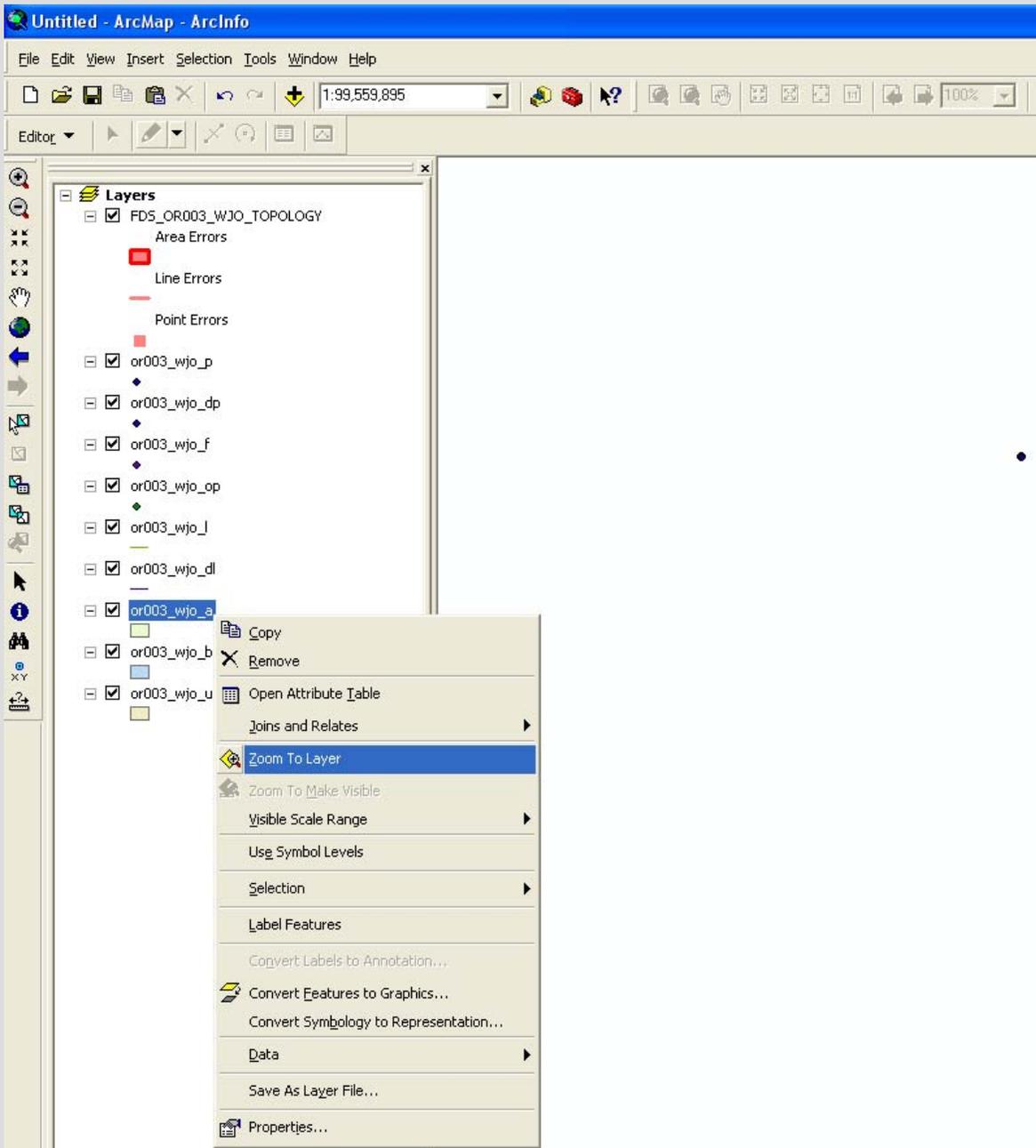
Step 8. Explore Script Result
