

# A Method for Creating an Ecological Site Extent Map

Steve Campbell  
Soil Scientist  
USDA – Natural Resources Conservation Service  
West National Technology Support Center  
Portland, Oregon





# First Steps:

- Determine which soil survey areas the ecological site occurs in.
- Obtain the necessary soil survey tabular and spatial data for those soil survey areas to create the ecological site extent map.

There is a National Soil Information System (NASIS) report to determine soil survey areas that contain an ecological site or group of sites:

- Report is owned by the MLRA01\_Office NASIS Site
- Report Name:
  - W - UTIL - Ecological Site Extent by Soil Survey Area NAT

Right click on the NASIS report name and select *Run Against National Database*.

The screenshot shows a software interface with a 'Reports' window. The window has two filter buttons: 'View Ready to Use Only' (checked) and 'View Checked Out Only' (unchecked). Below the filters is a list of reports, each with a thumbs-up icon. The report 'W - UTIL - Ecological Site Extent by Soil Survey Area NAT' is highlighted. A red arrow points to this report. A context menu is open over the report, listing various actions with keyboard shortcuts. The 'Run Against National Database' option is highlighted with a blue background, and a red arrow points to it.

Action	Keyboard Shortcut
Open	Ctrl+Shift+O
Check Out	Ctrl+Shift+K
Mark for Deletion	Ctrl+Shift+M
Remove Deletion Mark	Ctrl+Shift+M
Discard Changes	
Check In	Ctrl+Shift+J
View Check Out Status	Ctrl+Shift+G
Run Against Local Database	Ctrl+Shift+L
Run Against National Database	Ctrl+Shift+N

In this example, we are interested in ecological site ID **R067XY150WY**.

1. Enter the *Ecological Site ID*
2. Enter a **y** (yes) or **n** (no) depending on whether you want to include soil survey areas where the ecological site is linked to minor components.
3. Select the Geographic Applicability options.
4. Click the Run button.

Selections for Running Report W - UTIL - Ecological Site Extent by Soil Survey Are...

Ecological Site ID IMATCHES:  

Include minor components assigned to the ecological site? (Enter y or n):  

Geographic Applicability (0 or more): 

- current for part of area
- current wherever mapped
- not current

The report tells us that ecological site ID **R067XY150WY** occurs in three Wyoming soil survey areas: **WY031**, **WY615**, **WY715**.

W - UTIL - Ecological Site Extent by Soil Survey Area NAT.txt - Notepad

File Edit Format View Help

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NATURAL RESOURCES CONSERVATION SERVICE

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Soil Survey Areas That Contain Ecological Site: R067XY150WY  
Includes Minor Components?: yes

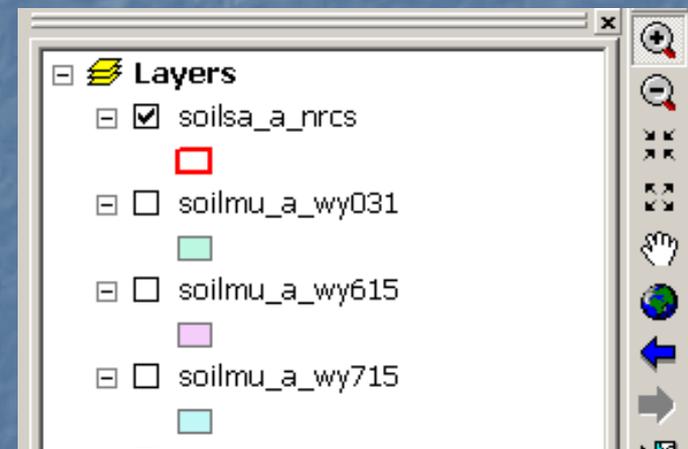
Ecological Site ID	Ecological Site Name	Area Symbol	Area Name
R067XY150WY	SANDY (12-17SP)	WY031 WY615 WY715	Platte County, Wyoming Goshen County, Wyoming, Southern Part Goshen County, Wyoming, Northern Part



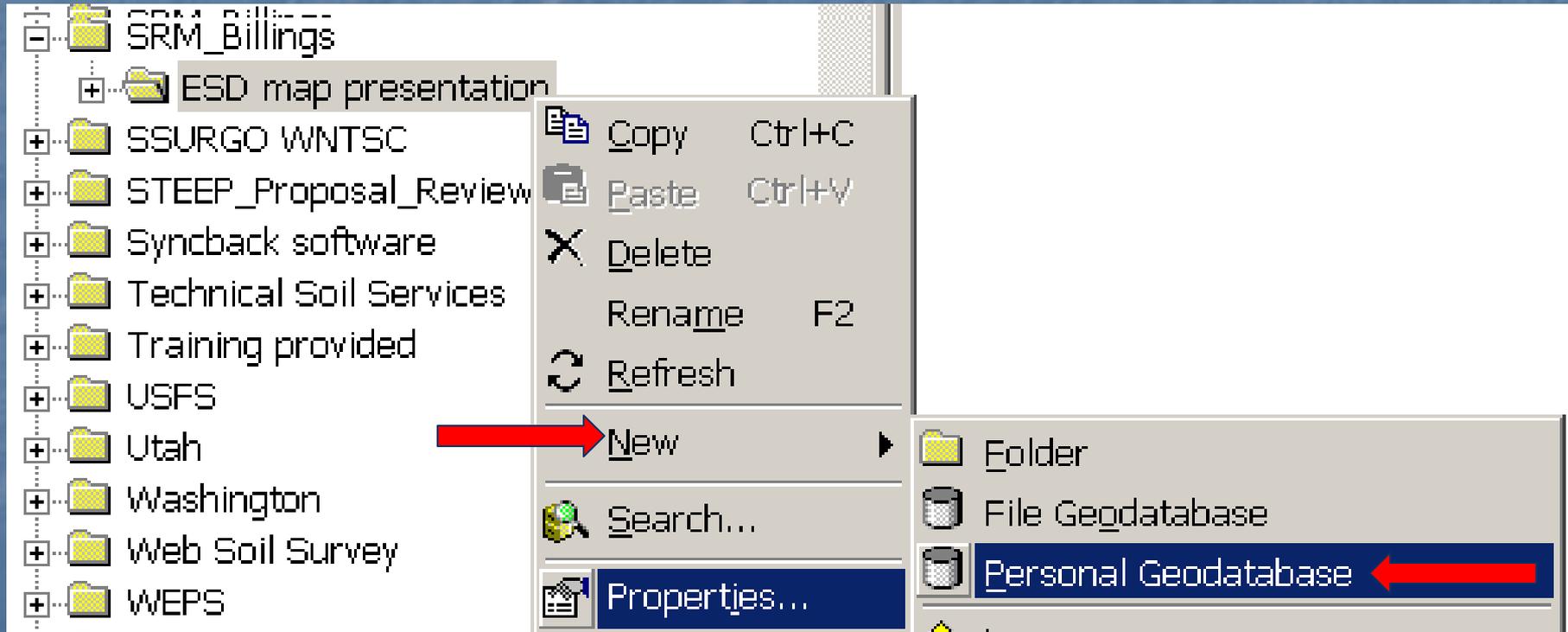
We need to obtain the spatial data (mapunit polygons) for soil survey areas **WY031**, **WY615**, **WY715** . Here are some potential sources:

- State-wide or multi-state soil survey geodatabase from NRCS State Office Soils or GIS staffs, or Regional Soil Survey Offices (MO's)
- Soil Data Mart web site  
<http://soildatamart.nrcs.usda.gov/>
- Geospatial Data Gateway web site  
<http://datagateway.nrcs.usda.gov/>

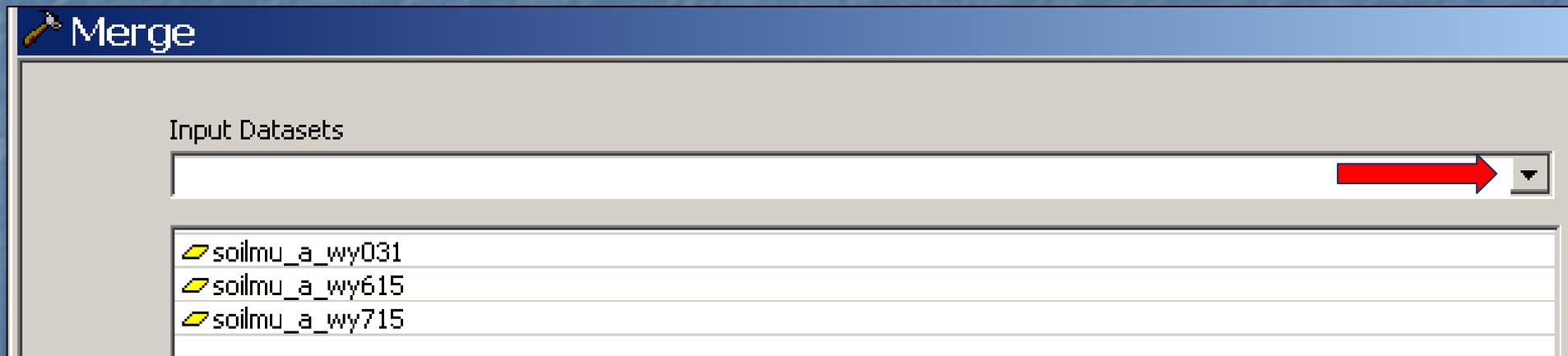
- In this example we'll assume that the three soil survey areas are downloaded separately from the Soil Data Mart.
- The survey area polygons have been added to the table of contents in an ArcGIS map document. We need to merge them into a single layer.
- We'll create a personal geodatabase in ArcCatalog to store the merged spatial data.

