

OJT Training Module Cover Sheet

Title: Geodatabase Setup for Initial Soil 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:

Objectives:

**Create an Initial Soil Survey
Geodatabases 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):

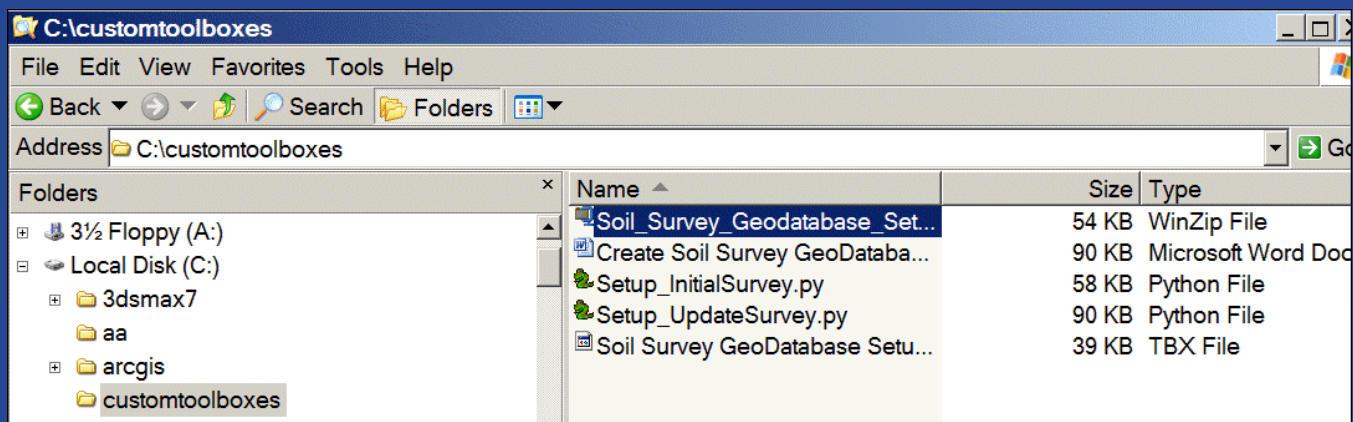
C:\customtoolboxes

- b. Download **Soil_Survey_Geodatabase_Setup.zip** from:

http://www.soils.usda.gov/education/training/descriptions.html#GIS_JA

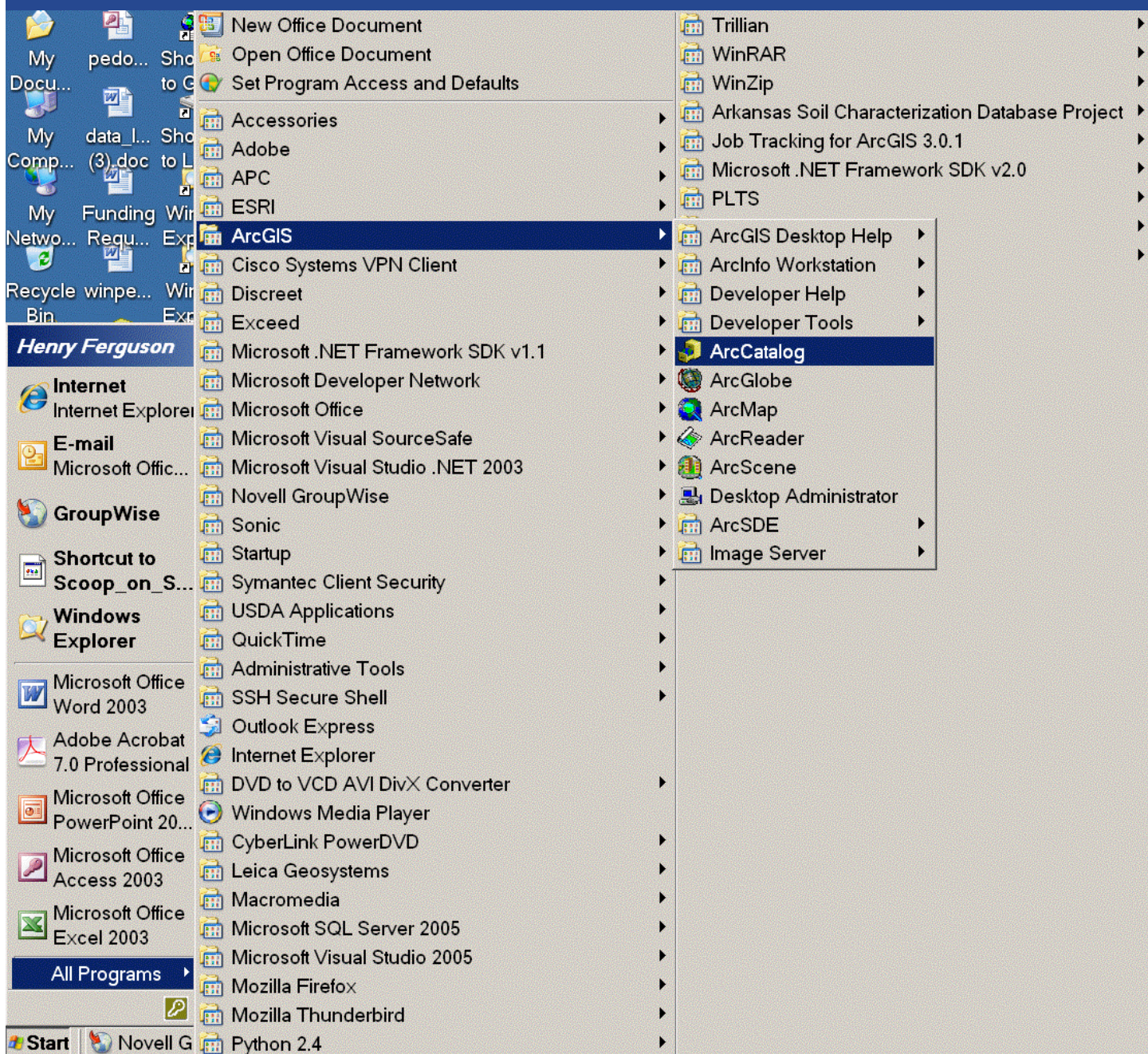
- c. Save the file to **C:\customtoolboxes** and **Unzip** the file

