

## OJT Training Module Cover Sheet

**Title:** Geodatabase Setup for Update Surveys

**Type:**      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 I. Download and Unzip the Toolboxes

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

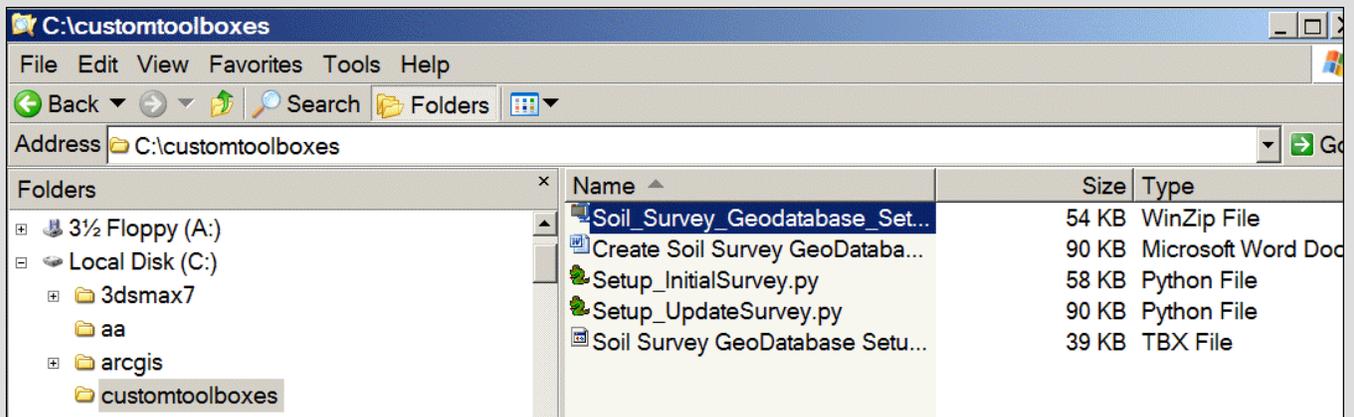
**C:\customtoolboxes**

- b. Download **Soil\_Survey\_Geodatabase\_Setup.zip** from:

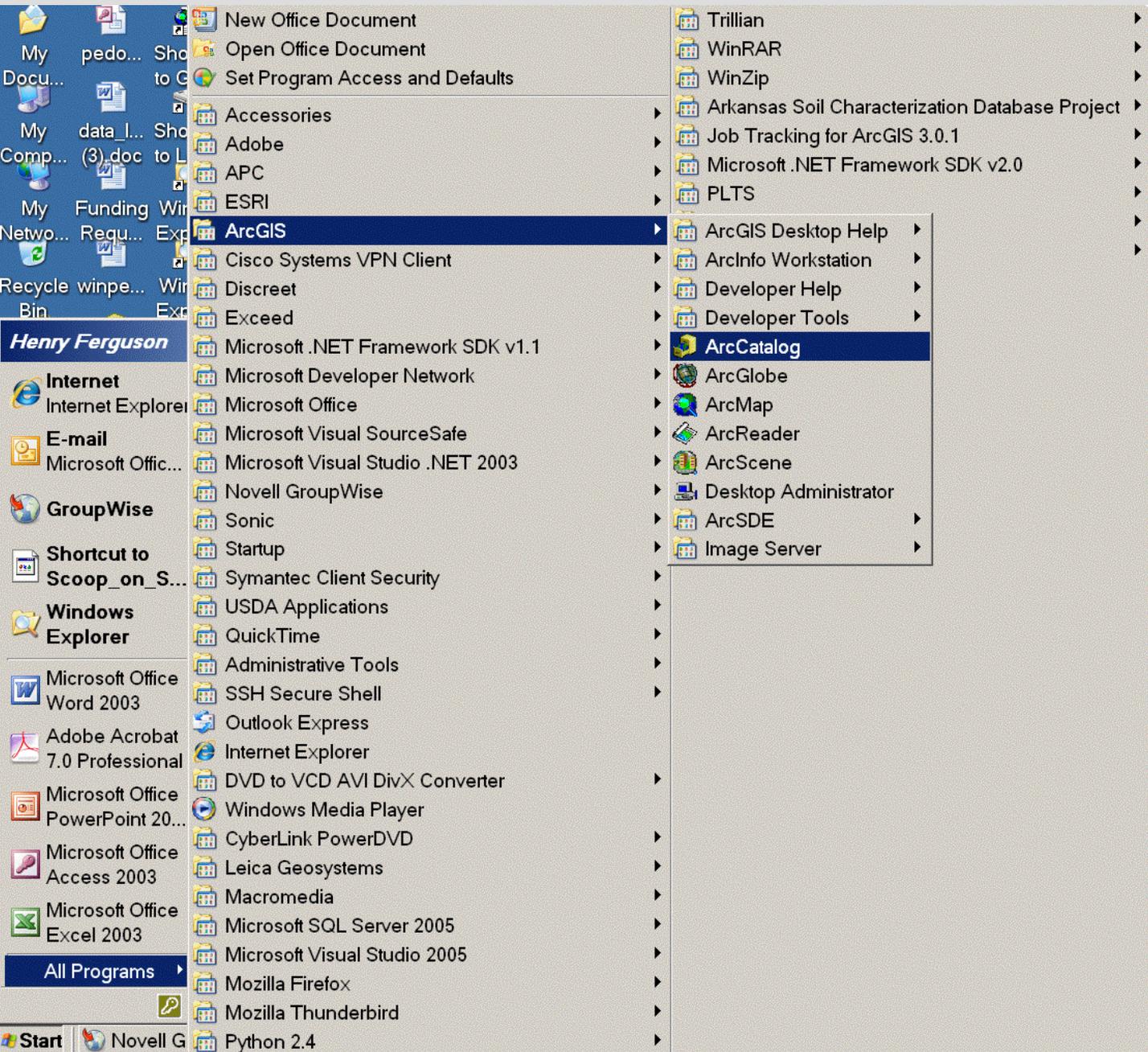
[http://www.soils.usda.gov/education/training/descriptions.html#GIS\\_JA](http://www.soils.usda.gov/education/training/descriptions.html#GIS_JA)

- c. Save the file to **C:\customtoolboxes** and Unzip the file

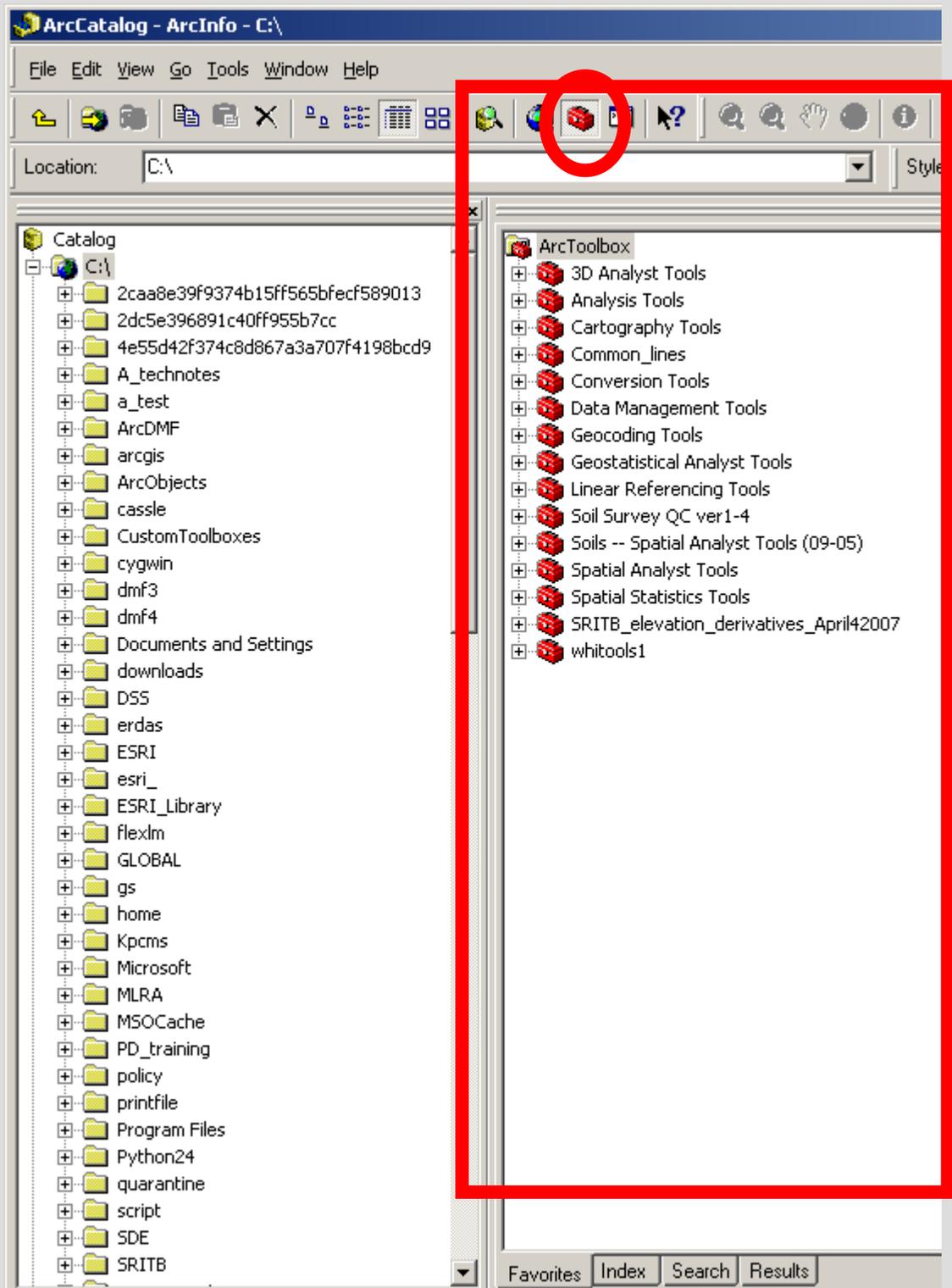
(Right-click on the .zip file > Winzip > Extract to here)