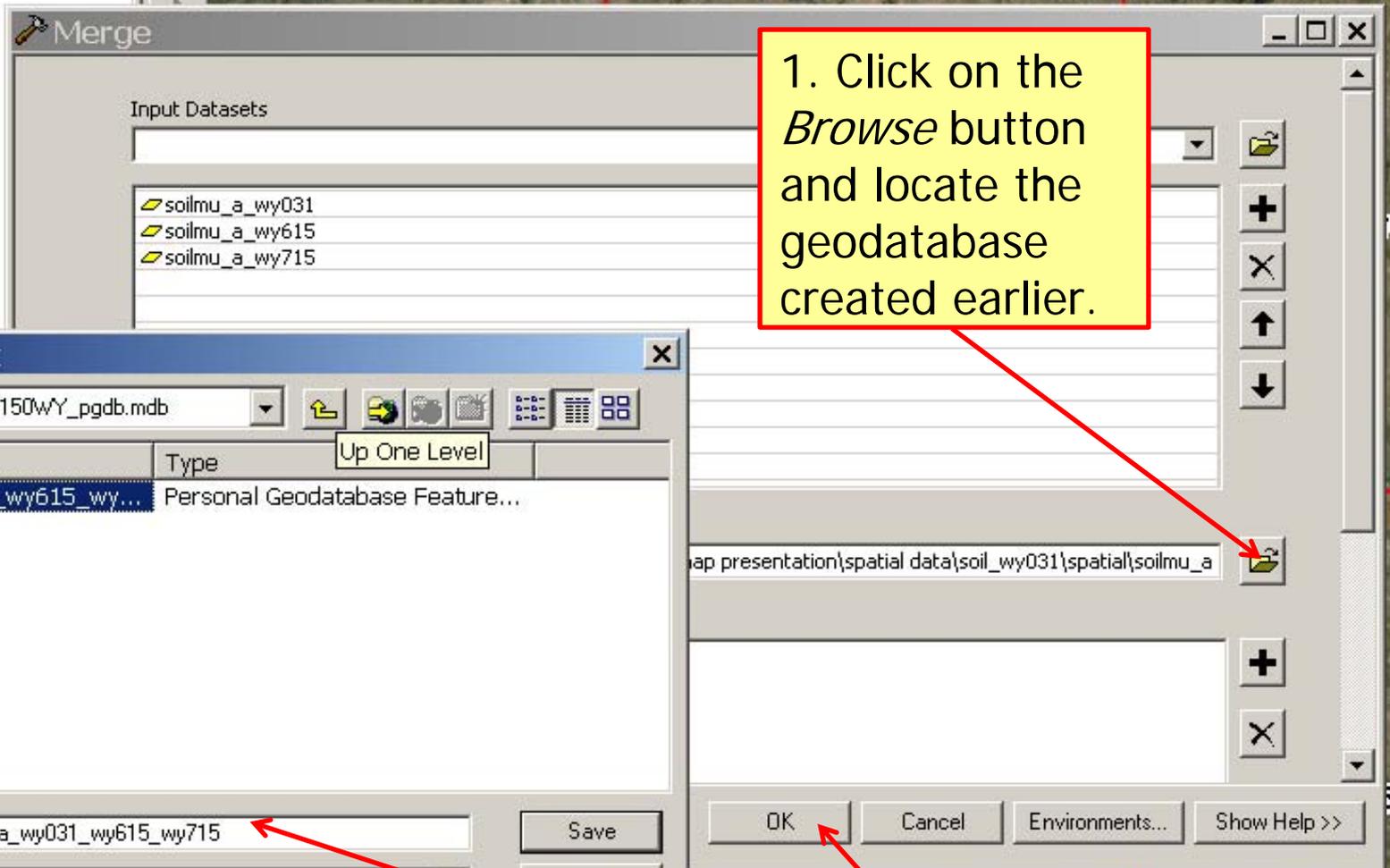


Right click on your folder of choice in ArcCatalog. Select *New* then *Personal Geodatabase*. Assign a name to the new geodatabase.



- Return to ArcMap
- Open Arc Toolbox  and use the search function for the term *Merge*. Double click the *Merge* tool under the *Data Management Tools* toolbox.
- Add the three Wyoming soil survey areas using the *Input Datasets* drop down list.

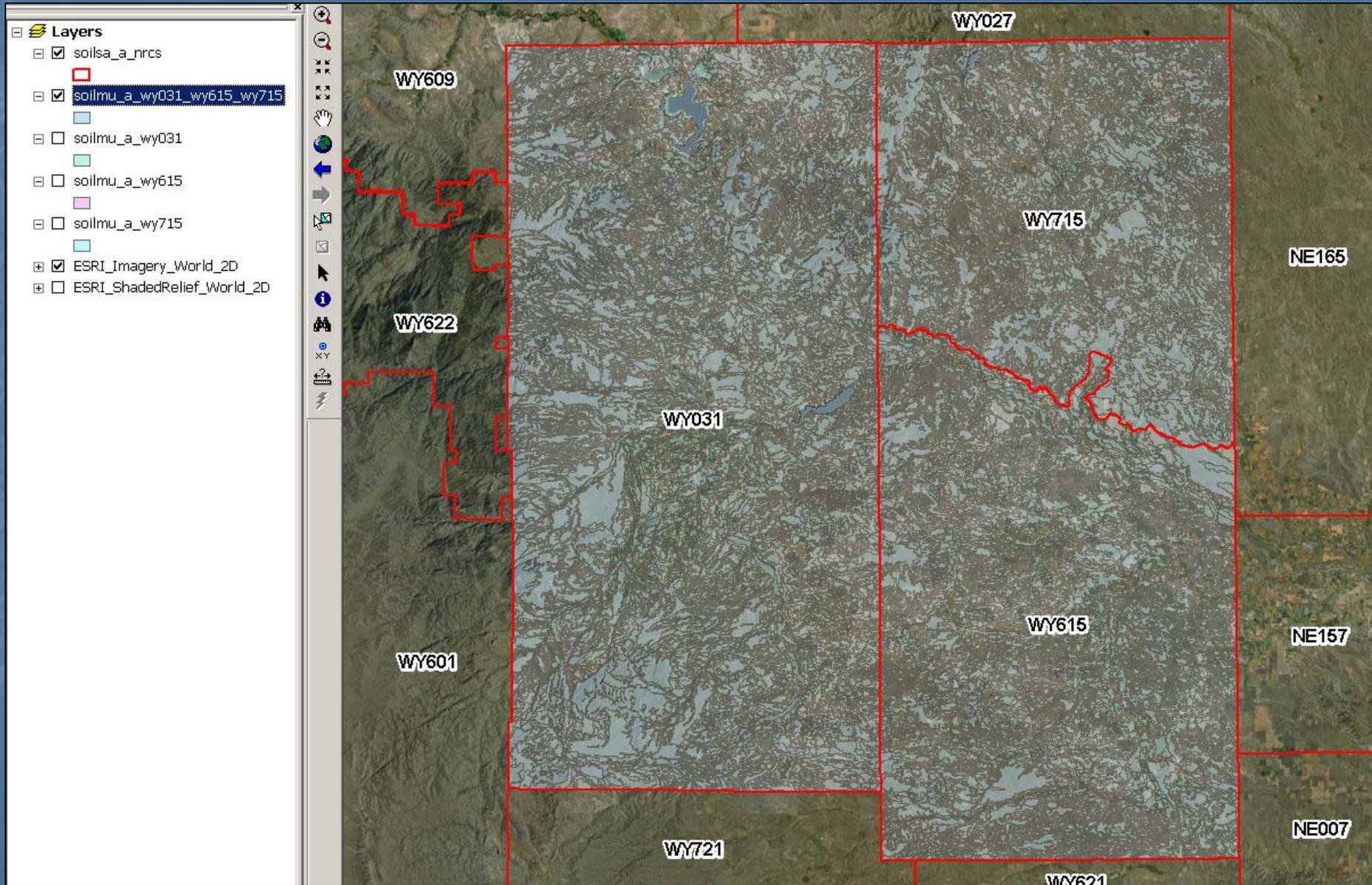




1. Click on the *Browse* button and locate the geodatabase created earlier.

2. Assign a name to the feature class and click the *Save* button, then *OK*.

We now have the three merged Wyoming soil survey area polygons in a single feature class.





The next step is to obtain the tabular data needed to identify which polygons contain components linked to ecological site ID **R067XY150WY**. Here are three potential sources:

- SSURGO tabular data from the Soil Data Mart or Geospatial Data Gateway web sites. Must be imported into a single Microsoft Access SSURGO template.
- SSURGO export of all soil survey areas of interest from NASIS
- NASIS report with delimited data that can be imported into a personal geodatabase.

In this example, we'll use a NASIS report to obtain the tabular data we need. The **MLRA01\_Office NASIS site** has the following NASIS reports that will provide the data we need to create an ecological site extent map:

W - EXPORT - ESD Data 1B: Site & Phys Prop w/ climate NAT

W - EXPORT - ESD Data 2B: Site Prop and Taxon Class NAT

W - EXPORT - ESD Data 3B: Phys. Prop, Tex., Rock Frags NAT

W - EXPORT - ESD Data 4B: Chemical Properties NAT

W - EXPORT - ESD Data 5B: Water Features NAT

W - EXPORT - ESD Data 6B: Idaho selected data NAT

W - EXPORT - ESD Data 7B: Landform, Parent Mat, Draincl NAT

W - EXPORT - ESD Data 8B: Ecosite and range prod. NAT

Right click on the NASIS report name and select *Run Against National Database*.

The screenshot shows a software interface with a 'Reports' window. At the top, there are two filter options: 'View Ready to Use Only' (checked) and 'View Checked Out Only' (unchecked). Below these is a list of reports, each with a thumbs-up icon. The report 'W - EXPORT - ESD Data 1B: Site & Phys Prop w/ climate NAT' is selected and highlighted. A right-click context menu is open over this report, listing various actions with their keyboard shortcuts. The option 'Run Against National Database' is highlighted in blue, and a red arrow points to it from the right. Another red arrow points to the selected report name from the right.