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



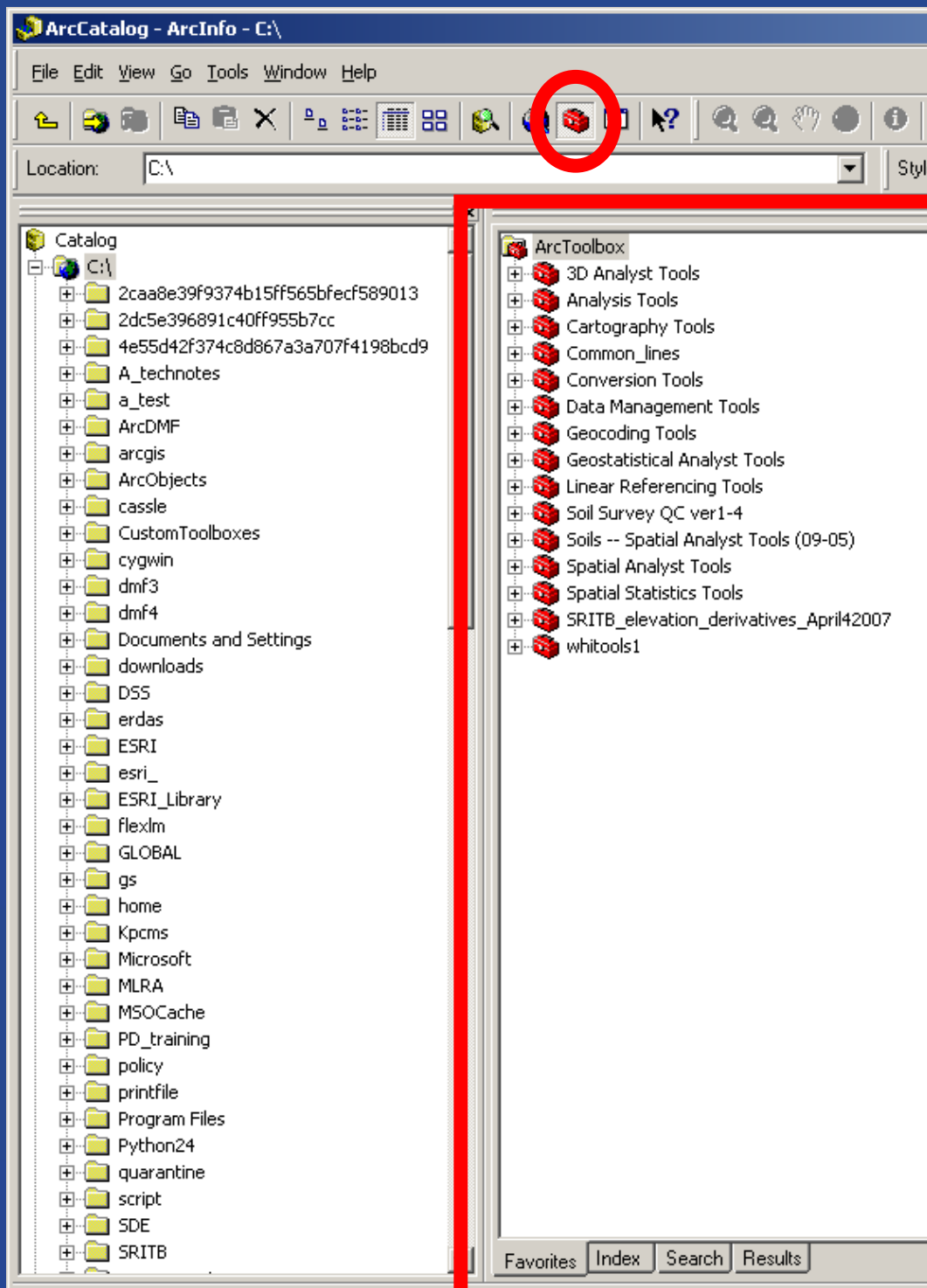
Step 2. Add the Soil Survey Geodatabase Setup Toolbox in ArcGIS

a. Open ArcCatalog

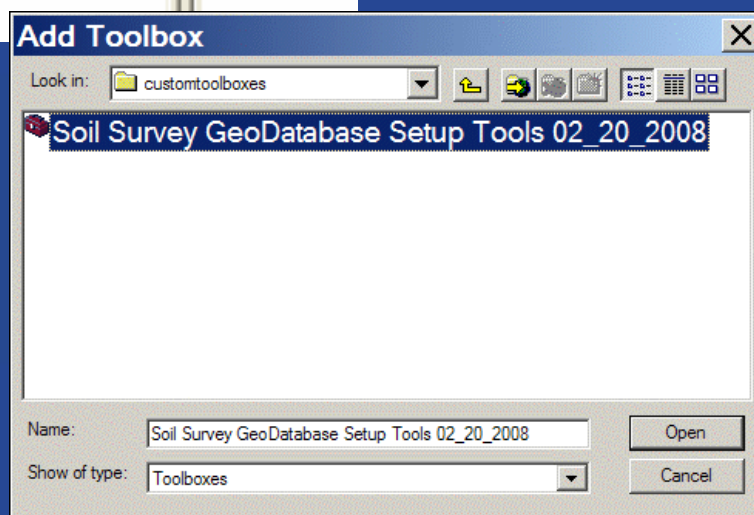
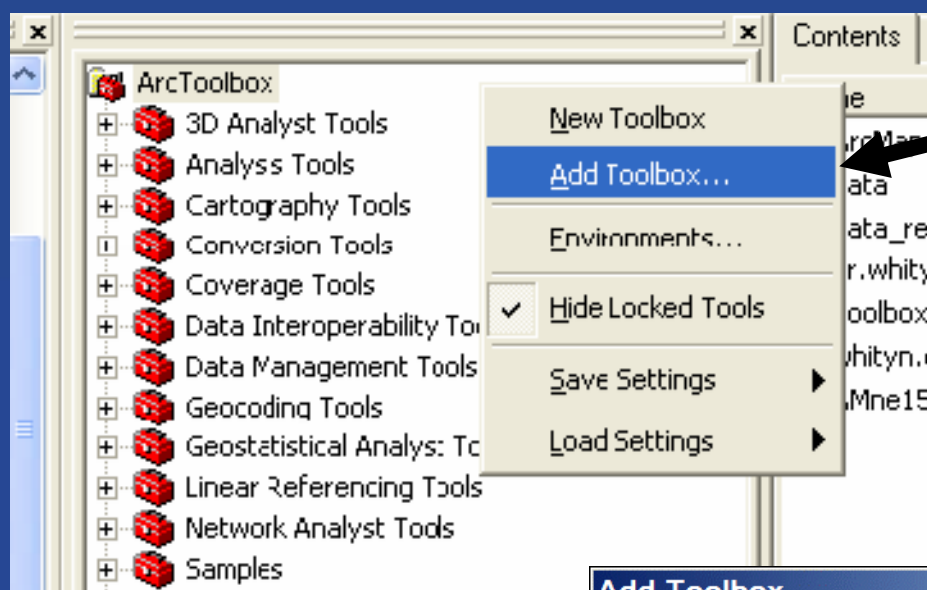


b. Open ArcToolbox

(Click on the Red Toolbox Icon)