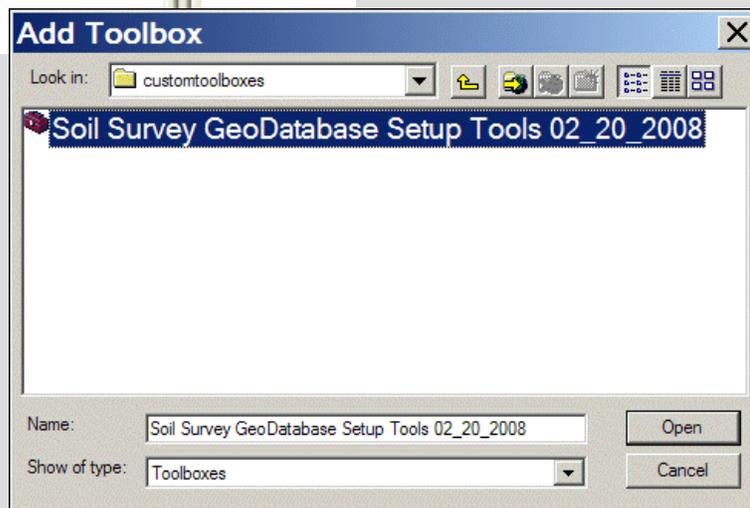
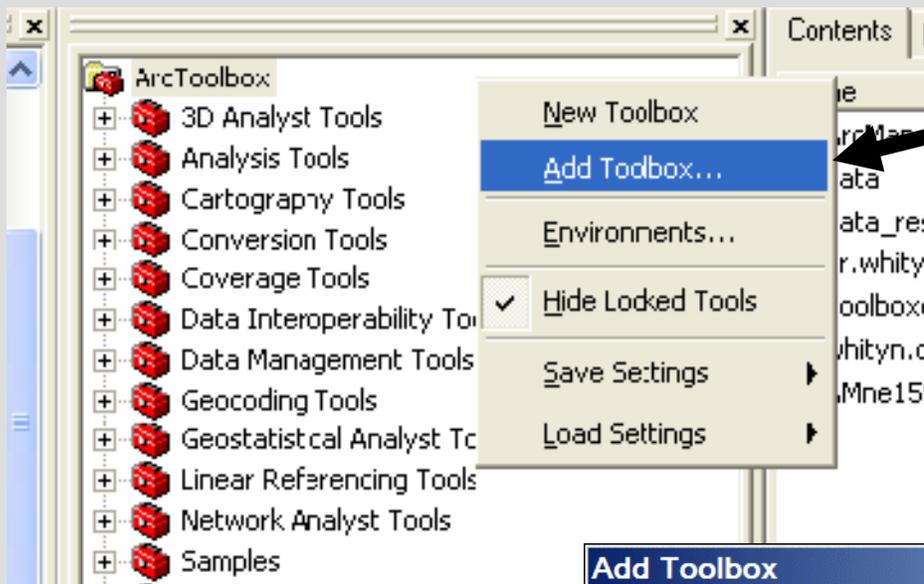
# Step 2. Add the Soil Survey Geodatabase Setup Toolbox in ArcGIS



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

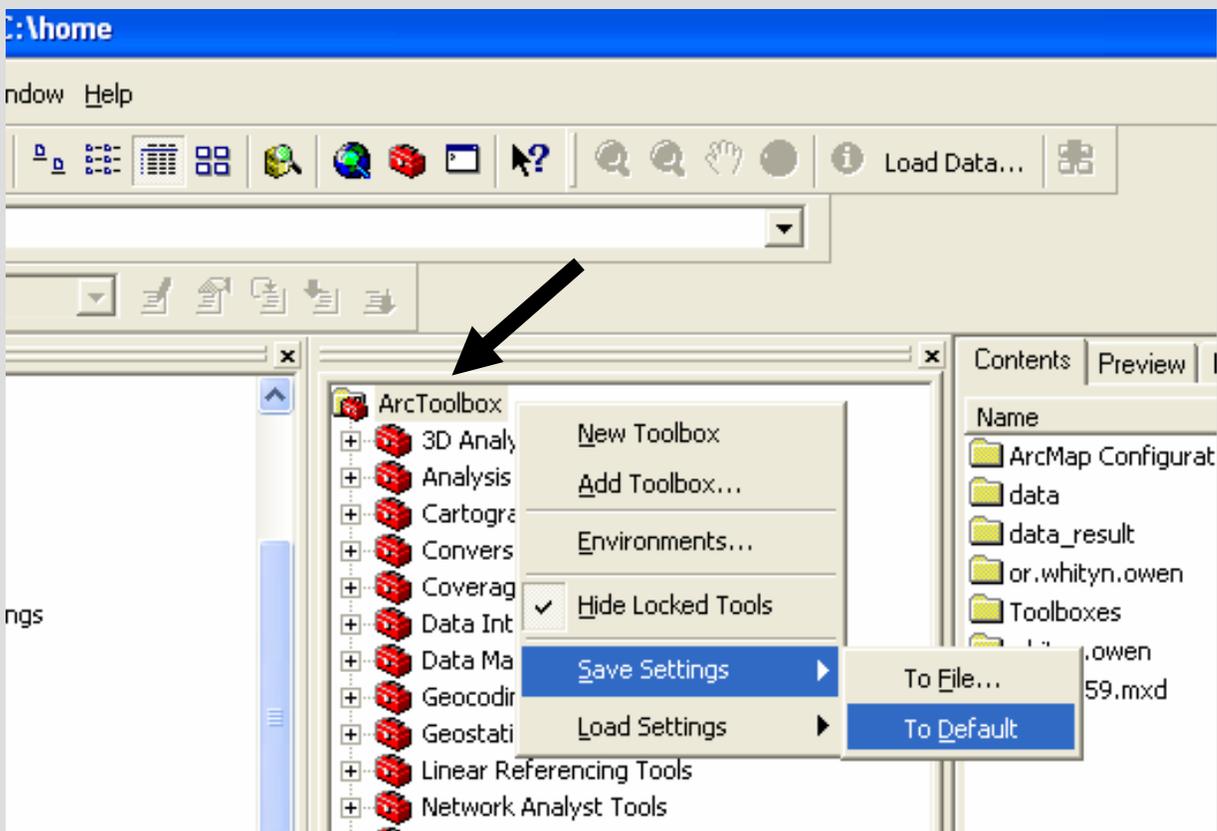


- c. Right-click on “ArcToolbox” at top of the list in ArcToolbox
- Select “Add Toolbox”
  - Navigate to C:\customtoolboxes\  
Select  
“Soil Survey Geodatabase Setup Tools”  
And select “Open”



# Step 3. Save the Toolbox to Default Settings

With the toolbox added, right-click on “ArcToolbox” again, click **Save Settings > To Default**