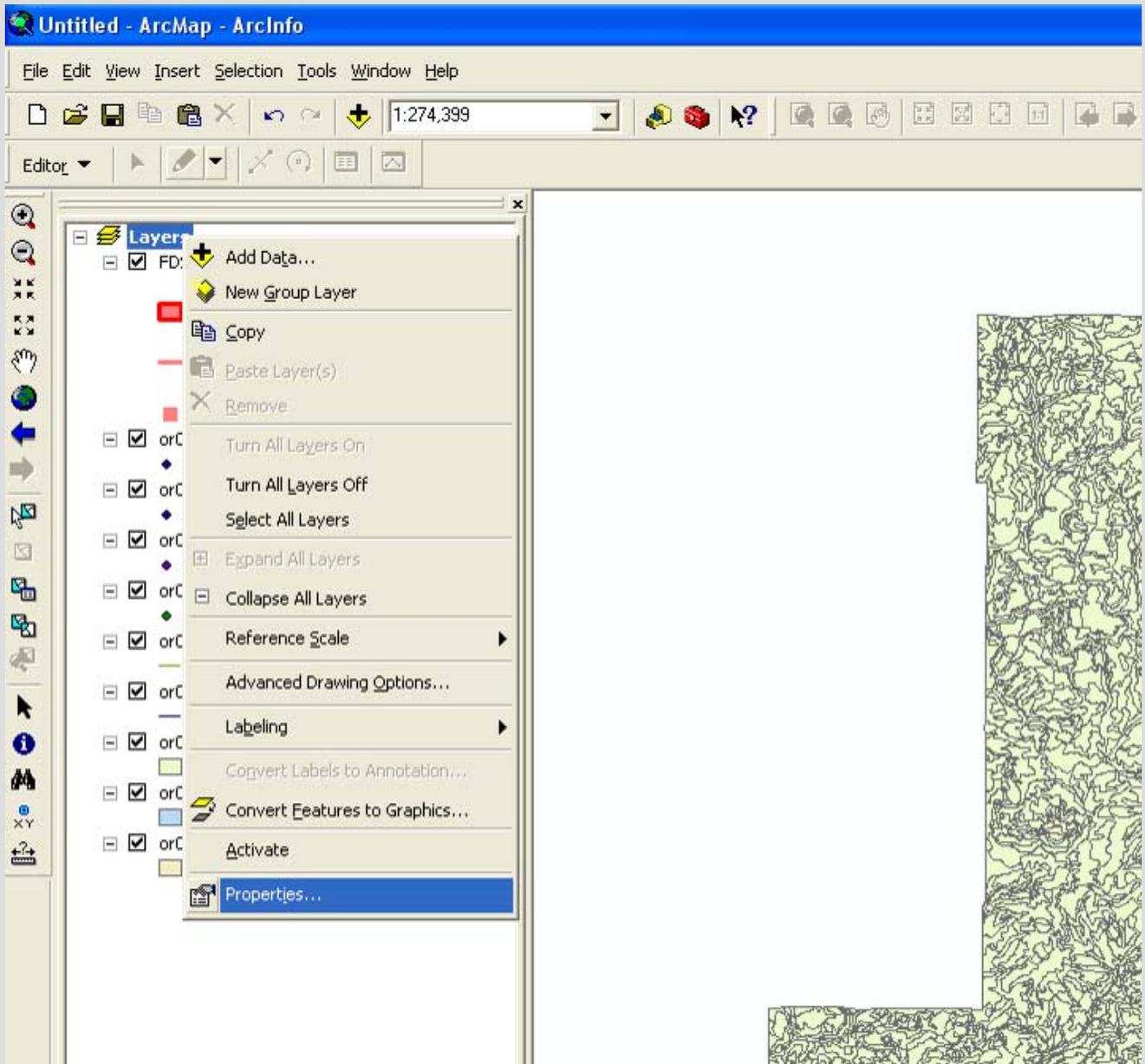## The selected SSURGO data has been imported and renamed