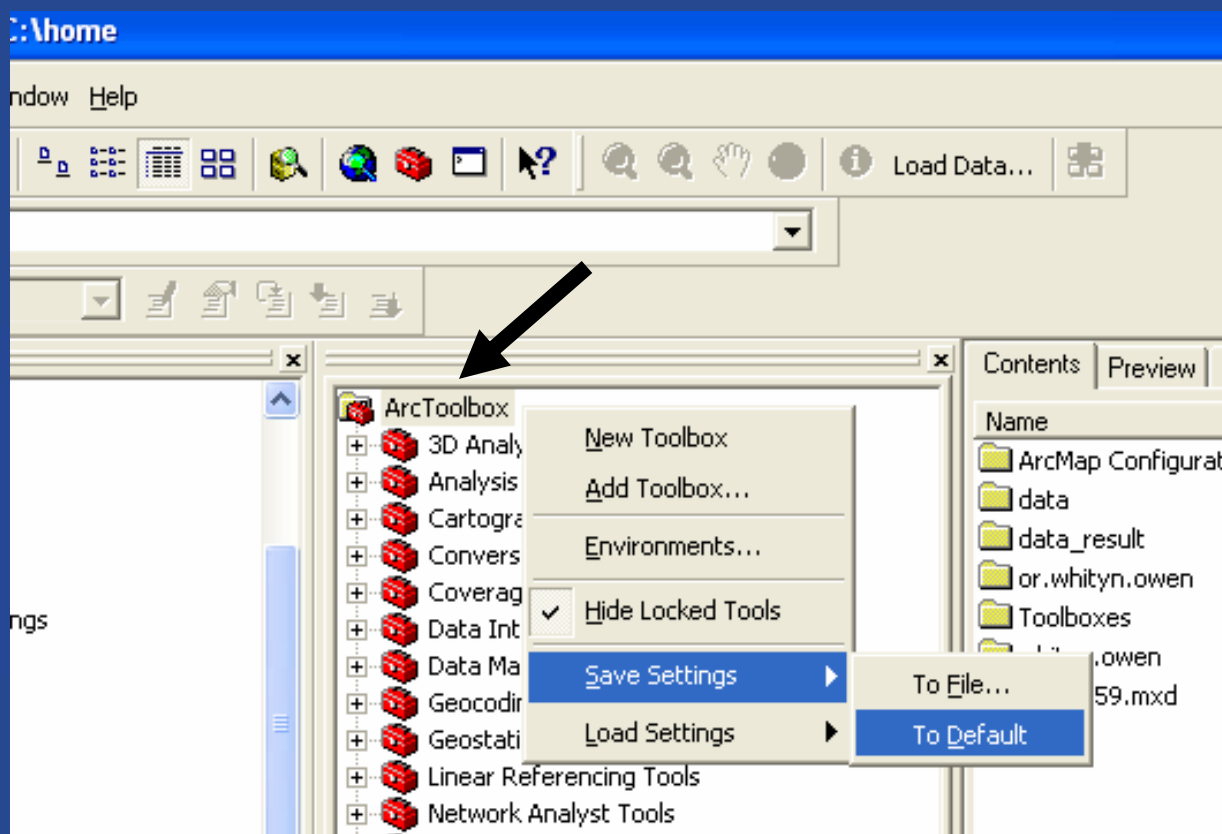


- c. Right-click on “ArcToolbox” at top of the list in ArcToolbox
- Select “Add Toolbox”
 - Navigate to C:\customtoolboxes\
Select
“Soil Survey Geodatabase Setup
Tools”
And select “Open”



Step 3. Save the Toolbox to Default Settings

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

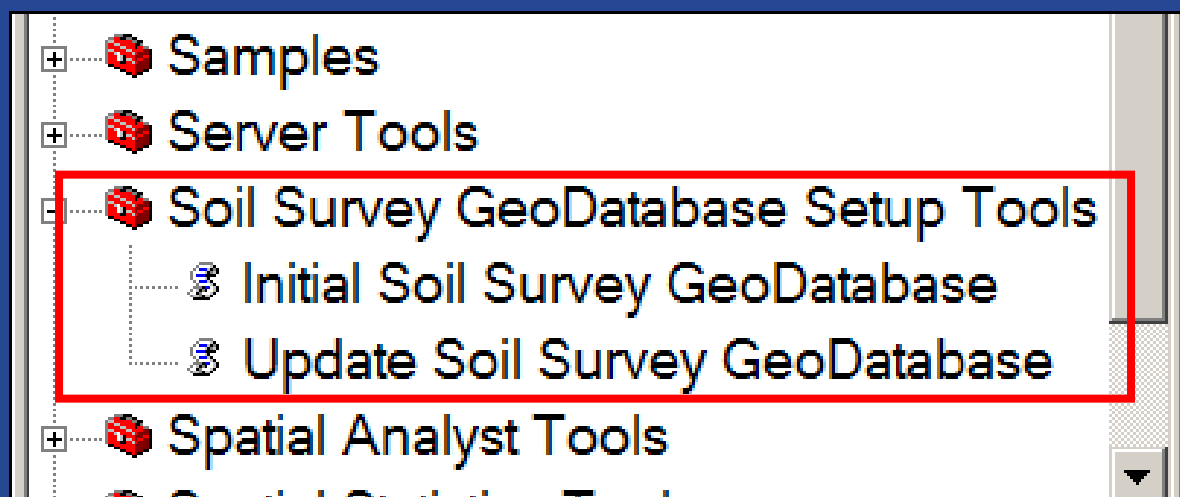


This toolbox is now part of your default setup.