Action	Keyboard Shortcut
Open	Ctrl+Shift+O
Check Out	Ctrl+Shift+K
Mark for Deletion	Ctrl+Shift+M
Remove Deletion Mark	Ctrl+Shift+M
Discard Changes	
Check In	Ctrl+Shift+J
View Check Out Status	Ctrl+Shift+G
Run Against Local Database	Ctrl+Shift+L
Run Against National Database	Ctrl+Shift+N
View Information	Ctrl+Shift+H
Add to Favorites	Ctrl+Shift+F

1. Enter the **Ecological Site ID** *R067XY150WY*.
2. Enter a **y** (yes) or **n** (no) depending on whether you want to include soil mapunits where the ecological site only occurs with minor components.
3. Select the Geographic Applicability options.
4. Click the **Run** button.

Selections for Running Report W - EXPORT - ESD Data 1B: Site & Phys Prop w/ cli...

Ecological Site ID IMATCHES:  R067XY150WY

Include minor components in the report? (Enter y or n): y 

Geographic Applicability (0 or more): 

- current for part of area
- current wherever mapped
- not current

An asterisk wild card can also be used with ecological site ID. For example, **R067\*** would include all the range ecological sites in MLRA 67 in the report output.

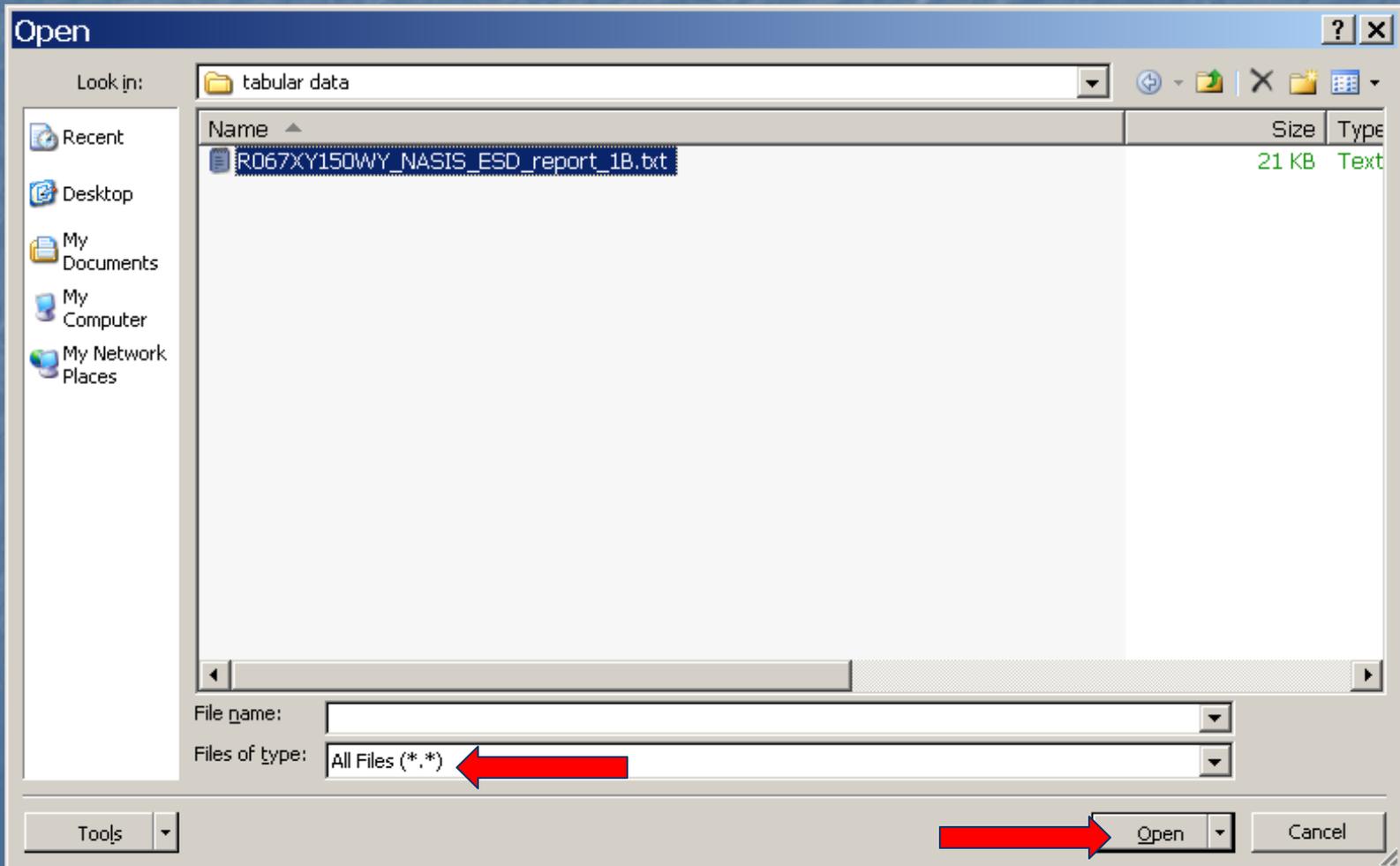
The report is produced as a text file. Note the pipe (|) delimiters separating data fields. Click *File > Save As* and save it as a text file in the folder of your choice.

W - EXPORT - ESD Data 1B Site & Phys Prop w climate NAT.txt - Notepad

File Edit Format View Help

Ecosite_ID	Ecosite_name	Area_sym	Status	Musym	Mukey	Coiid	Compname	Local	_phase	Comp_pct	Slope_h	FFD_l	FFD_h	Restrict_kind	Restrict_depth_l	Restrict_depth_h	Perm_class_0_10	Perm_class_10_40
R067XY150WY	SANDY	(12-17SP)	Published	WY031	210	104566	154060	Albinas	20	0	3	4300	5700	12	15			
R067XY150WY	SANDY	(12-17SP)	Published	WY031	255	104606	154250	Albinas	20	0	3	4300	5700	12	15			
R067XY150WY	SANDY	(12-17SP)	Update needed	WY715	53	1414822	154250	Albinas	20	0	3	4300	5700	12	15			
R067XY150WY	SANDY	(12-17SP)	Published	WY031	103	104445	153606	Alice	40	0	4	4500	5800	12	15	45		
R067XY150WY	SANDY	(12-17SP)	Published	WY031	105	104452	153615	Alice	30	0	4	4500	5800	12	15	45		
R067XY150WY	SANDY	(12-17SP)	Published	WY031	245	104599	154210	Alice	25	0	6	4300	5800	12	15	45		
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AmB	104653	154297	Anselmo	85	0	6			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AmA	104654	154301	Anselmo	40	0	3			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AmB	104655	154306	Anselmo	40	3	6			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AmC	104656	154312	Anselmo	40	6	10			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AmD	104657	154317	Anselmo	40	10	15			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AsA	104658	154321	Anselmo	40	0	3			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AsC	104659	154326	Anselmo	40	3	10			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AsD	104660	154331	Anselmo	40	10	15			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AtA	104661	154335	Anselmo	60	0	3			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	MeA	104713	154547	Anselmo	40	0	3			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	MeB	104714	154553	Anselmo	40	3	6			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	MeC	104715	154558	Anselmo	40	6	10			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AuB	104662	154339	Ascalon	85	0	6			12	16	46	50	
R067XY150WY	SANDY	(12-17SP)	Out-of-date	WY615	AuC	104663	154342	Ascalon	85	6	10			12	16	46	50	

Start an empty **Excel** session. Click on the *Office button* then *Open (or Ctrl-O)* and browse to the NASIS report text file. Change the *Files of Type* drop down list to *All Files*. Click *Open*.



The Text Import Wizard will open. Make sure that the file type is set to *Delimited*. Click *Next*.

**Text Import Wizard - Step 1 of 3** [?] [X]

The Text Wizard has determined that your data is Delimited.  
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

**Delimited** - Characters such as commas or tabs separate each field.

Fixed width - Fields are aligned in columns with spaces between each field.

Start import at row:  File origin:

Preview of file C:\home\steve\_campbell\My Documents\...\R067XY150WY\_NASIS\_ESD\_report\_1B.txt.

	Ecosite_ID	Ecosite_name	Area_sym	Status	Musym	Mukey	Coiid	Compname	Local
1									
2	R067XY150WY	SANDY (12-17SP)	WY031	Published	210	104566	154060	Albinas	20
3	R067XY150WY	SANDY (12-17SP)	WY031	Published	255	104606	154250	Albinas	20
4	R067XY150WY	SANDY (12-17SP)	WY715	Update needed	53	1414822	154250	Albinas	20
5	R067XY150WY	SANDY (12-17SP)	WY031	Published	103	104445	153606	Alice	40 0

Cancel  Finish

The default *Delimiter* will be set to *Tab*. Uncheck it and click the box to the left of *Other*. Type the pipe (|) character in the box to the right of *Other*. Click *Next*.

**Text Import Wizard - Step 2 of 3** [?] [X]

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

**Delimiters**

- Tab
- Semicolon
- Comma
- Space
- Other: |

Treat consecutive delimiters as one

Text qualifier: " [v]

**Data preview**

Ecosite_ID	Ecosite_name	Area_sym	Status	Musym	Mukey	Coiid	Con
R067XY150WY	SANDY (12-17SP)	WY031	Published	210	104566	154060	Alk
R067XY150WY	SANDY (12-17SP)	WY031	Published	255	104606	154250	Alk
R067XY150WY	SANDY (12-17SP)	WY715	Update needed	53	1414822	154250	Alk
R067XY150WY	SANDY (12-17SP)	WY031	Published	103	104445	153606	Alk

Buttons: Cancel [Next >] Finish

The default *Column data* format will be set to *General* for all columns. Click on the header for the *Mukey* column and change the data format to *Text*. This will be important when we use this data with the spatial data. Click *Finish*.

**Text Import Wizard - Step 3 of 3** [?] [X]

This screen lets you select each column and set the Data Format.

Column data format:

General

**Text** ←

Date: MDY ▾

Do not import column (skip)

'General' converts numeric values to numbers, date values to dates, and all remaining values to text.