Set the "Full Extent" to the soil survey area

Right-click on the SSURGO soil polygon layer and click Zoom to Layer

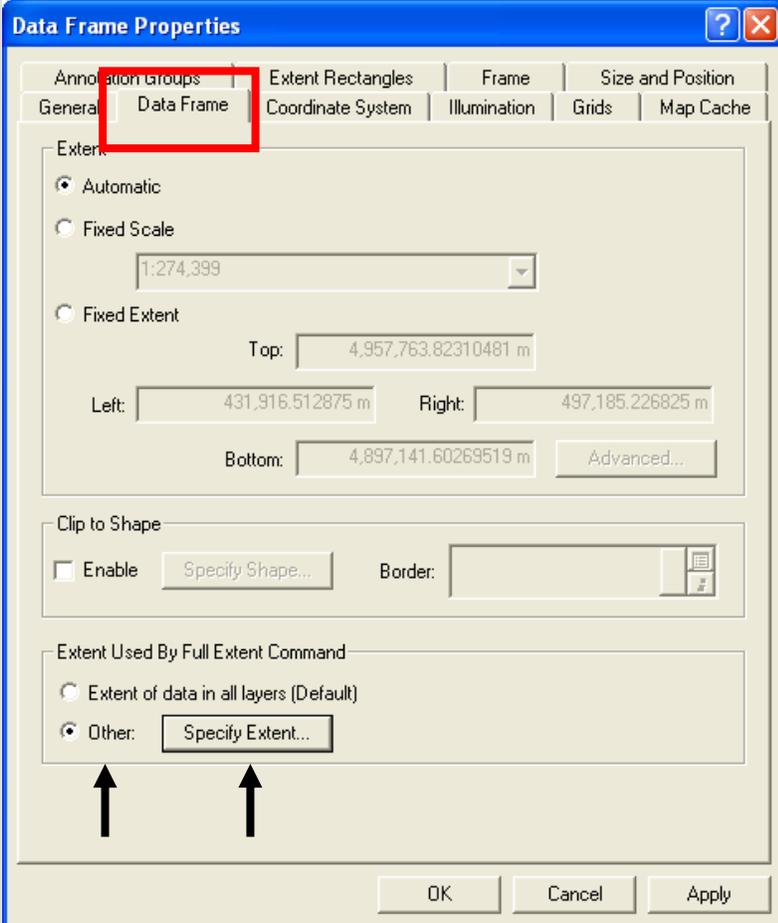# Step 8. Explore Script Result

With the full extent of the soil polygons in view, Right-click on "Layers" in the Table of Contents and select Properties
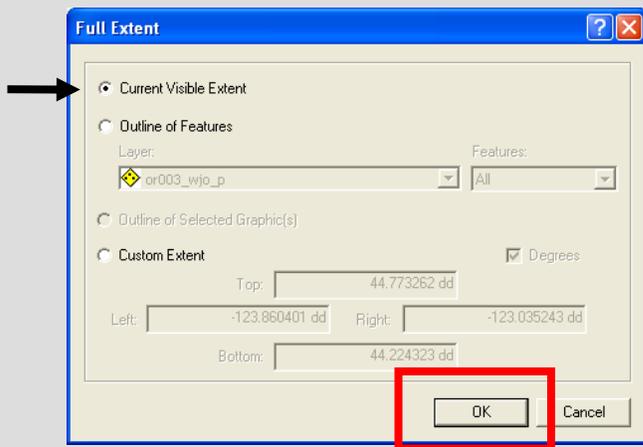
Step 8. Explore Script Result
The selected SSURGO data has been imported and renamed

In the Data Frame Properties window, select the "Data Frame" tab

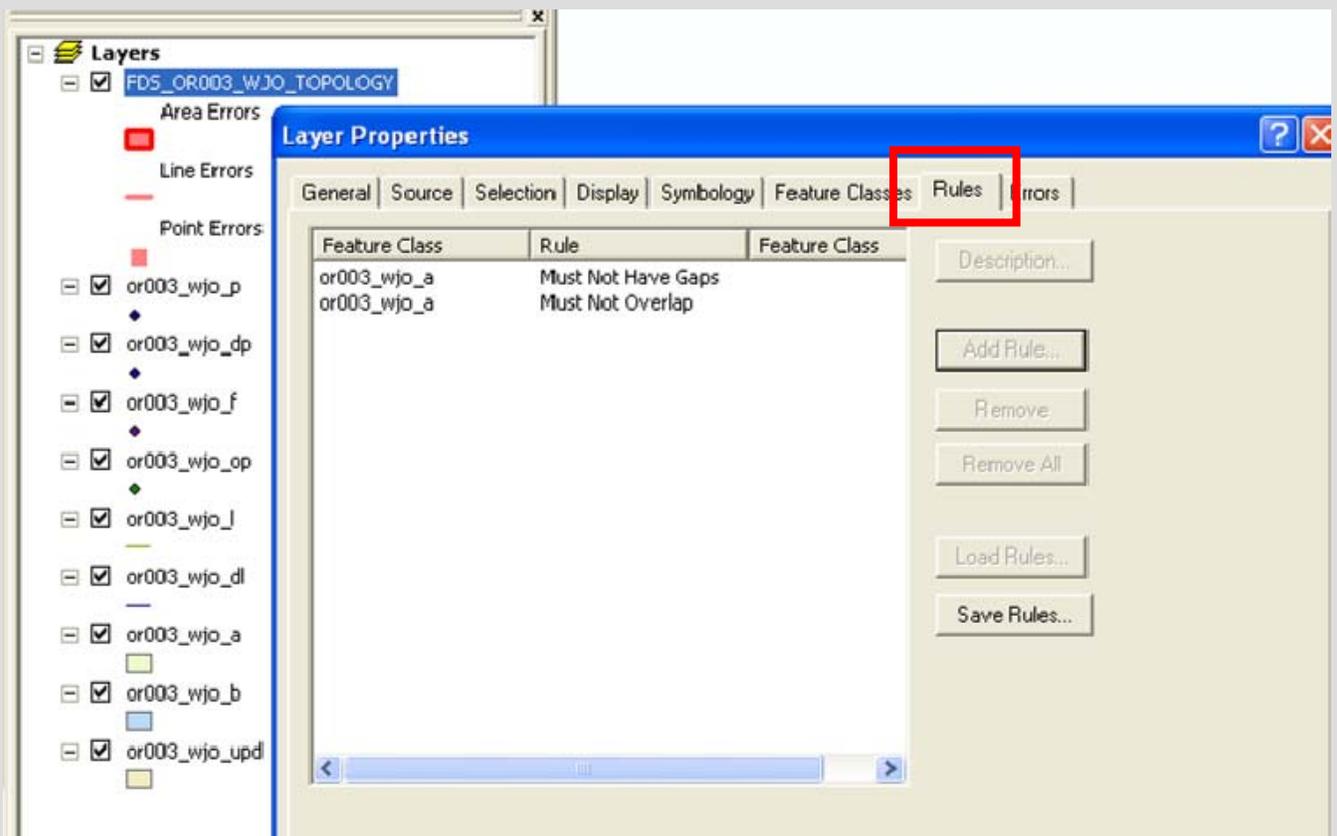**Next, click "Other" under Extent Used by Full Extent Command Then click the "Specify Extent" button**