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



Geodatabase setup scripts

- **Each Setup Script creates a 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 - Initial soil survey geodatabase

- For new surveys with no existing digital data
- Digitize soils as polygons or lines
- All features must close, no dangling lines
- ***Requires*** a survey boundary polygon file

Script - Update soil survey Geodatabase

- Requires existing digital soils data
- Designed for SSURGO shapefiles downloaded from the Soil Data Mart

Run script “Initial Soil Survey Geodatabase”

This script does not require existing soils data.

This script creates a new personal geodatabase or file geodatabase and feature dataset for editing either in a Polygon mode or in a Line mode.

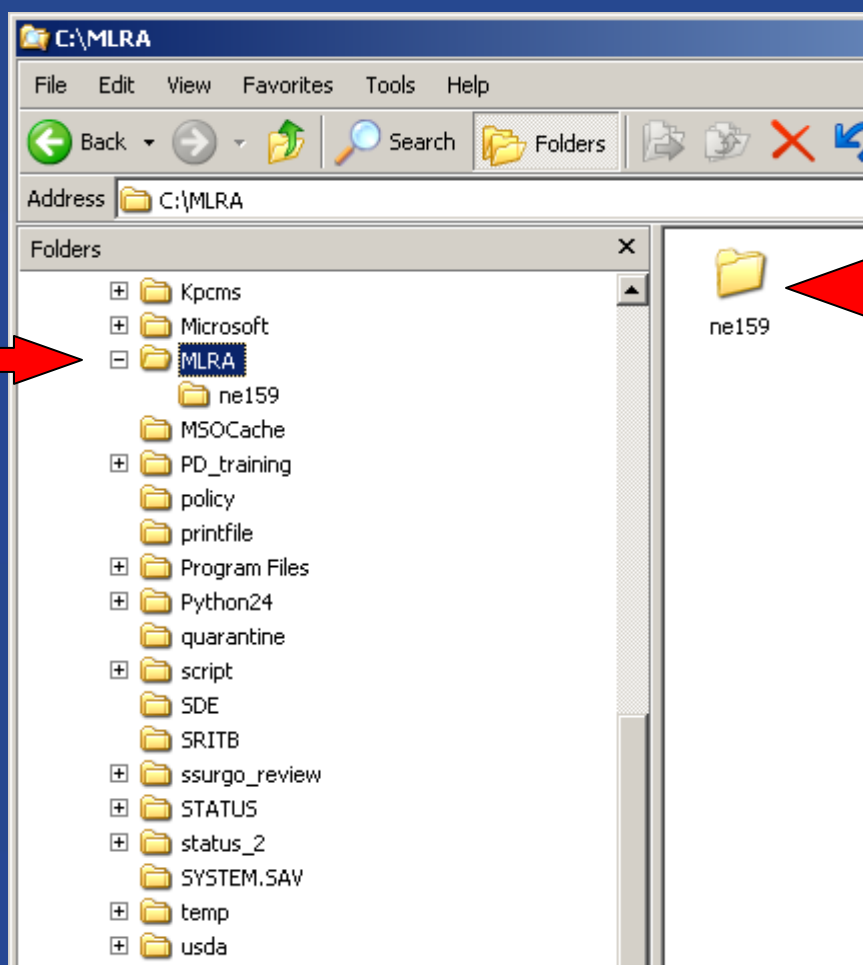
The script imports a boundary shapefile or coverage to the feature dataset.

If the Polygon Survey Type is selected, 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.

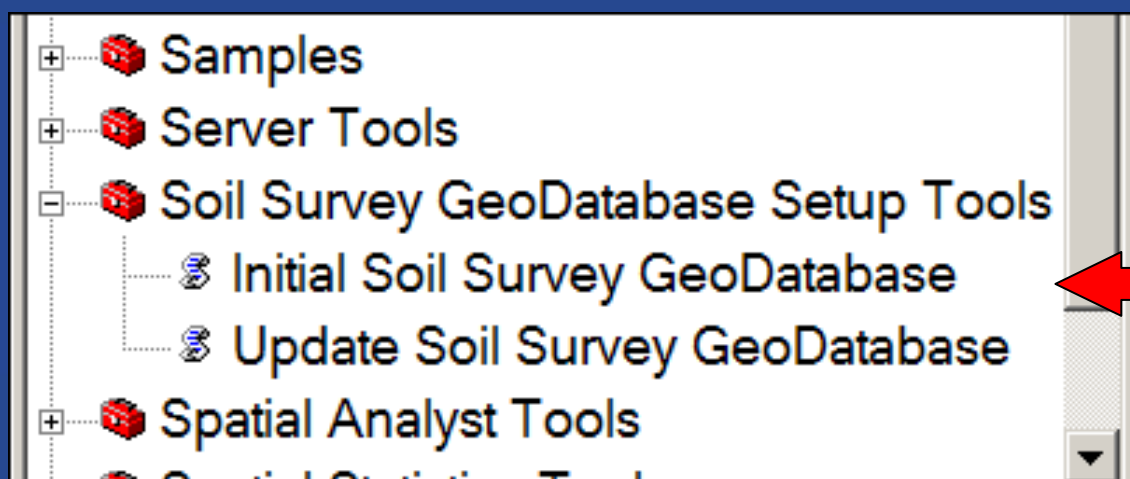
In the folder just created make a project folder using the soil survey area ID number, e.g. ne159, and a folder called geodatabase as well.



Step 6. Locate a digital boundary for your survey area (Request this boundary from your GIS specialist if necessary).

**Step 7a. Open the User Input dialog box.
Using ArcCatalog**

Double-click the Script (Initial Soil Survey Geodatabase) to open the User Input dialog box.



Inputting a New Soil Survey Area ID is required.

Choose either Polygon or Line for the Initial Soil Survey Type.

Choose the Boundary Featureclass by clicking the folder icon and navigating to the boundary layer (in this example, the boundary is a downloaded SSURGO boundary).