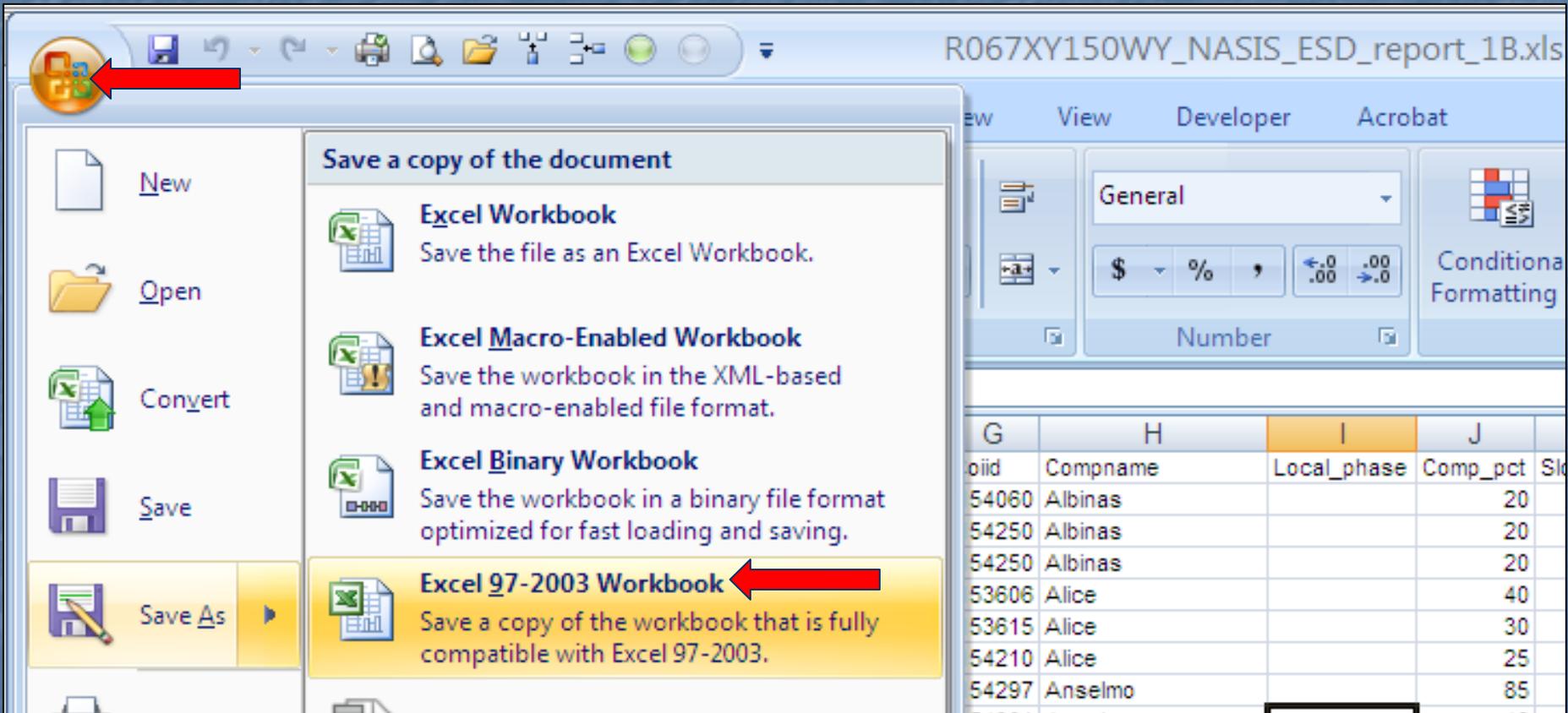
Advanced...

Data preview

General	General	General	General	General	<b>Text</b>	General	General
cosite_ID	Ecosite_name	Area_sym	Status	Musym	<b>Mukey</b>	Coiid	Comp
067XY150WY	SANDY (12-17SP)	WY031	Published	210	104566	154060	Albi
067XY150WY	SANDY (12-17SP)	WY031	Published	255	104606	154250	Albi
067XY150WY	SANDY (12-17SP)	WY715	Update needed	53	1414822	154250	Albi
067XY150WY	SANDY (12-17SP)	WY031	Published	103	104445	153606	Alid

Cancel < Back **Finish** →

The delimited text file will open in Excel. Click on the Office button. Select *Save As*. Choose the *Excel 97-2003 Workbook* format. This version of Excel is compatible with ArcGIS 9.x



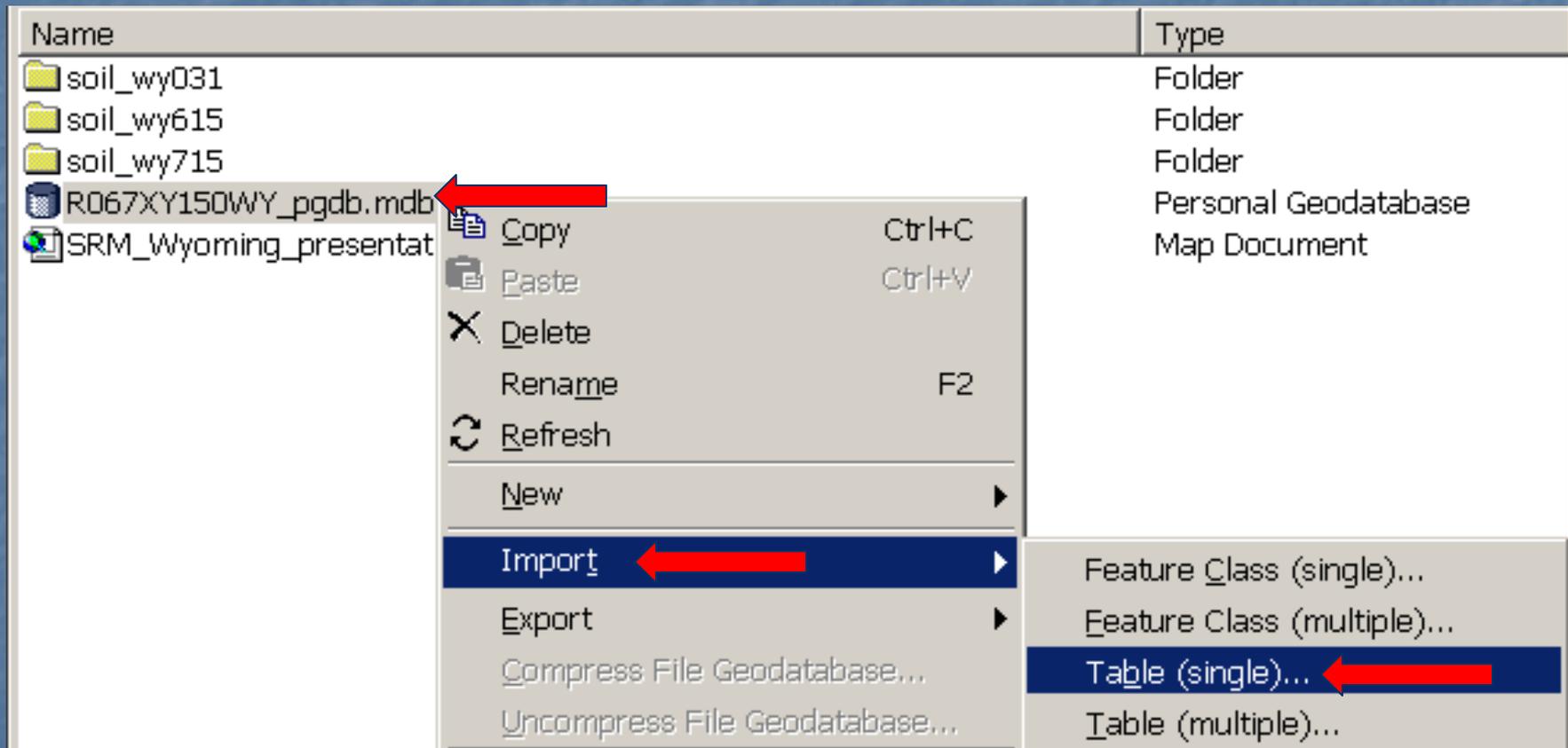
The screenshot shows the Microsoft Excel interface. The title bar reads "R067XY150WY\_NASIS\_ESD\_report\_1B.xls". The ribbon includes "New", "View", "Developer", and "Acrobat". The "Number" group on the ribbon shows "General" selected. The "Save As" dialog box is open, displaying the following options:

- Excel Workbook**: Save the file as an Excel Workbook.
- Excel Macro-Enabled Workbook**: Save the workbook in the XML-based and macro-enabled file format.
- Excel Binary Workbook**: Save the workbook in a binary file format optimized for fast loading and saving.
- Excel 97-2003 Workbook**: Save a copy of the workbook that is fully compatible with Excel 97-2003. (This option is highlighted with a red arrow.)