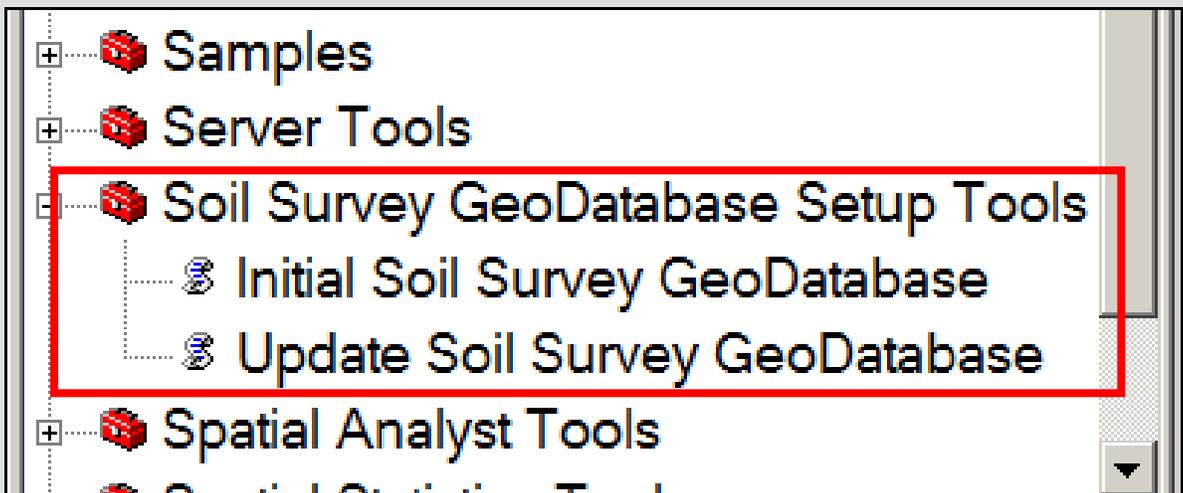


**This toolbox is now part of your default setup.**

**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 understand 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.

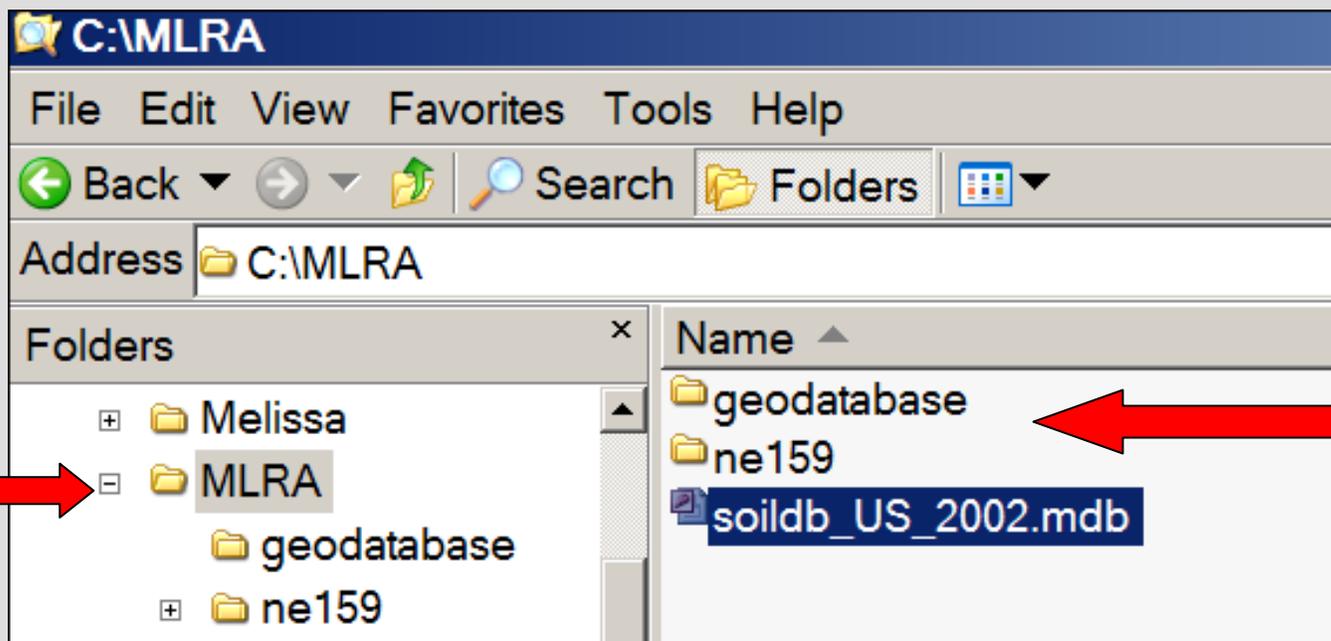
The script imports shapefiles or coverages to the feature dataset.

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.

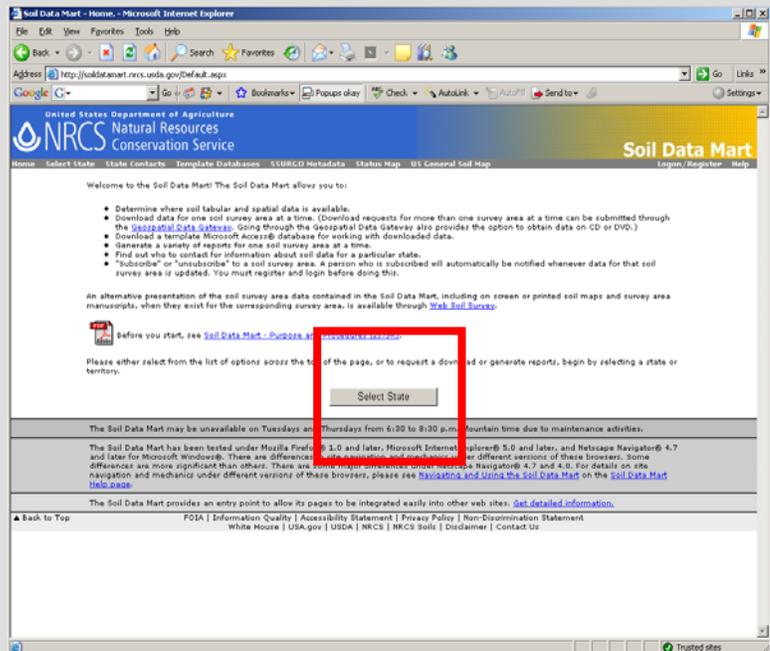


# Step 6. Download SSURGO data from the Soil DataMart

Type or Copy the following link into your web browser

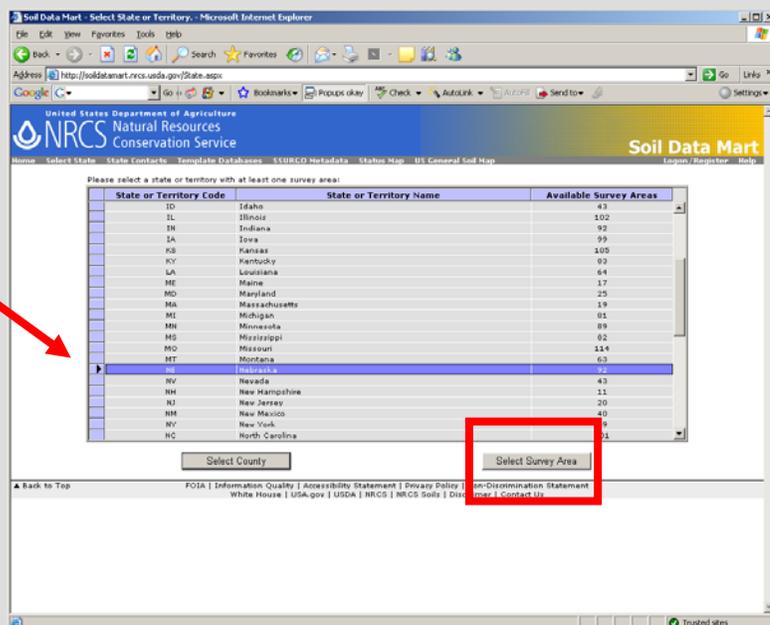
<http://soildatamart.nrcs.usda.gov/Default.aspx>

Click  
Select  
State



Select  
State

Then click:  
Select  
Survey  
Area



# Select desired Soil Survey Area

Soil Data Mart - Select Soil Survey Area. - Microsoft Internet Explorer

Address: <http://soildatamart.nrcs.usda.gov/Survey.aspx?State=TX>

United States Department of Agriculture  
Natural Resources Conservation Service  
Texas  
Soil Data Mart