Choose Personal Geodatabase or File Geodatabase
Browse to the table which includes the Mapunit Symbols if importing a domain (domain = dropdown pick list)

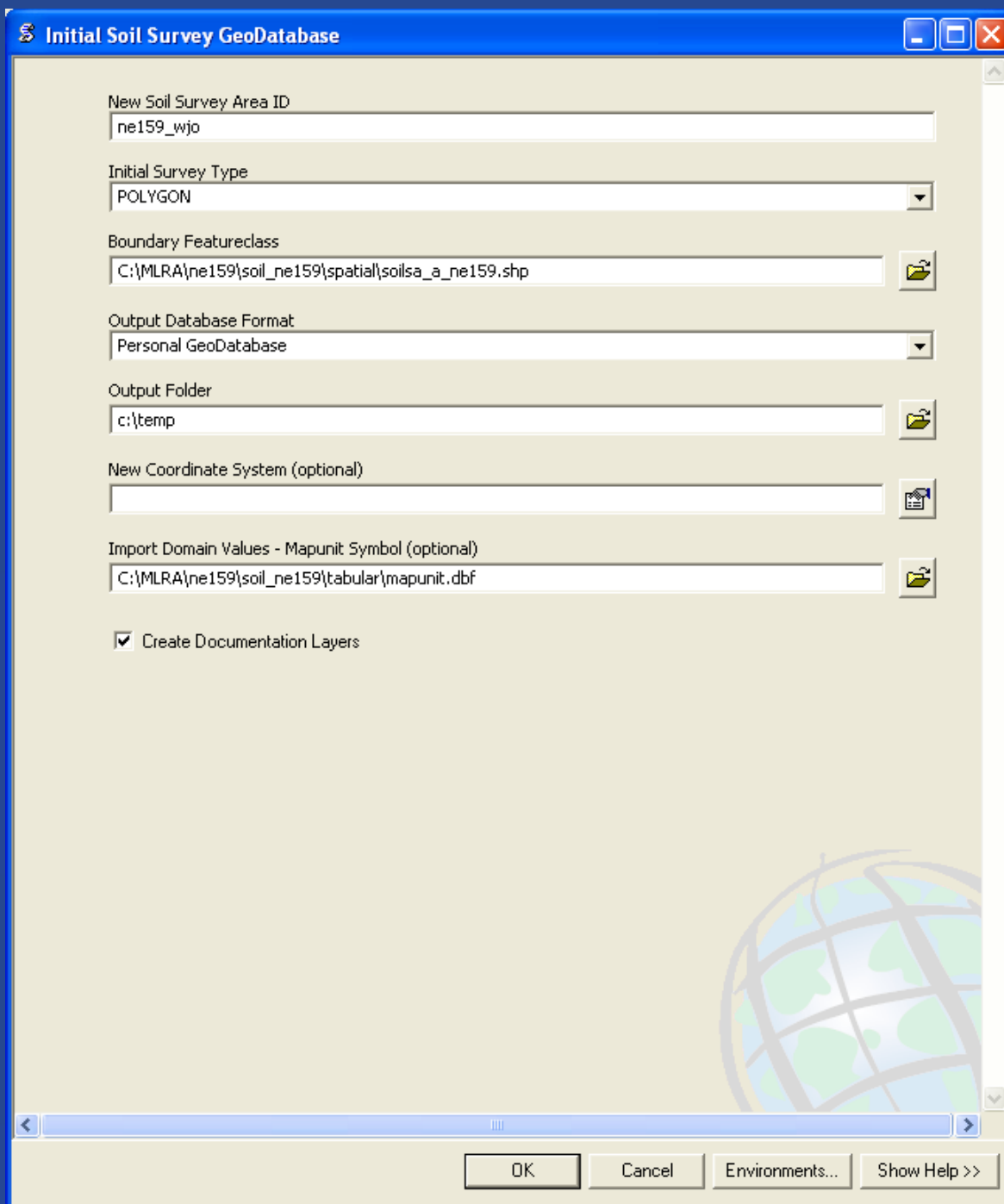
Check the Create Documentation Layers box

The screenshot shows the 'Initial Soil Survey GeoDatabase' dialog box with the following fields and options:

- New Soil Survey Area ID: ne159_wjo
- Initial Survey Type: POLYGON
- Boundary Featureclass: C:\MLRA\ne159\soil_ne159\spatial\soilsa_a_ne159.shp
- Output Database Format: Personal GeoDatabase
- Output Folder: c:\temp
- New Coordinate System (optional):
- Import Domain Values - Mapunit Symbol (optional): C:\MLRA\ne159\soil_ne159\tabular\mapunit.dbf
- Create Documentation Layers

Buttons at the bottom: OK, Cancel, Environments..., Show Help >>

Double-check ALL inputs.
Click OK to run the script.



Initial Soil Survey GeoDatabase

New Soil Survey Area ID
ne159_wjo

Initial Survey Type
POLYGON

Boundary Featureclass
C:\MLRA\ne159\soil_ne159\spatial\soilsa_a_ne159.shp

Output Database Format
Personal GeoDatabase

Output Folder
c:\temp

New Coordinate System (optional)

Import Domain Values - Mapunit Symbol (optional)
C:\MLRA\ne159\soil_ne159\tabular\mapunit.dbf