The background spreadsheet shows the following data:

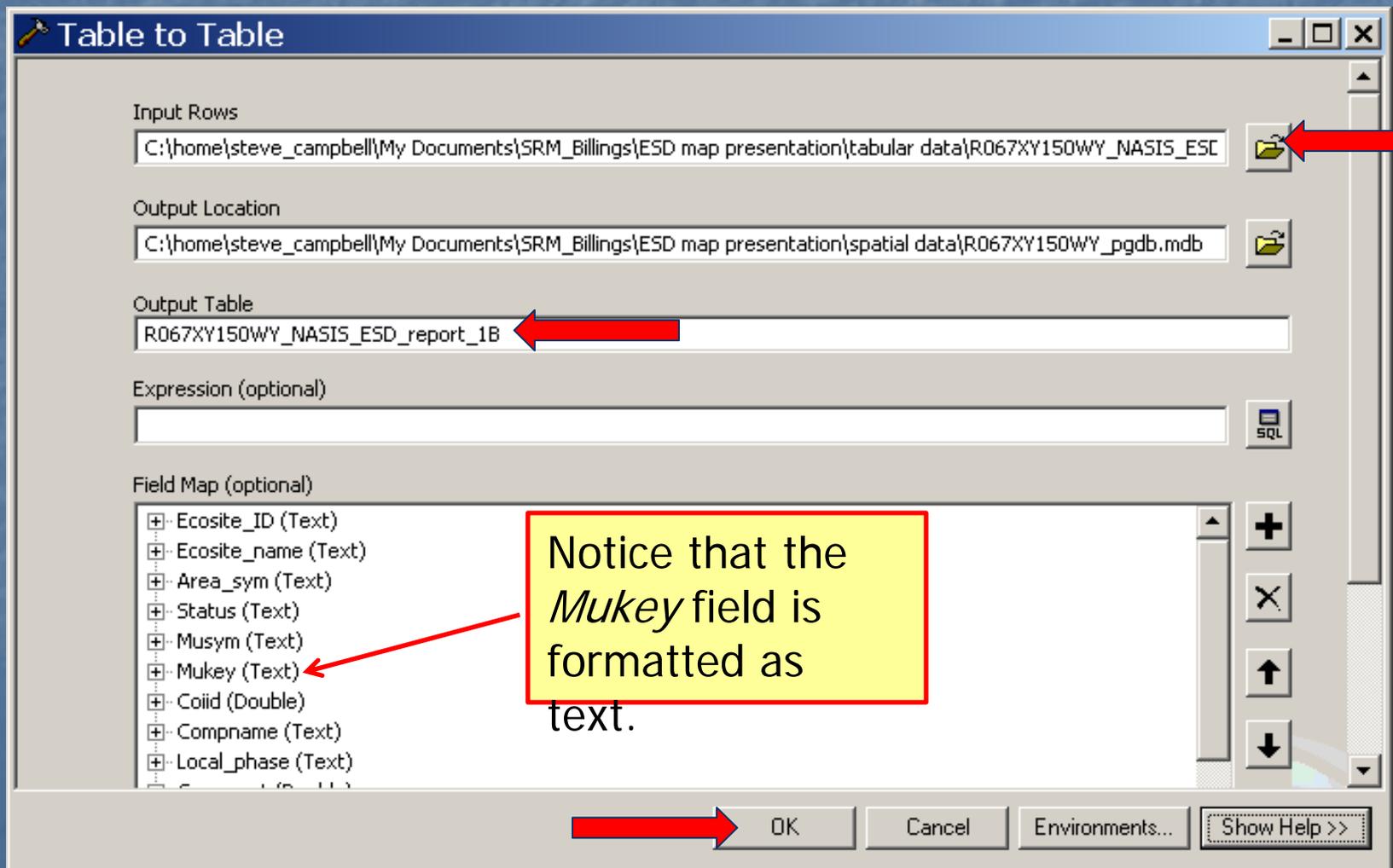
G	H	I	J	K
oid	Comname	Local_phase	Comp_pct	St
54060	Albinas		20	
54250	Albinas		20	
54250	Albinas		20	
53606	Alice		40	
53615	Alice		30	
54210	Alice		25	
54297	Anselmo		85	

Return to ArcCatalog. Right click on the Personal Geodatabase that was created earlier. Select *Import* then *Table (single)*.

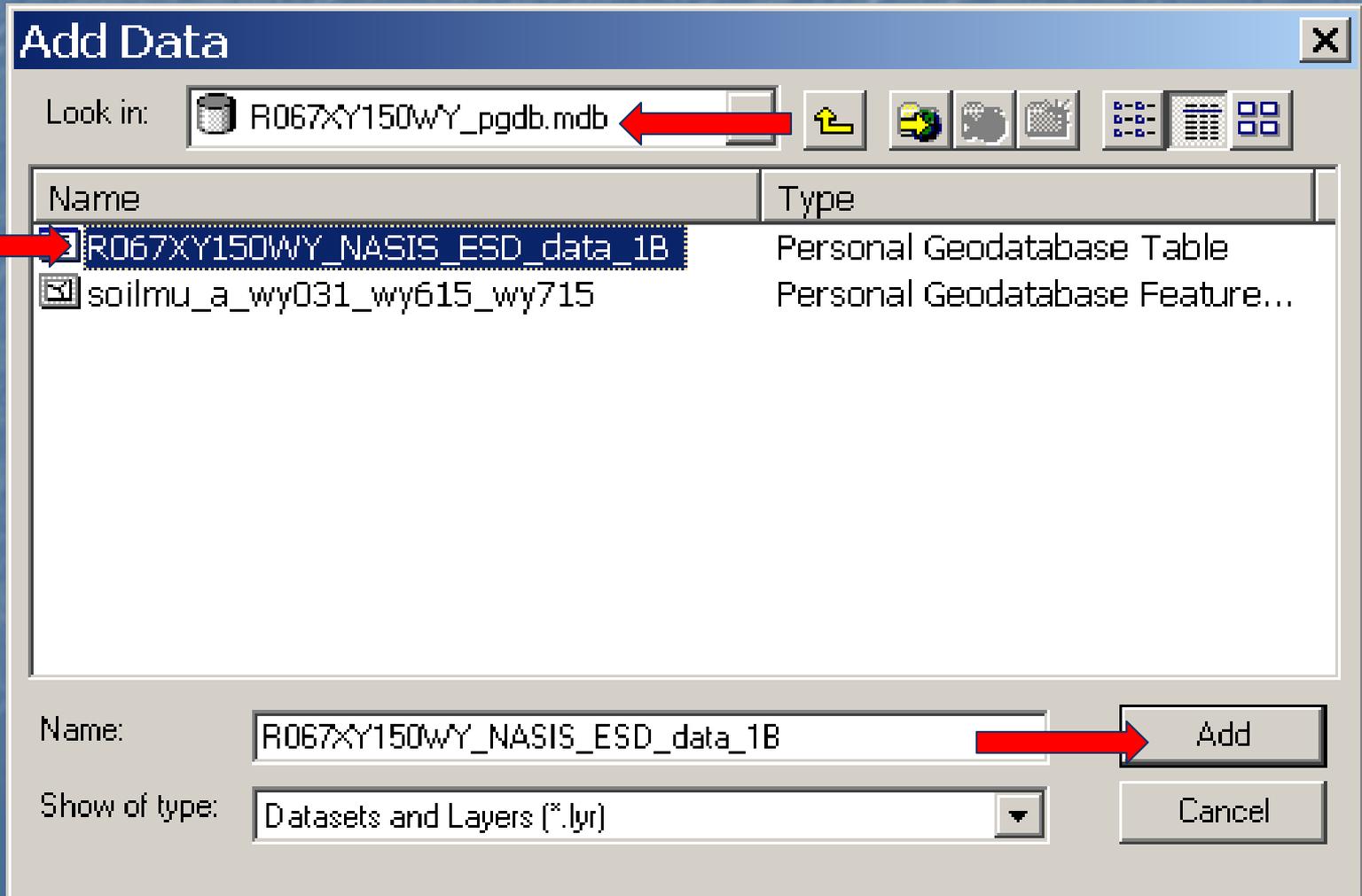


Click on the *Browse* button to the right of *Input Rows* and browse to the Excel file created earlier.

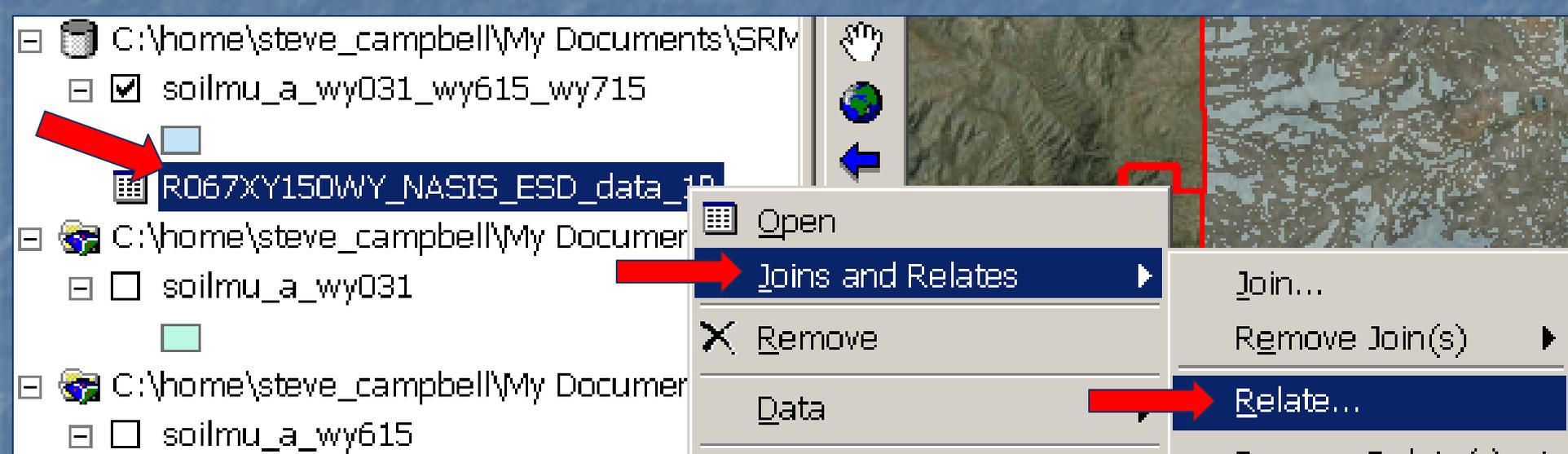
Enter a name for the table in the *Output Table*. Click *OK*. The table will be imported into the personal geodatabase.



Return to ArcMap. Click the *Add Data* button  and browse to the personal geodatabase we created earlier. Double click on the geodatabase and locate the table we imported in the last step. Click the *Add* button



Notice that our personal geodatabase table has been added to the table of contents. Right click on the table. Select *Joins and Relates* then *Relate*.