Finally, click OK to accept the Current Visible Extent default

Right-click on Topology __>> Properties
Two Rules have been associated with the
soil polygons (_a) feature class:
         Must Not Have Gaps
         Must Not Overlap

Please read these NOTES:

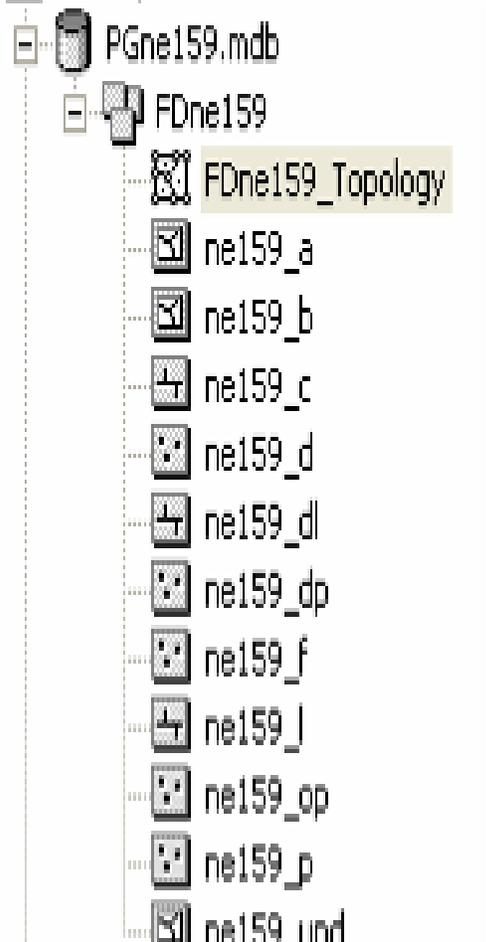"Empty" feature classes are created if no SSURGO data exist. This is common for
Map Unit Lines (_c)
Map Unit Points (_d)
Do not confuse these layers with the Special Feature lines (_l) and points (_p)
Additional feature classes are created for optional use for data management and capture (_dl, _f, _op, _upd)
If not used, they may be deleted

PGne159.mdb
FDne159
FDne159_Topology
ne159_a
ne159_b
ne159_c
ne159_d
ne159_dl
ne159_dp
ne159_f
ne159_l
ne159_op
ne159_p
ne159_upd

Personal Geodatabase

Feature Dataset

Topology Object

(_a) Soil polygon feature class

(_b) Boundary polygon feature class

(_c) Soil line feature class

(_d) Soil point feature class

(_dl) Documentation line feature class

(_dp) Documentation point feature class

(_f) Flag point feature class

(_l) Special feature line feature class

(_op) Observation points feature class

(_p) Special feature point feature class

(_upd) Progress polygon feature class