Home Select State State Contacts Template Databases SSURGO Metadata Status Map US General Soil Map Logon/Register Help

Please select a soil survey area:

Survey Area Symbol	Survey Area Name	Available Data
NM719	Fort Bliss Military Reservation, New Mexico and Texas	Tabular and Spatial
TX001	Anderson County, Texas	Tabular and Spatial
TX003	Andrews County, Texas	Tabular and Spatial
TX005	Angelina County, Texas	Tabular and Spatial
TX009	Archer County, Texas	Tabular and Spatial
TX011	Armstrong County, Texas	Tabular and Spatial
TX013	Atascosa County, Texas	Tabular and Spatial
TX017	Bailey County, Texas	Tabular and Spatial
TX019	Bandera County, Texas	Tabular and Spatial
TX021	Bastrop County, Texas	Tabular and Spatial
TX023	Baylor County, Texas	Tabular and Spatial
TX025	Bee County, Texas	Tabular and Spatial
TX027	Bell County, Texas	Tabular and Spatial
TX029	Bexar County, Texas	Tabular and Spatial
TX033	Borden County, Texas	Tabular and Spatial
TX035	Bosque County, Texas	Tabular and Spatial
TX037	Bowie County, Texas	Tabular and Spatial
TX039	Brazoria County, Texas	Tabular and Spatial
TX041	Brazos County, Texas	Tabular and Spatial
TX045	Briscoe County, Texas	Tabular and Spatial

\*Mapping for this survey is still in progress and the corresponding spatial and tabular data are not yet complete.

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Done Trusted sites

start C:\Pedon I:\Pedon 05... Adobe Phot... Inbox - Mic... Microsoft Po... Soil Data Ma... 3:11 PM

**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...

Soil Data Mart - Download Soil Survey Area Data. - Microsoft Internet Explorer

United States Department of Agriculture  
NRCS Natural Resources Conservation Service

NE159 - Seward County, Nebraska  
Nebraska

Soil Data Mart

Please select the class of data you wish to download: ( Survey Area Version 5 , Tabular Version 5 , Spatial Version 2 )

Tabular Data Only **1**  Tabular and Spatial Data  Spatial Data Only  Template Database Only

**2** Please select a spatial format:  **3** Please select a coordinate system:

Please select a template database (optional):

State	MS Access Version	Template DB Version	Template DB Name	Size
US	Access 2002	33.1	soildb_US_2002	1.7M
US	Access 2000	33.1	soildb_US_2000	1.7M
US	Access 97	32	soildb_US_97	1.4M
AK	Access 2002	32.15	soildb_AK_2002	2.5M

**Description:** This is the national SSURGO Template Database for Microsoft Access 2002/2003. This database should be used only when no state specific customized SSURGO Template Database is available. This database is compatible with Soil Data Viewer 5.1.  
8-1-07 Three irrigation reports were added for use with 7 new national irrigation rules.  
Irrigation - General and Sprinkler  
Irrigation - Micro

Please enter your e-mail address:

If the e-mail account entered above is protected by spam blocking software, you will need to authorize e-mail from SoilDataMart@nrcs.usda.gov in order to receive e-mail notification once your request has been processed.

FOIA | Information Quality | Accessibility Statement | Privacy Policy | Non-Discrimination Statement  
White House | USA.gov | USDA | NRCS | NRCS Soils | Disclaimer | Contact Us

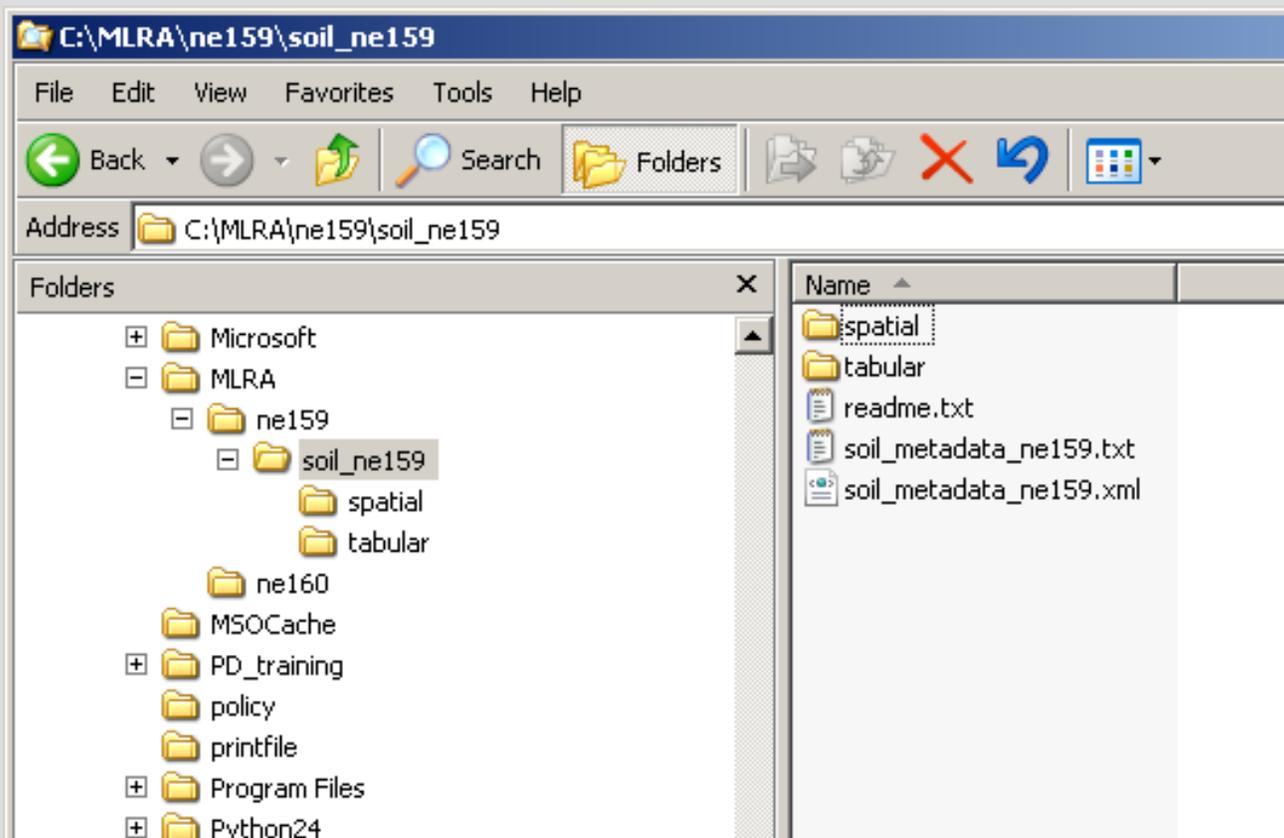
Trusted sites

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

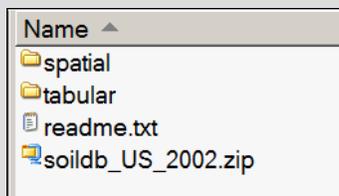
**The downloaded zip file contains a template, spatial data, and tabular data**

**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...**

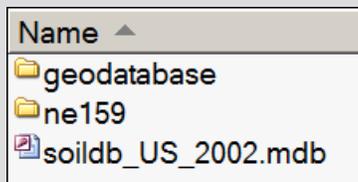


# Extract the soildb\_US\_2002.zip file

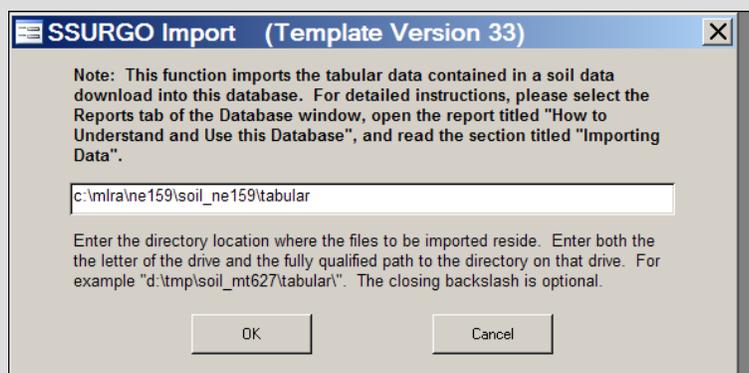


**Open the soildb\_US\_2002.mdb file by double clicking on it, ignore any security warnings.**

- **Unsafe expressions ( click on no)**
- **This file may not be safe... (click open)**