- Step 1 - Select *Mukey*
- Step 2 - Select the merged soil survey polygons feature class
- Step 3 - Select *MUKEY*
- Step 4 - Optionally assign a relate name
- Step 5 - Click *OK*

**Relate**

Relate lets you associate data with this layer. The associated data isn't appended into this layer's attribute table like it is in a Join. Instead you can access the related data when you work with this layer's attributes or vice-versa.

Establishing a relate is particularly useful if there is a 1-to-many or many-to-many association between the layer and the related data.

1. Choose the field in this layer that the relate will be based on:  
Mukey
2. Choose the table or layer to relate to this layer, or load from disk:  
soilmu\_a\_wy031\_wy615\_wy715
3. Choose the field in the related table or layer to base the relate on:  
MUKEY
4. Choose a name for the relate:  
mukey relate

About Relating Data    OK    Cancel

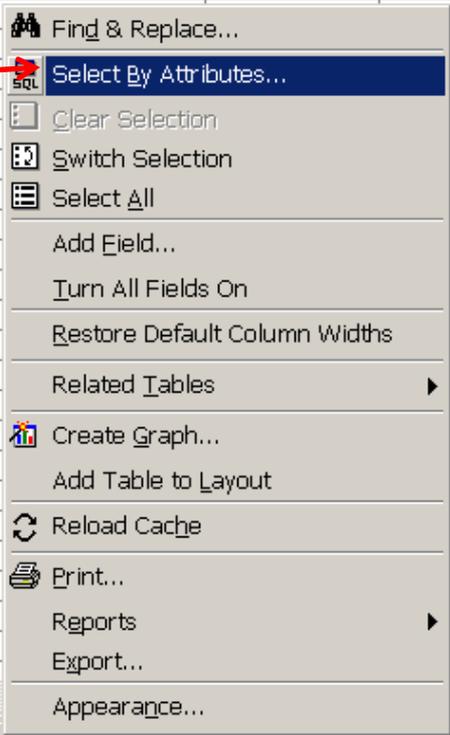
1. Right click on the geodatabase table and select *Open*.



Attributes of R067XY150WY\_NASIS\_ESD\_data\_1B

OBJECTID *	Ecosite_ID	Ecosite_name	Area_sym	Status	Musym	Mukey	Coiid	Compname	Local_phase	Comp_pct	Slope_
1	R067XY150WY	SANDY (12-17SP)	WY031	Published	210	104566	154060	Albinas	<Null>	20	
2	R067XY150WY	SANDY (12-17SP)	WY031	Published	255	104606	154250	Albinas	<Null>	20	
3	R067XY150WY	SANDY (12-17SP)	WY715	Update needed	53	1414822	154250	Albinas	<Null>	20	
4	R067XY150WY	SANDY (12-17SP)	WY031					Alice		40	
5	R067XY150WY	SANDY (12-17SP)	WY031					Alice		30	
6	R067XY150WY	SANDY (12-17SP)	WY031					Alice		25	
7	R067XY150WY	SANDY (12-17SP)	WY615					Anselmo		85	
8	R067XY150WY	SANDY (12-17SP)	WY615					Anselmo		40	
9	R067XY150WY	SANDY (12-17SP)	WY615					Anselmo		40	
10	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AmC	104656	154312	Anselmo		40	
11	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AmD	104657	154317	Anselmo		40	
12	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AsA	104658	154321	Anselmo		40	
13	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AsC	104659	154326	Anselmo		40	
14	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AsD	104660	154331	Anselmo		40	
15	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AtA	104661	154335	Anselmo		60	
16	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	MeA	104713	154547	Anselmo		40	
17	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	MeB	104714	154553	Anselmo		40	
18	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	MeC	104715	154558	Anselmo		40	
19	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AuB	104662	154339	Ascalon		85	
20	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AuC	104663	154342	Ascalon		85	
21	R067XY150WY	SANDY (12-17SP)	WY031	Published	103	104445	153607	Bayard		40	
22	R067XY150WY	SANDY (12-17SP)	WY031	Published	106	104453	153623	Bayard		80	
23	R067XY150WY	SANDY (12-17SP)	WY031	Published	108	104456	153628	Bayard		35	
24	R067XY150WY	SANDY (12-17SP)	WY031	Published	109	104458	153635	Bayard		30	
25	R067XY150WY	SANDY (12-17SP)	WY031	Published	124	104481	153700	Bayard		20	
26	R067XY150WY	SANDY (12-17SP)	WY031	Published	155	104505	153806	Bayard		35	

3. Click on *Select by Attribute*.



2. Click on the *Options* button.



1. Double click on *Ecosite\_ID*.

2. Click the = sign.

3. Click the *Get Unique Values* button.

4. Double click the ecological site ID you're interested in.

5. Click the Apply button

Select by Attributes

Enter a WHERE clause to select records in the table window.

Method : Create a new selection

[OBJECTID]  
[Ecosite\_ID]  
[Ecosite\_name]  
[Area\_sym]  
[Status]  
[Musym]

= <> Like 'R067XY150wY'  
> >= And  
< <= Or  
? \* ( ) Not  
|s Get Unique Values Go To:

SELECT \* FROM R067XY150wY\_NASIS\_ESD\_data\_1B WHERE:  
[Ecosite\_ID] = 'R067XY150wY'

Clear Verify Help Load... Save...  
Apply Close

Attributes of R067XY150WY\_NASIS\_ESD\_data\_1B

OBJECTID *	Ecosite_ID	Ecosite_name	Area_sym	Status	Musym	Mukey	Coiid	C
1	R067XY150WY	SANDY (12-17SP)	WY031	Published	210	104566	154060	Albinas
2	R067XY150WY	SANDY (12-17SP)	WY031	Published	255	104606	154250	Albinas
3	R067XY150WY	SANDY (12-17SP)	WY715	Update needed	53	1414822	154250	Albinas
4	R067XY150WY	SANDY (12-17SP)	WY031	Published	103	104445	153606	Alice
5	R067XY150WY	SANDY (12-17SP)	WY031	Published	105	104452	153615	Alice
6	R067XY150WY	SANDY (12-17SP)	WY031	Published	245	104599	154210	Alice
7	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AlB	104653	154297	Anselmo
8	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AmA	104654	154301	Anselmo
9	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AmB	104655	154306	Anselmo
10	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AmC	104656	154312	Anselmo
11	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AmD	104657	154317	Anselmo
12	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AsA	104658	154321	Anselmo
13	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AsC	104659	154326	Anselmo
14	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AsD	104660	154331	Anselmo
15	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AtA	104661	154335	Anselmo
16	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	MeA	104713	154547	Anselmo
17	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	MeB	104714	154553	Anselmo
18	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	mukey relate : soilmu_a_wy031_wy615_wy715			
19	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AuB	104662	154339	Ascalon
20	R067XY150WY	SANDY (12-17SP)	WY615	Out-of-date	AuC	104663	154342	Ascalon
21	R067XY150WY	SANDY (12-17SP)	WY031	Published	103	104445	153607	Bayard
22	R067XY150WY	SANDY (12-17SP)	WY031	Published	106	104453	153623	Bayard
23	R067XY150WY	SANDY (12-17SP)	WY031	Published	108	104456	153628	Bayard
24	R067XY150WY	SANDY (12-17SP)	WY031	Published	109	104458	153635	Bayard
25	R067XY150WY	SANDY (12-17SP)	WY031	Published	124	104481	153700	Bayard
26	R067XY150WY	SANDY (12-17SP)	WY031	Published	150	104505	153806	Bayard
27	R067XY150WY	SANDY (12-17SP)	WY031	Published	164	104519	153875	Bayard

Record: 1 Show: All Selected Records (148 out of 148 Selected) Options

NE165

Find & Replace...  
 Select By Attributes...  
 Clear Selection  
 Switch Selection  
 Select All  
 Add Field...  
 Turn All Fields On  
 Restore Default Column Widths  
**Related Tables**  
 Create Graph...  
 Add Table to Layout  
 Reload Cache  
 Print...  
 Reports  
 Export...  
 Appearance...

1. Click the *Options* button again.

2. Click on *Related Tables*, then the relate name we created earlier.

The attribute table for the merged Wyoming soil surveys opens and all the mapunit polygons that contain a component linked to ecological site ID **R067XY150WY** are selected (blue outline).