Create Documentation Layers

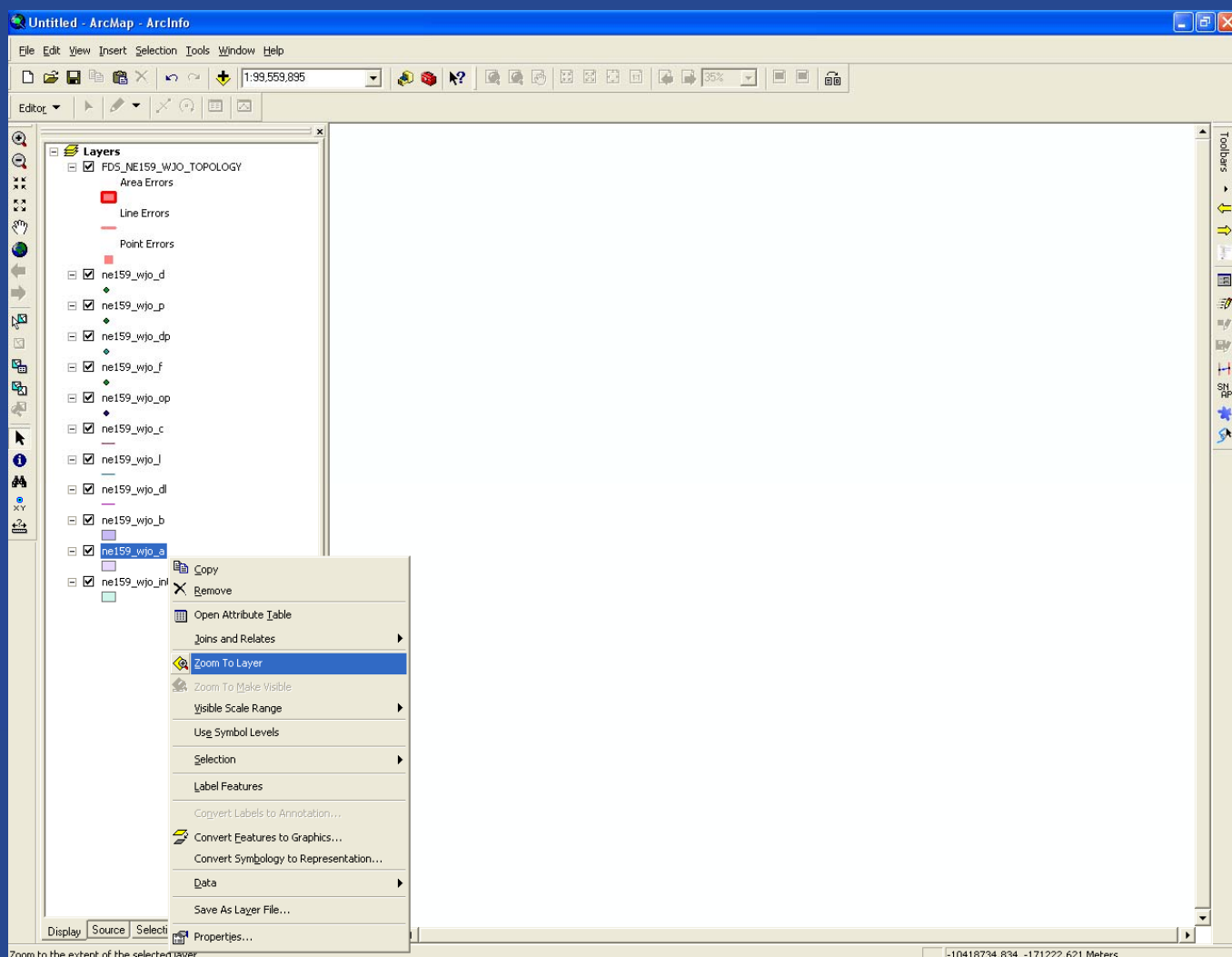
OK Cancel Environments... Show Help >>

Step 8. Explore Script Result

The selected SSURGO data has been imported and renamed

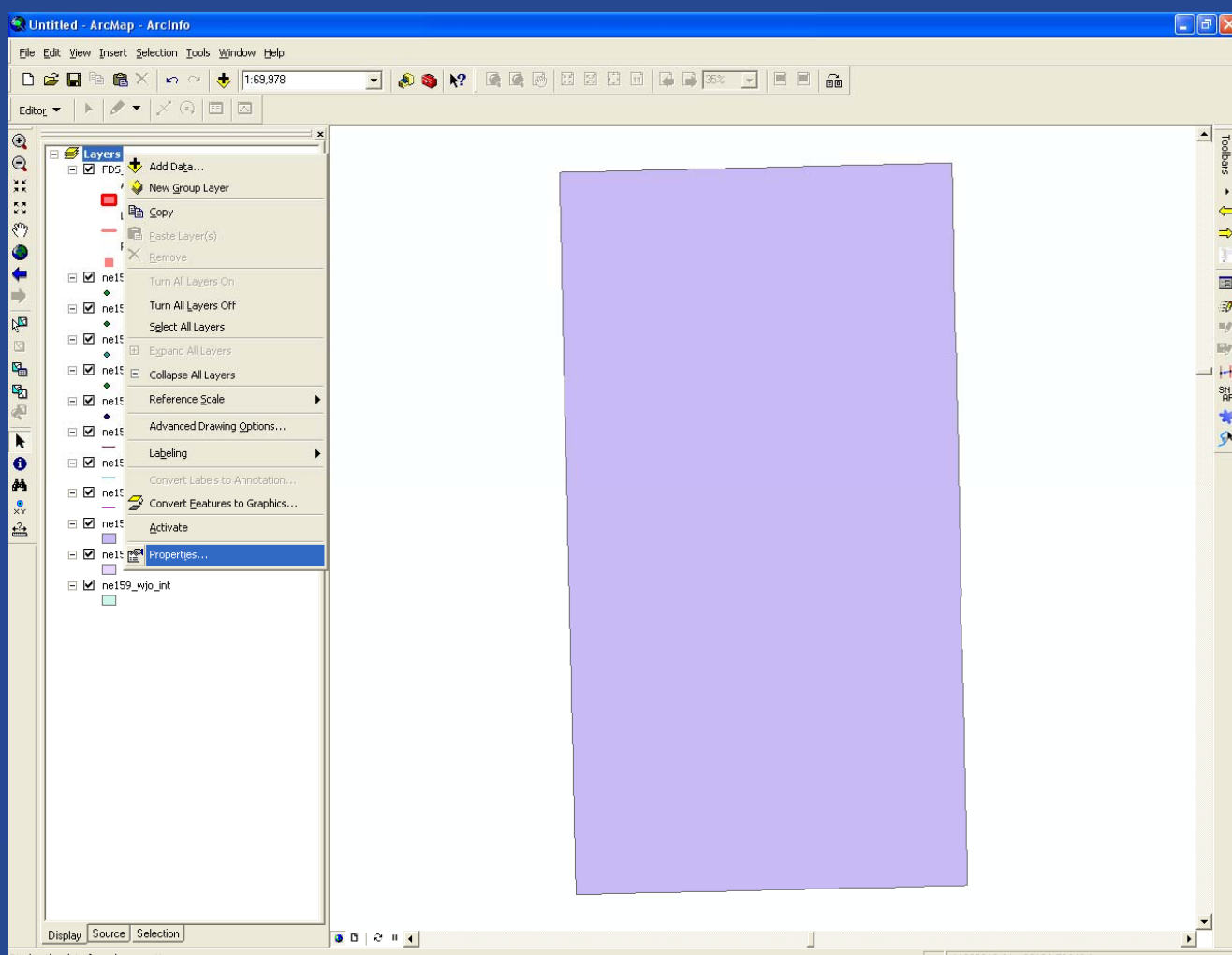
Set the “Full Extent” to the survey boundary

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



Step 8. Explore Script Result

With the full extent of the soil boundary in view, Right-click on “Layers” in the Table of Contents and select Properties (Data Frame Properties)