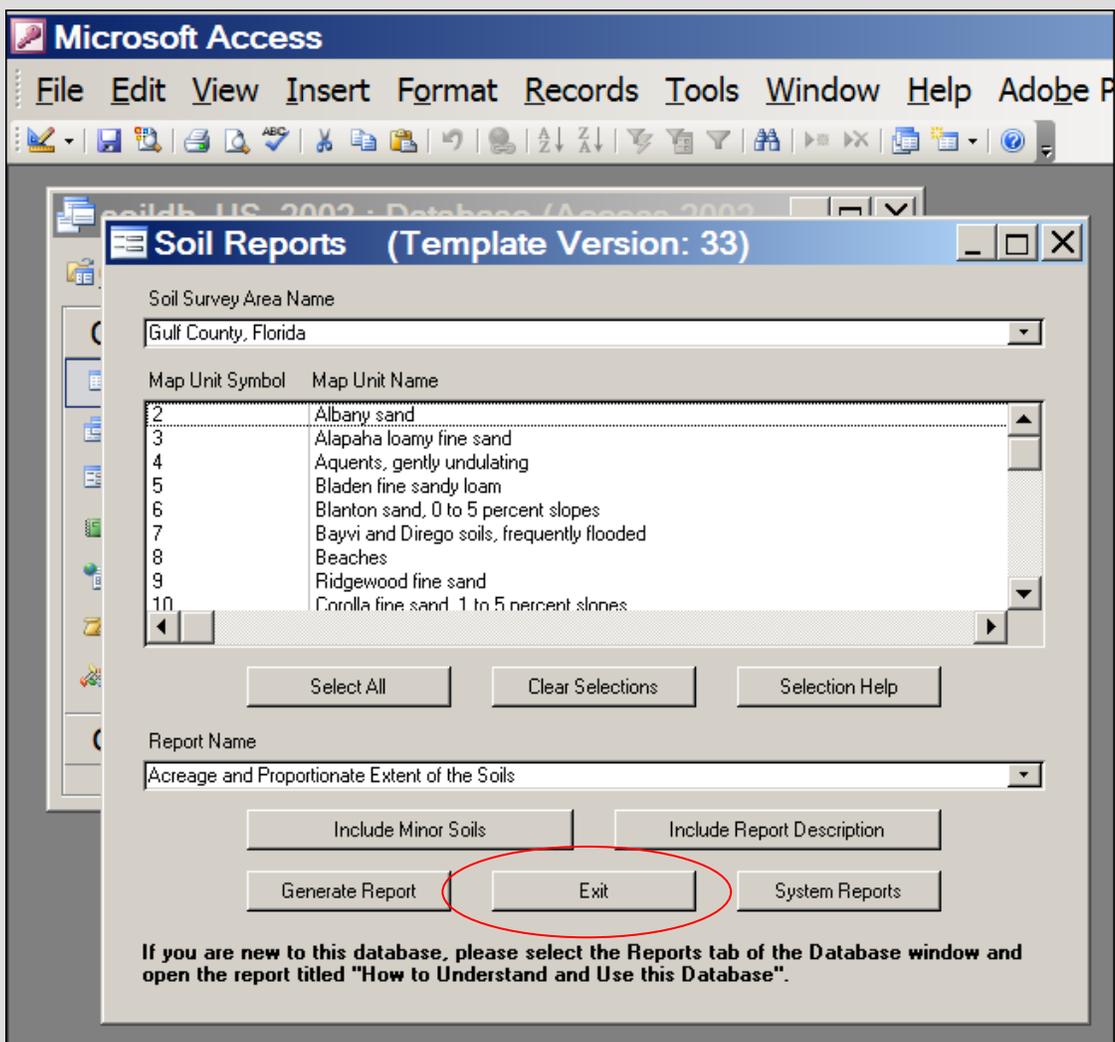


**Enter the directory location of the tabular data into the SSURGO Import screen**



**Press OK**

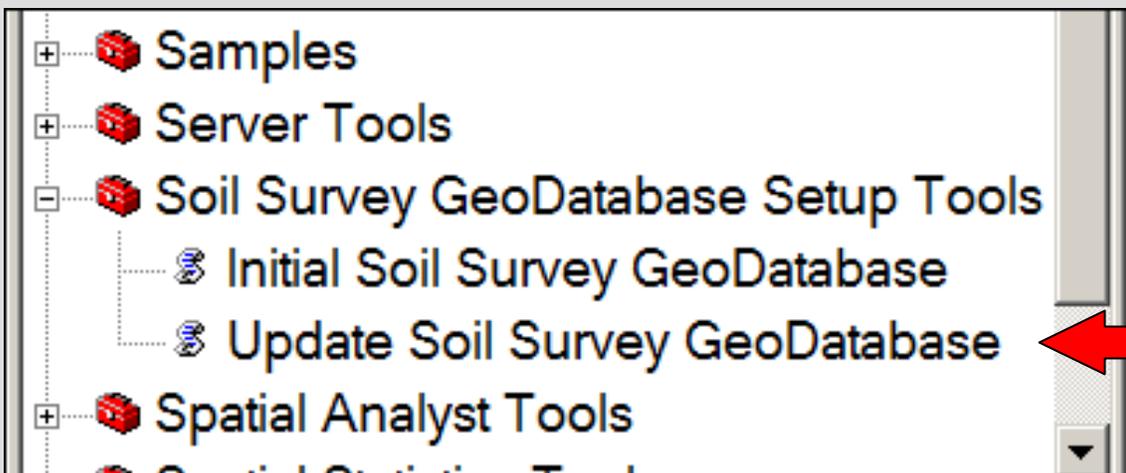
**After you Press OK a Soil Reports Screen pops up. Choose “Exit” and then choose File > Exit and the data are now ready for import into a geodatabase using the script “Update Soil Survey Geodatabase”.**



**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.**



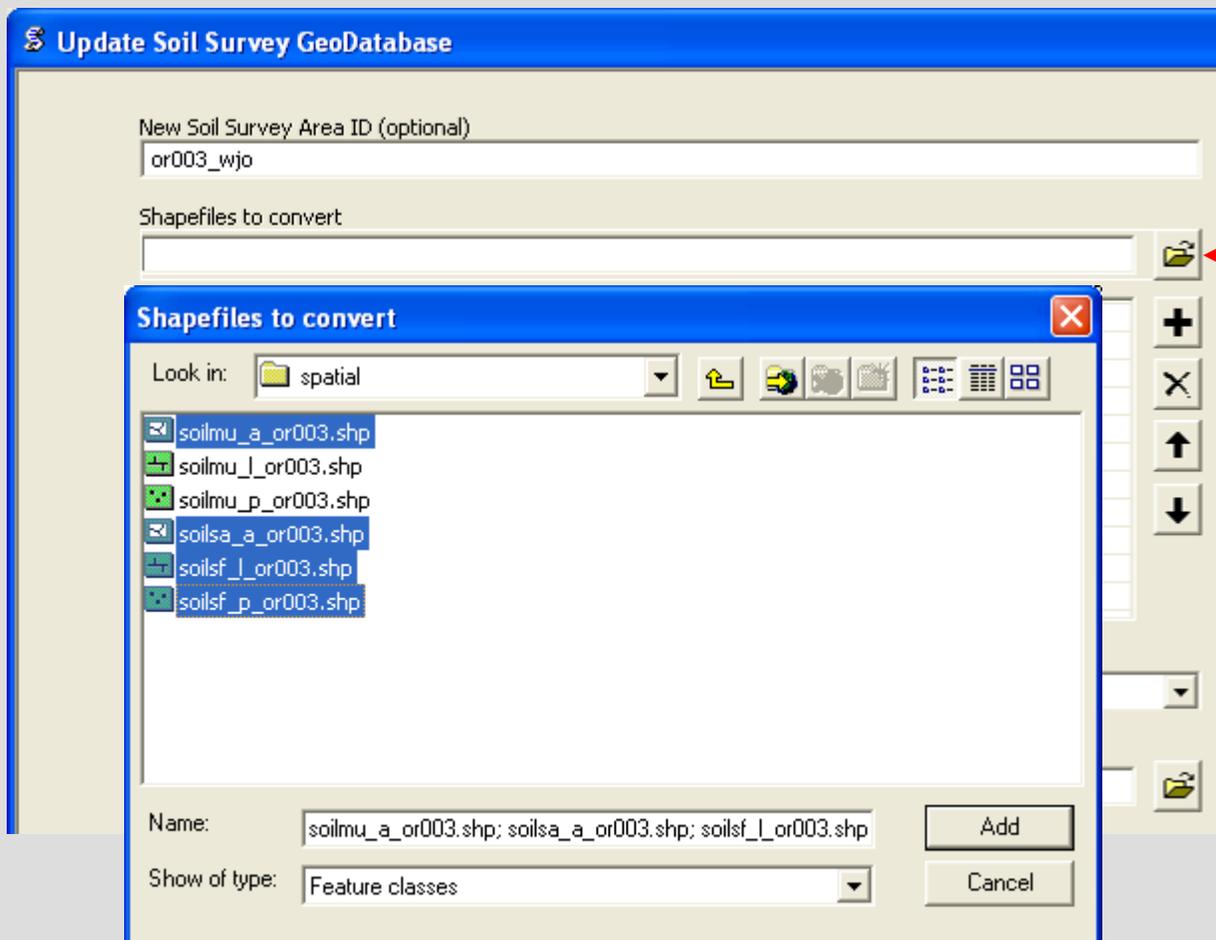
**Inputting a New Soil Survey ID will change the naming convention of your Geodatabase. This field is optional.**

Click the folder icon and navigate to the SSURGO download to point to the data to be converted.