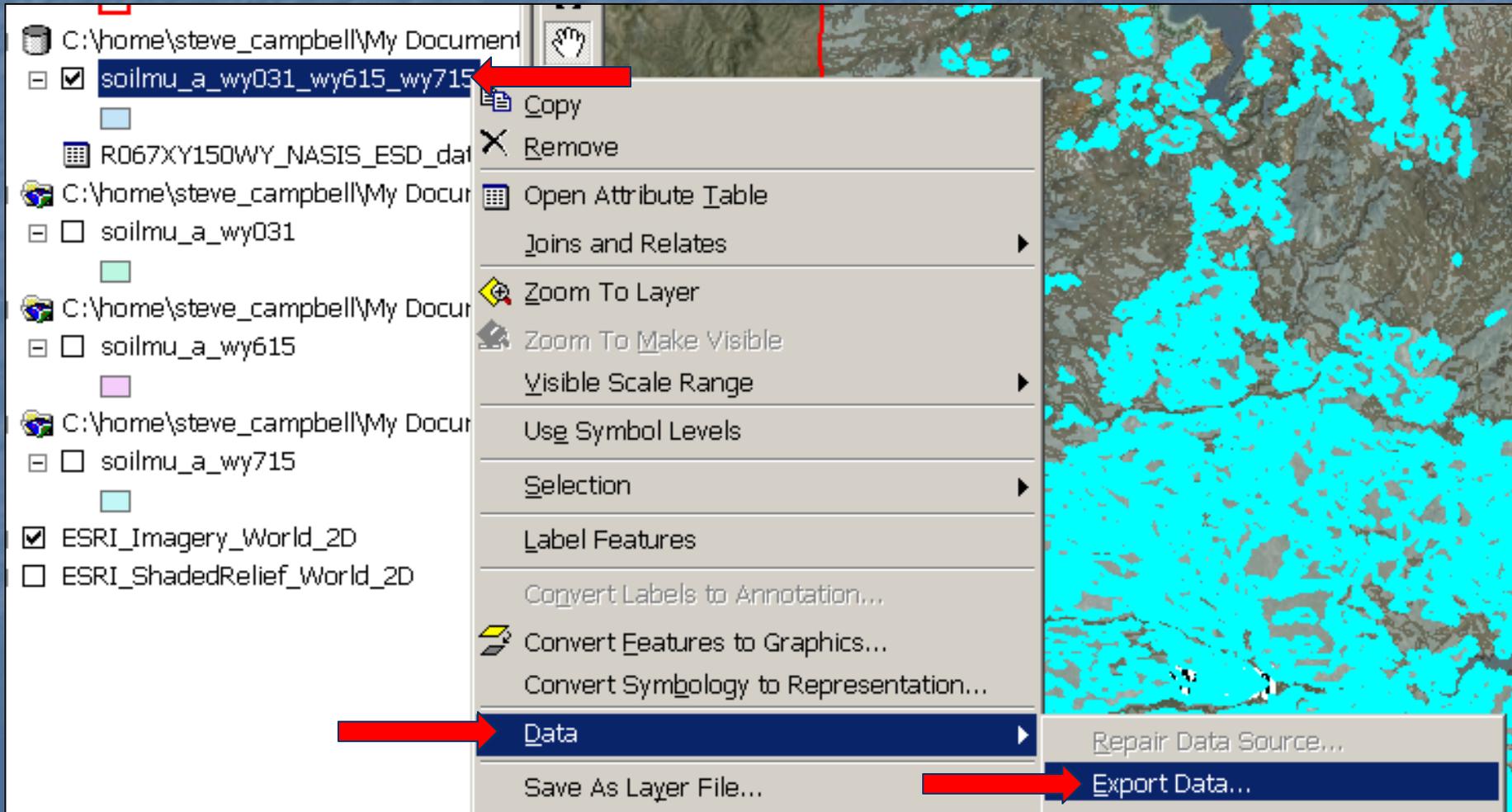
The screenshot displays a GIS interface with a map of Wyoming soil surveys. A large cyan selection is overlaid on the map, covering a significant portion of the central and eastern areas. The map is divided into several mapunit polygons, with labels such as WY609, WY027, WY016, WY601, WY721, and WY604. A red outline is visible around the entire map area.

The attribute table window, titled "Attributes of soilmu\_a\_wy031\_wy615\_wy715", is open in the foreground. It shows a list of 18 records, each representing a polygon. The columns are: OBJECTID, Shape, AREASYMBOL, SPATIALVER, MUSYM, MUKEY, and Shape\_Le. The records are sorted by Shape\_Le in descending order. The 16th record is highlighted in cyan, indicating it is selected.

OBJECTID	Shape	AREASYMBOL	SPATIALVER	MUSYM	MUKEY	Shape_Le
1	Polygon	WY031		3 260	104610	545.3
2	Polygon	WY031		3 228	104583	1732.7
3	Polygon	WY031		3 225	104580	15598.0
4	Polygon	WY031		3 242	104597	3983.6
5	Polygon	WY031		3 255	104606	3795.8
6	Polygon	WY031		3 228	104583	8147.6
7	Polygon	WY031		3 135	104492	6722.7
8	Polygon	WY031		3 240	104595	3307.3
9	Polygon	WY031		3 175	104528	6509.7
10	Polygon	WY031		3 242	104597	5151.9
11	Polygon	WY031		3 194	104550	2150.8
12	Polygon	WY031		3 122	104478	1582.8
13	Polygon	WY031		3 263	104612	298.
14	Polygon	WY031		3 209	104564	27600.2
15	Polygon	WY031		3 214	104570	563.
16	Polygon	WY031		3 255	104606	3803.
17	Polygon	WY031		3 242	104597	1624.2
18	Polygon	WY031		3 242	104597	915.9

Record: 1 Show: All Selected Records (8793 out of ...)

We want to save the selected polygons as a new layer to create the ecological site extent map. Right click on the merged soil surveys spatial layer, select *Data*, then *Export Data*.



## Export Data

Export: Selected features

Use the same coordinate system as:

- this layer's source data
- the data frame
- the feature dataset you export the data into  
(only applies if you export to a feature dataset in a geodatabase)

Output shapefile or feature class:

C:\home\steve\_campbell\My Documents\SRM\_Billings\ESD map pr



OK

Cancel

1. Accept the default export option of *Selected Features*.

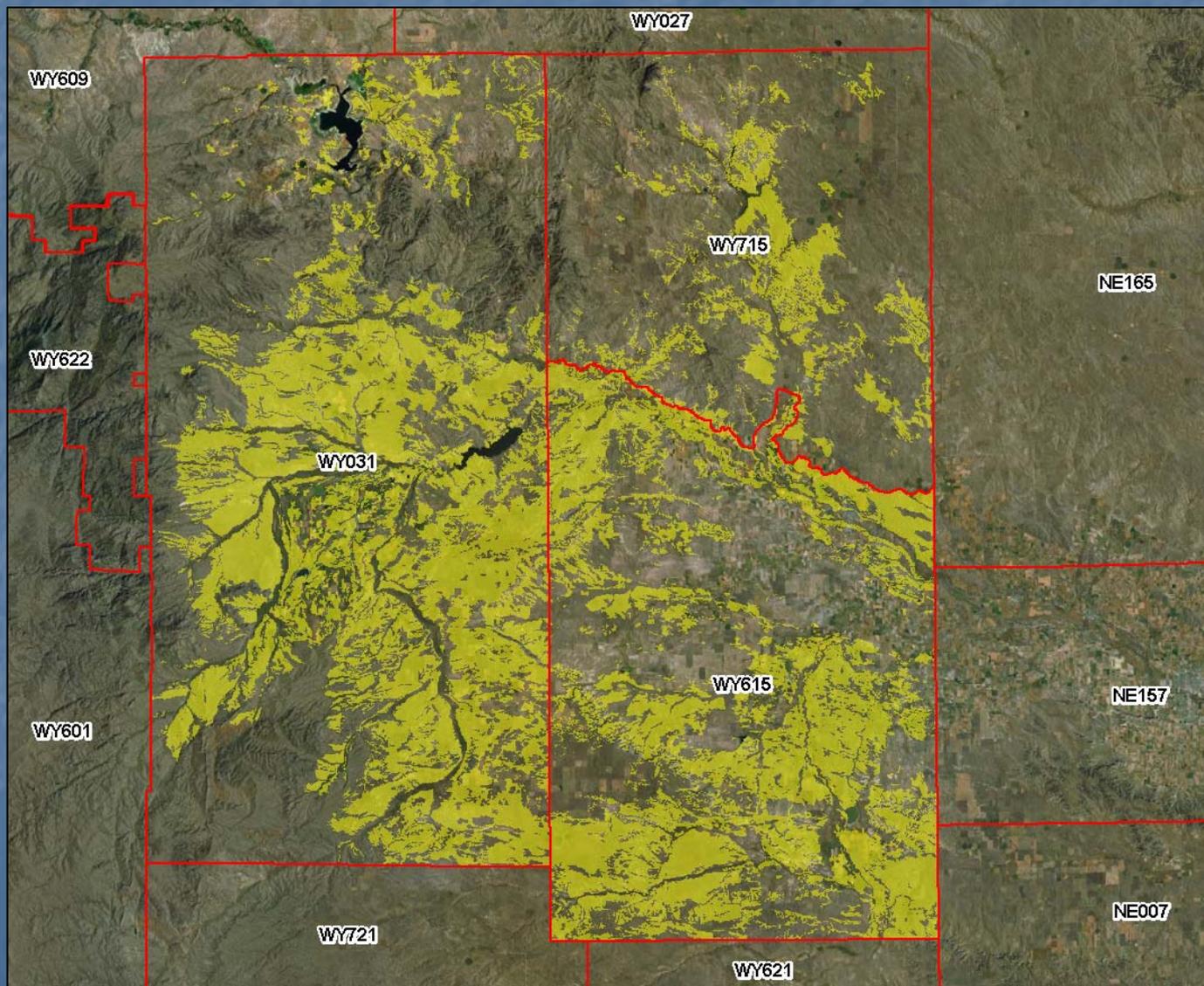
2. Click on the *Browse* button and locate the personal geodatabase created earlier.

Assign a name to the feature class such as *R06XY150WY\_extent*.