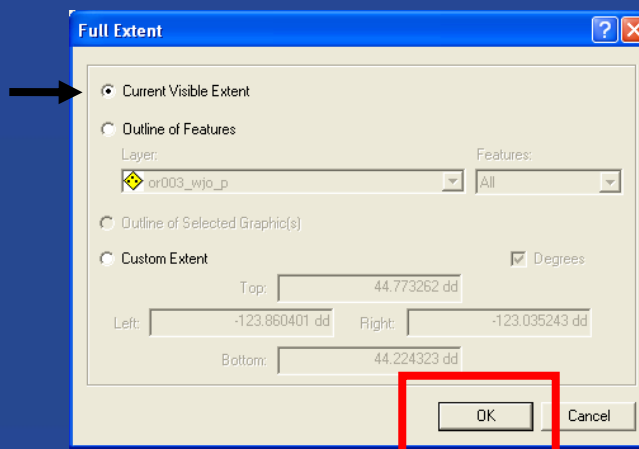
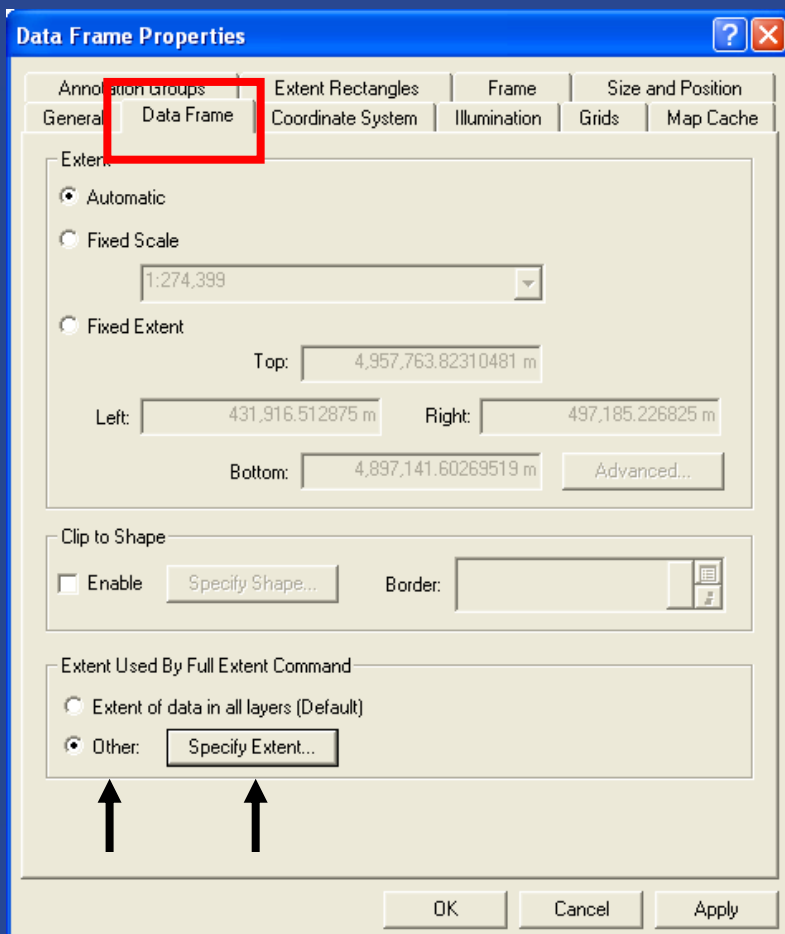


Step 8. Explore Script Result

In the Data Frame Properties window, select the “Data Frame” tab

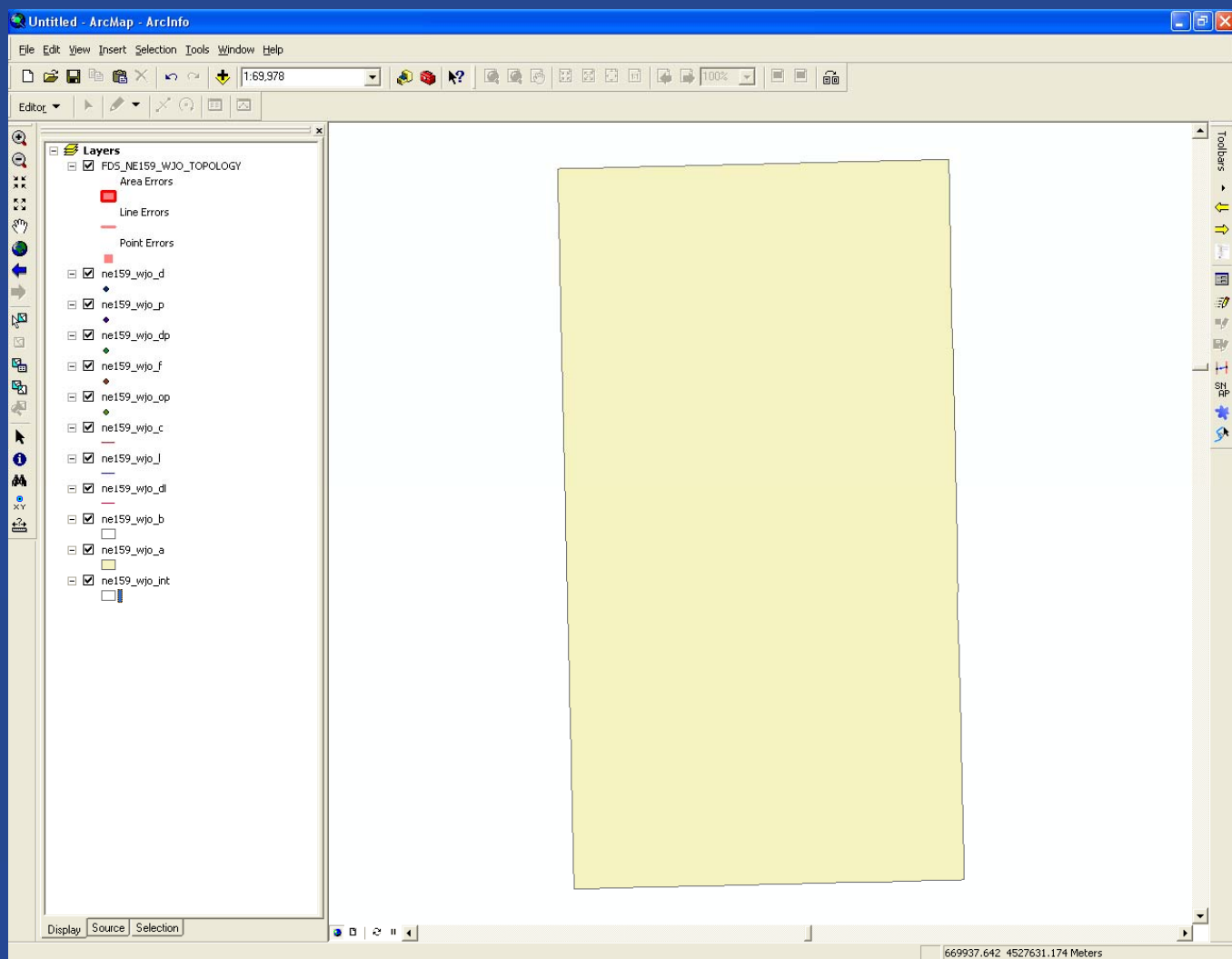
Next, click “Other” under Extent Used by Full Extent Command Then click the “Specify Extent” button