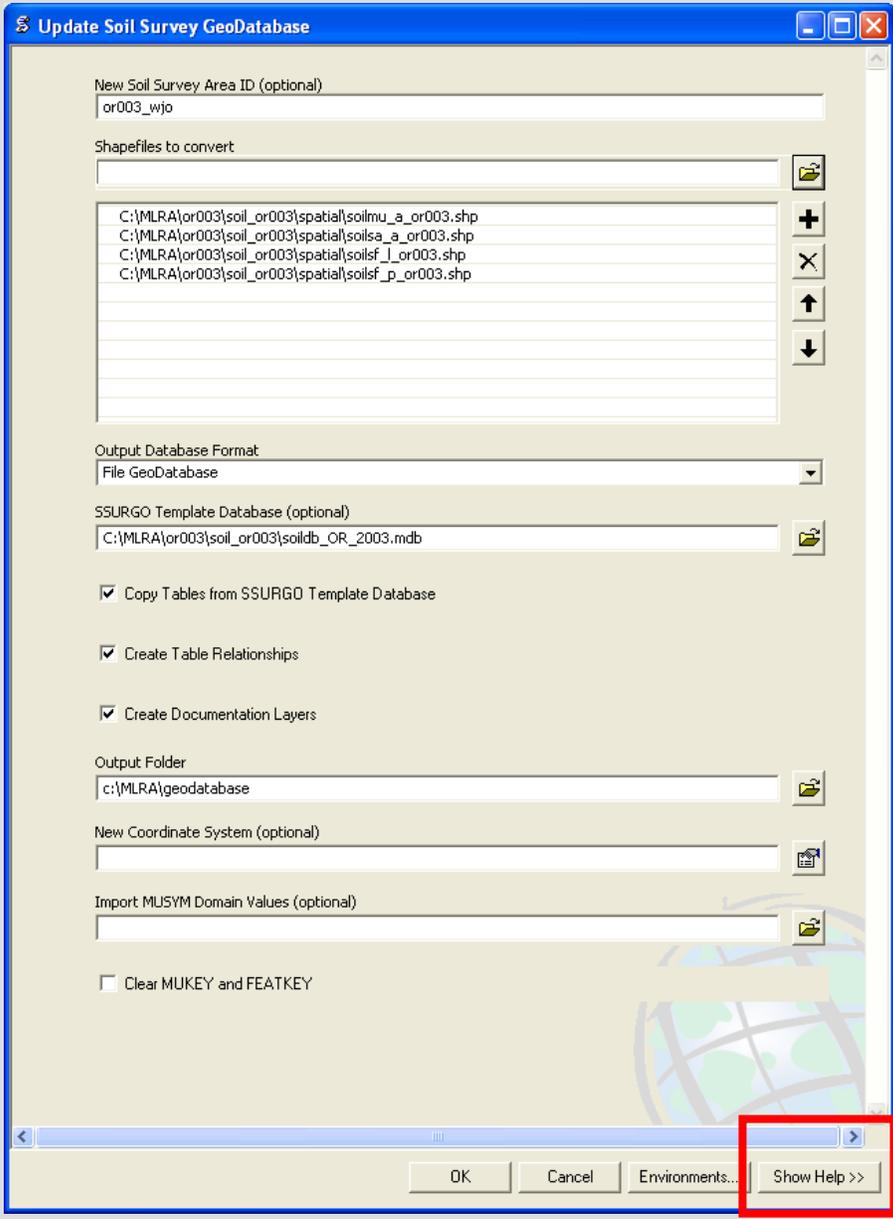
Navigate to the SSURGO download and select data to import into the new geodatabase

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.)



**Help**

### 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.

**Help**

### 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.

**Update Soil Survey GeoDatabase**

New Soil Survey Area ID (optional)  
or003\_wjo

Shapefiles to convert

- C:\MLRA\or003\soil\_or003\spatial\soilmu\_a\_or003.shp
- C:\MLRA\or003\soil\_or003\spatial\soilsa\_a\_or003.shp
- C:\MLRA\or003\soil\_or003\spatial\soilsf\_l\_or003.shp
- C:\MLRA\or003\soil\_or003\spatial\soilsf\_p\_or003.shp

Output Database Format  
File GeoDatabase

SSURGO Template Database (optional)  
C:\MLRA\or003\soil\_or003\soildb\_OR\_2003.mdb

Copy Tables from SSURGO Template Database

Create Table Relationships

Create Documentation Layers

Output Folder  
c:\MLRA\geodatabase

New Coordinate System (optional)

Import MUSYM Domain Values (optional)

Clear MUKEY and FEATKEY

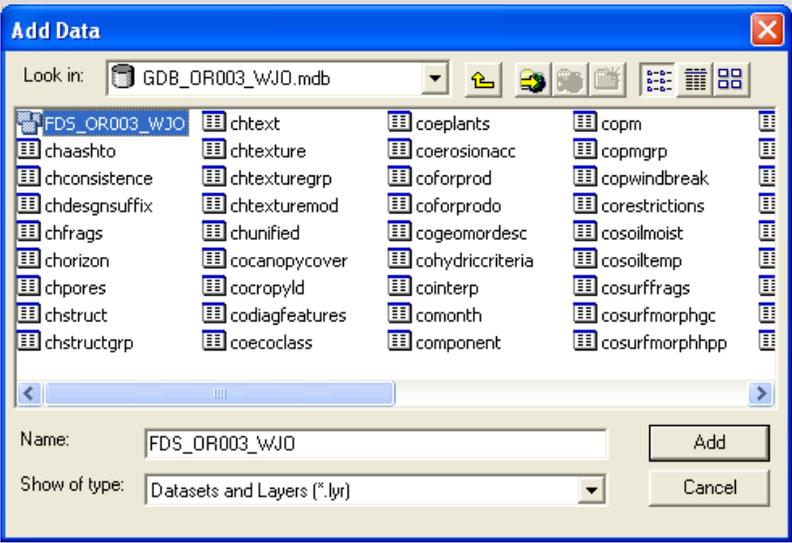
OK Cancel Environments... Show Help >>

# Step 8. Explore the results

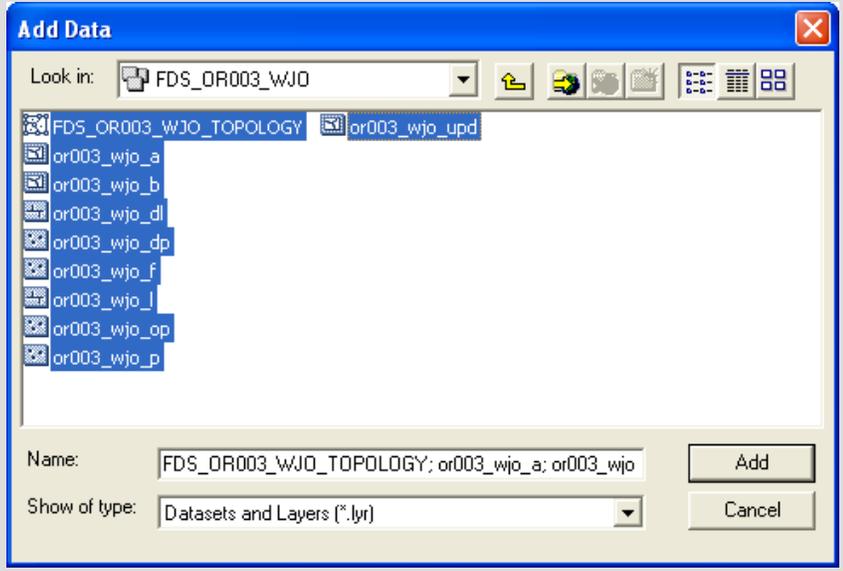
## Add the spatial data to ArcMap



**Double-click on the Feature Dataset**



**Hold shift to select all of the feature classes**

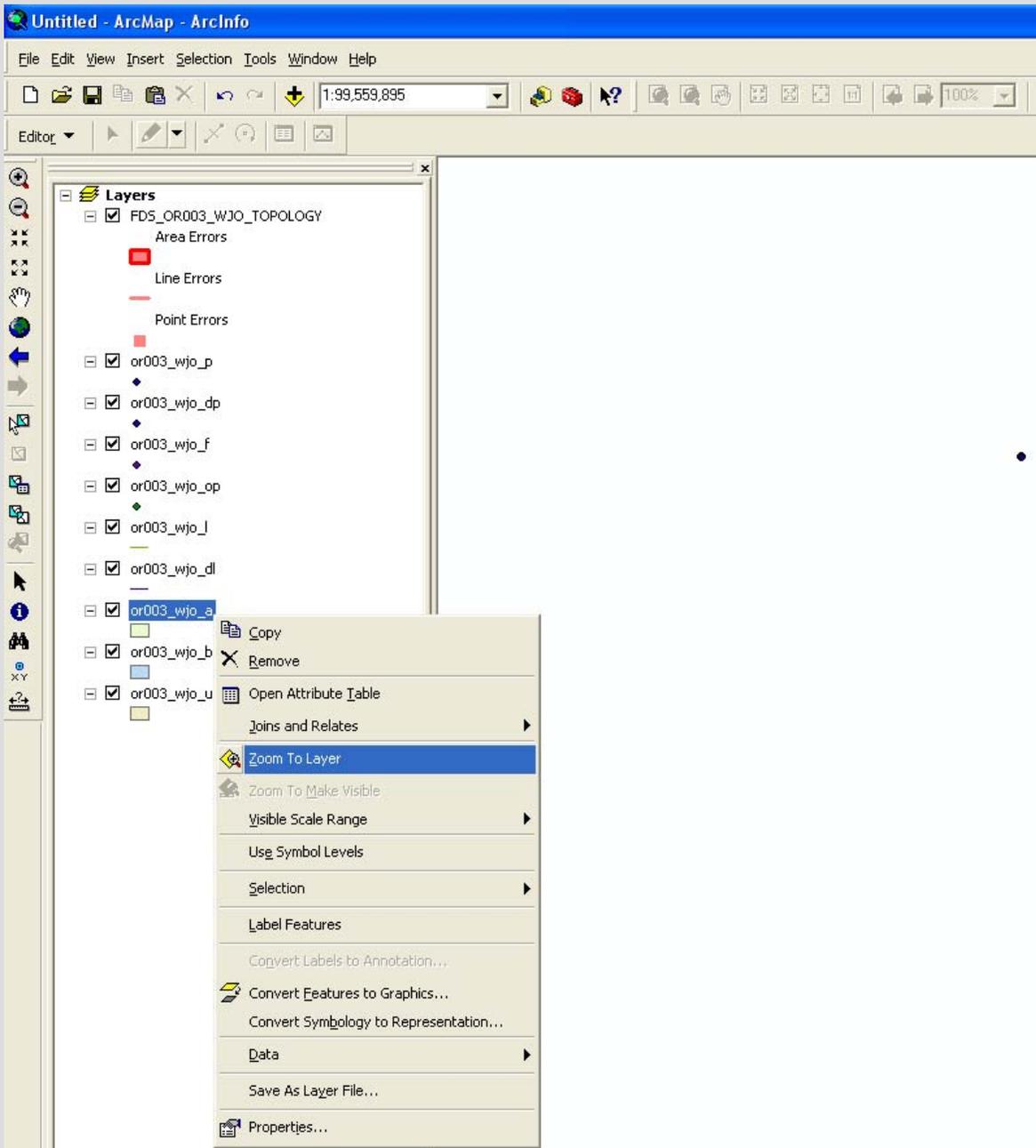


# Step 8. Explore Script Result

The selected SSURGO data has been imported and renamed

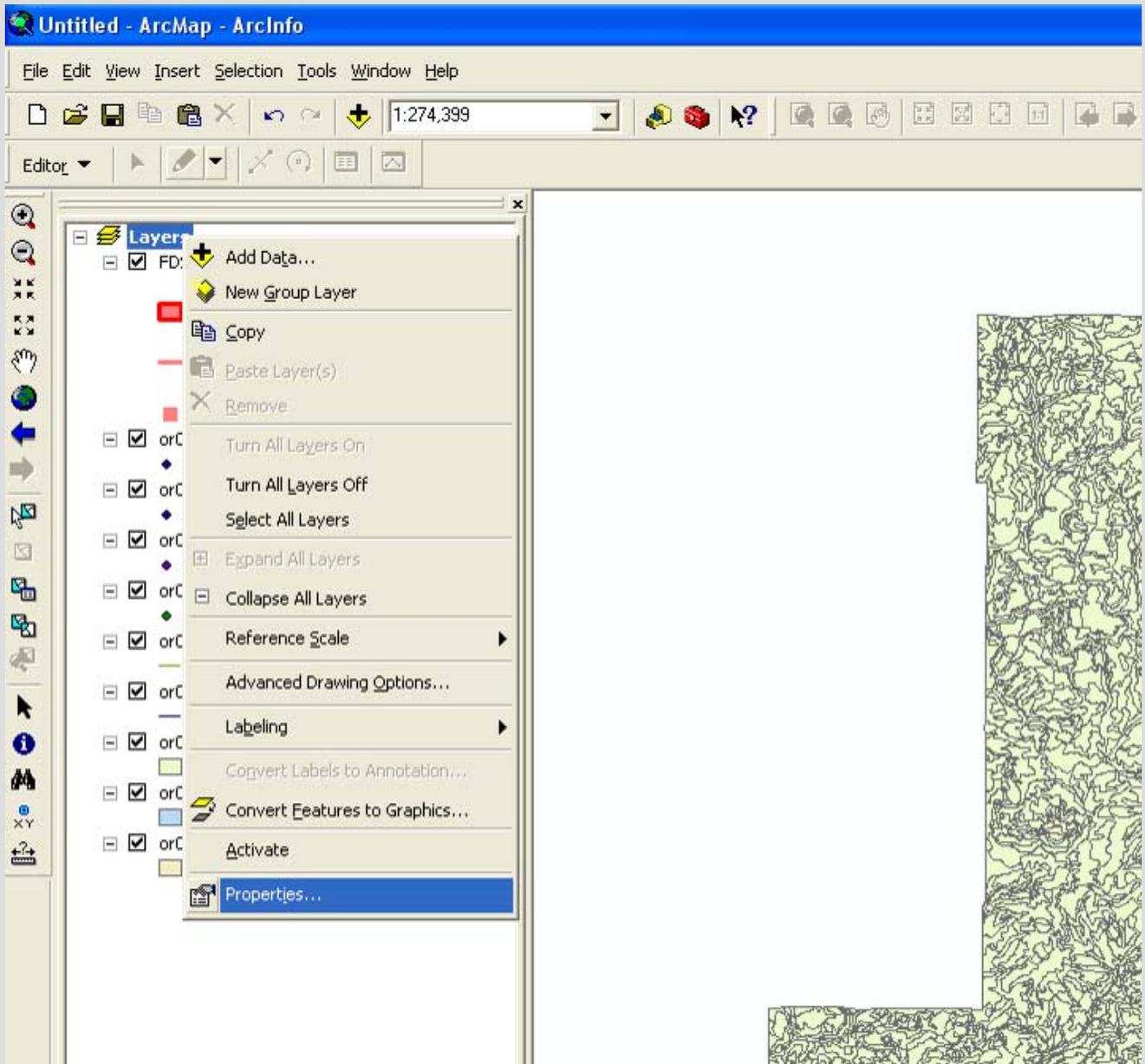
Set the “Full Extent” to the soil survey area