Finally, click OK to accept the Current Visible Extent default

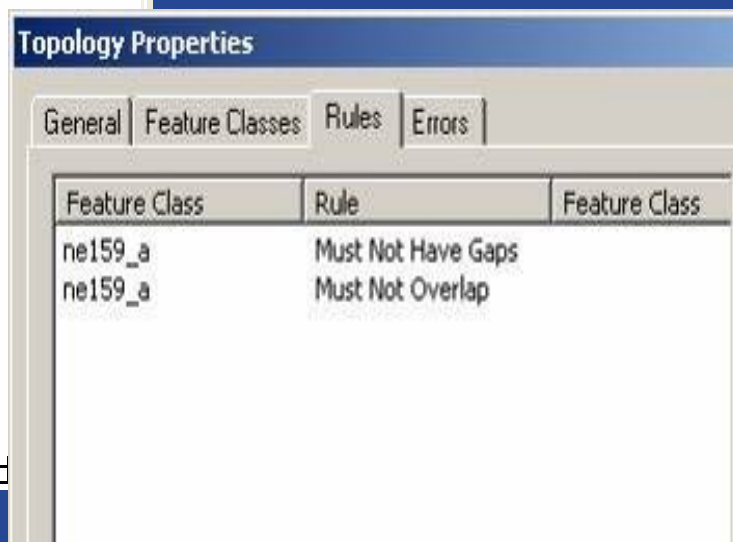
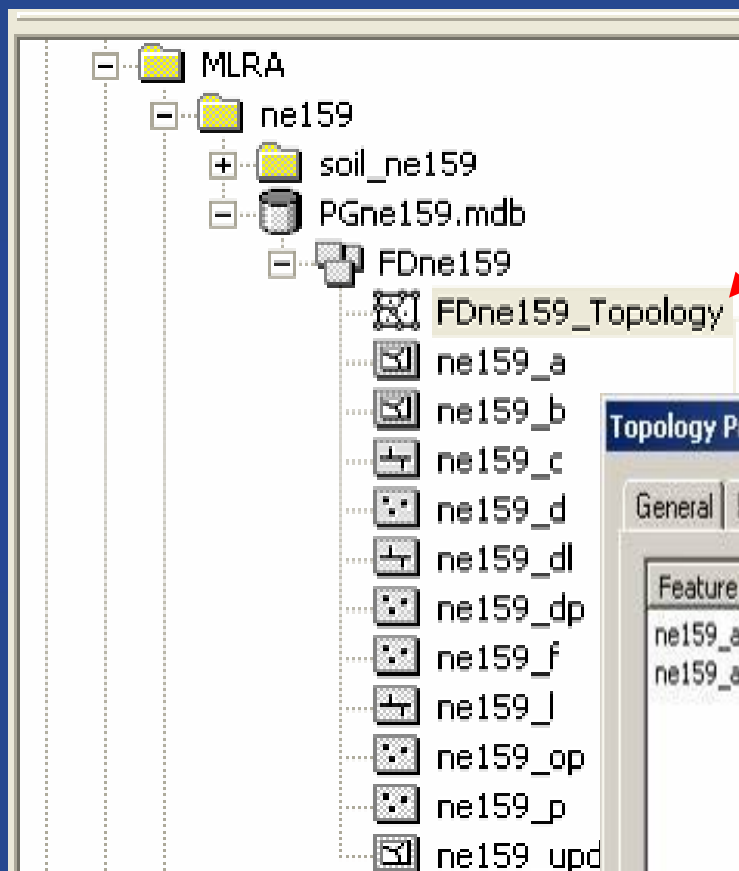


Step 8. Explore Script “Initial Soil Survey Geodatabase” Result

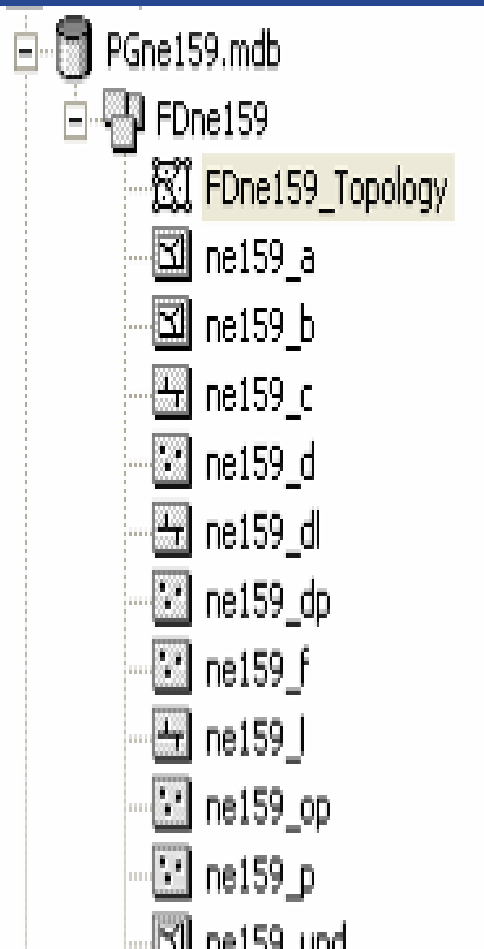
Note that the boundary polygon has been copied into the (_a) soils layer (shown). You may now digitize new soil polygons by cutting them out of this layer.



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



“Empty” feature classes are created for all feature classes except the boundary polygon feature class.



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