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



# Step 8. Explore Script Result

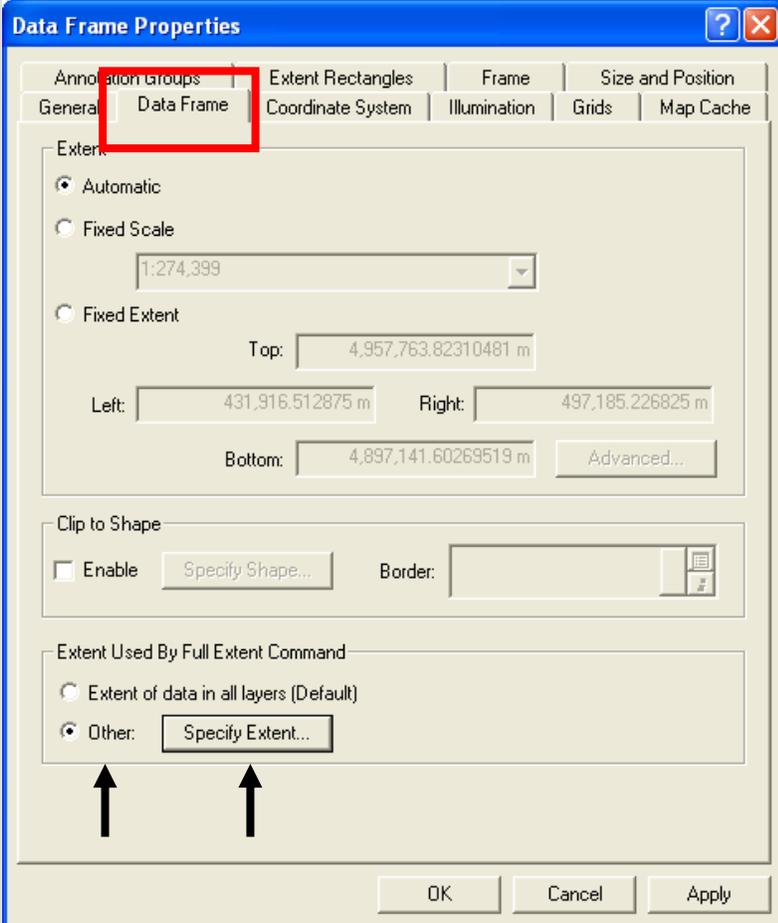
With the full extent of the soil polygons in view, Right-click on “Layers” in the Table of Contents and select Properties



# Step 8. Explore Script Result

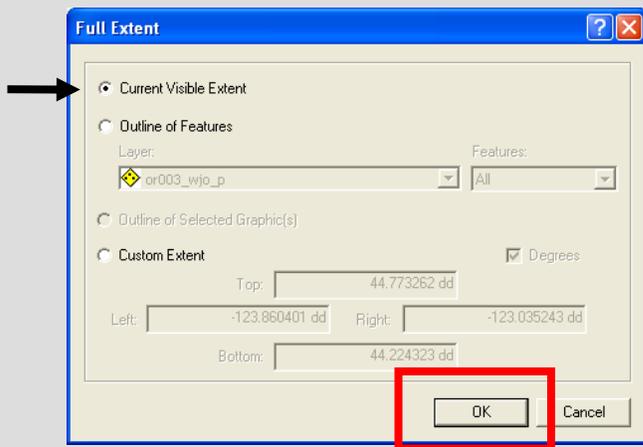
## The selected SSURGO data has been imported and renamed

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

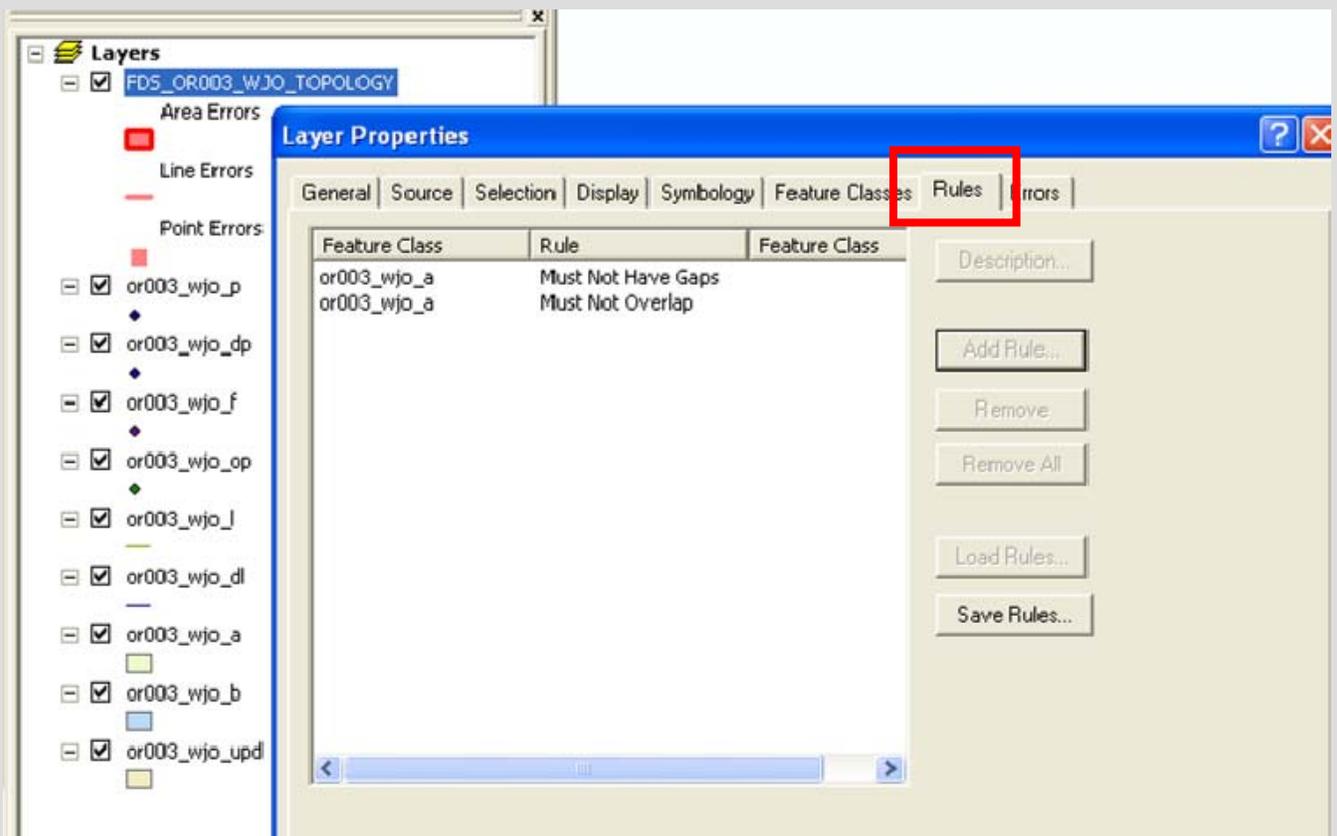
Finally, click OK to accept the Current Visible Extent default



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

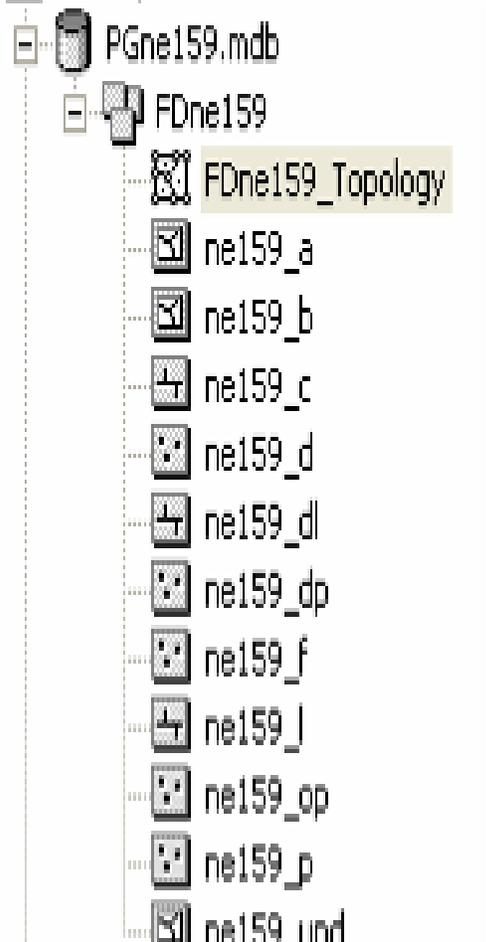
Map Unit Lines (\_c)

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



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