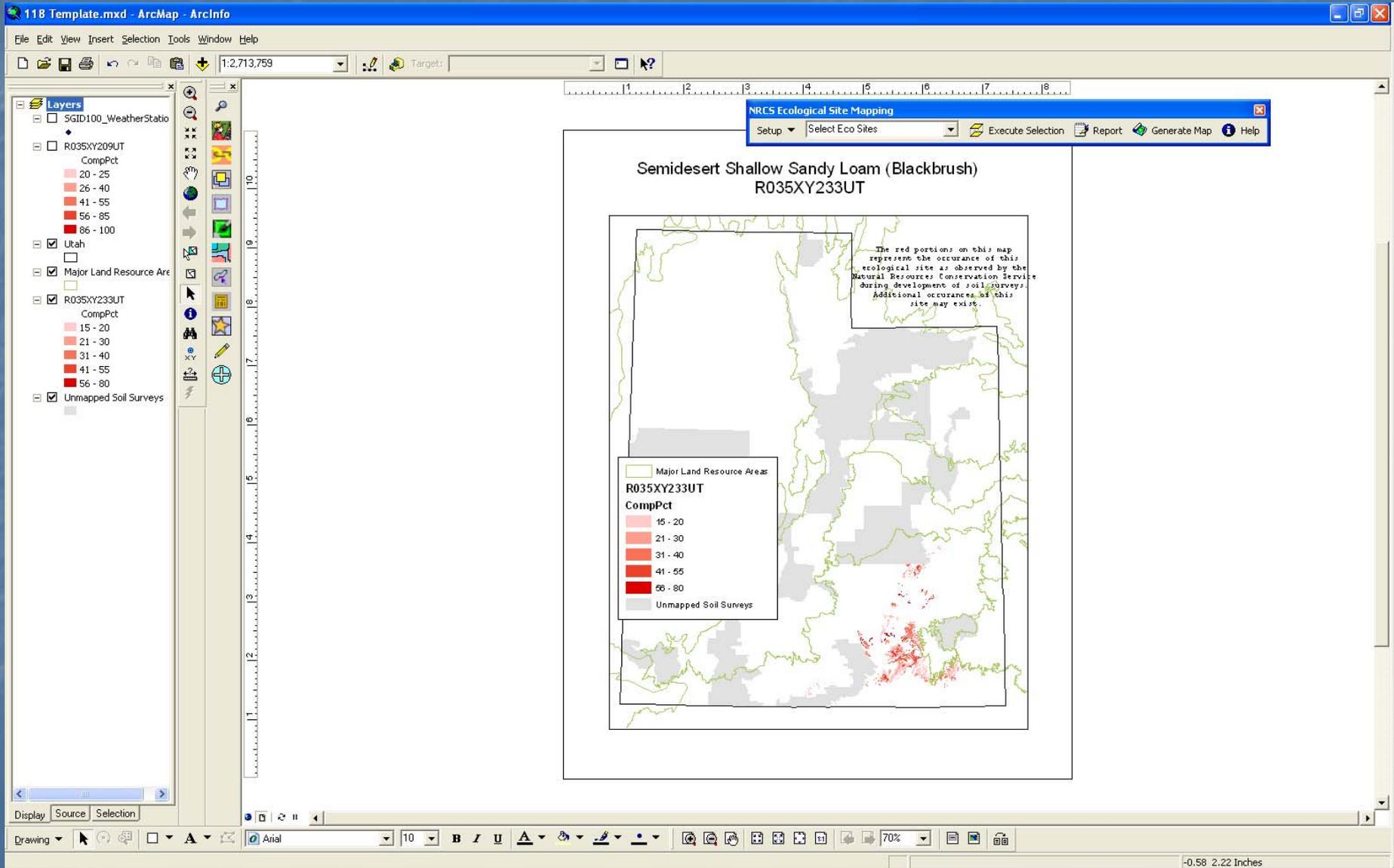
Click *OK*.



We've now created an ecological site extent map for R067XY150WY. Note that this ecological site stops at some soil survey area boundaries, and the state boundary with Nebraska, identifying future correlation opportunities.

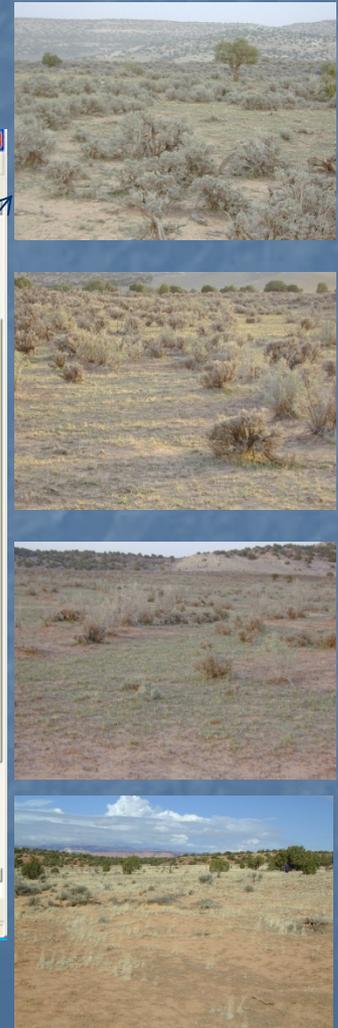
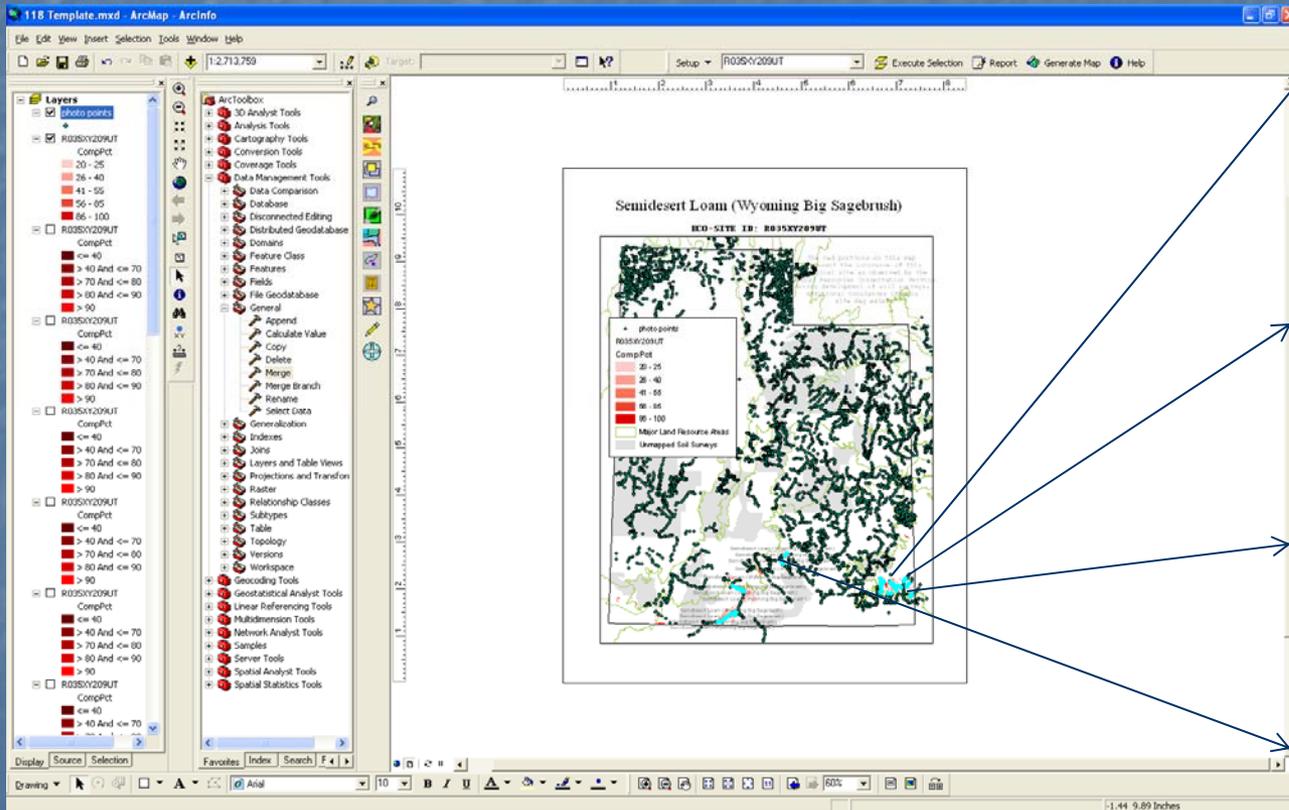


# Stanley Apps



# Using Extent Maps to Query Photos for STM Enhancement

Jake Owens-NRCS-Richfield, UT





# What Is GAP?

GAP refers to the Gap Analysis Program, a US Geological Survey program whose mission is to "keep common species common". The goal of Gap Analysis is to keep common species common by identifying those species and plant communities that are not adequately represented on existing conservation lands. Common species are those not threatened with extinction. By identifying their habitats, Gap Analysis gives land managers, planners, scientists, and policy makers the information they need to make better-informed decisions when identifying priority areas for conservation



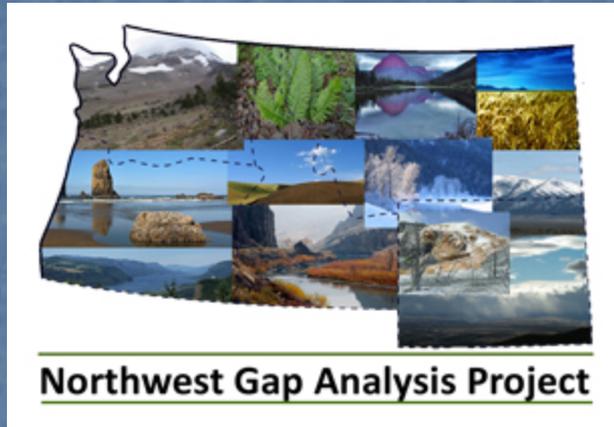
# How is Data Collected?

It varies by region, however, all regions use remote sensing and do some kind of a spot check.

In Utah, we use the spot check data (photos and their location data)

# Northwest Region

[aycrigg@uidaho.edu](mailto:aycrigg@uidaho.edu)



Washington

Oregon

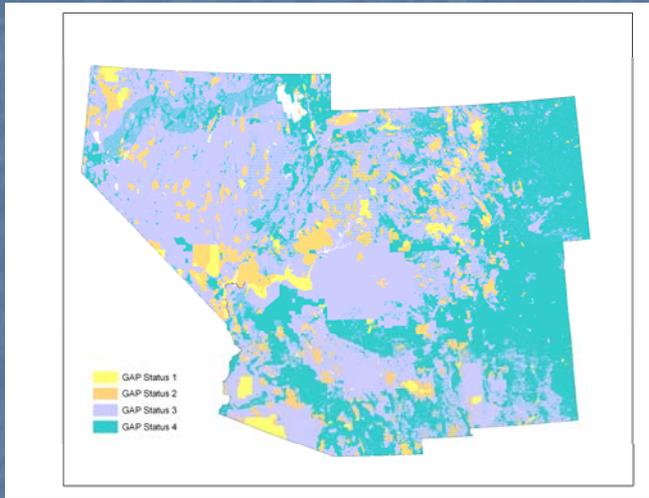
Idaho

Wyoming

Montana

# Southwest Region

[jpmagee@nmsu.edu](mailto:jpmagee@nmsu.edu)

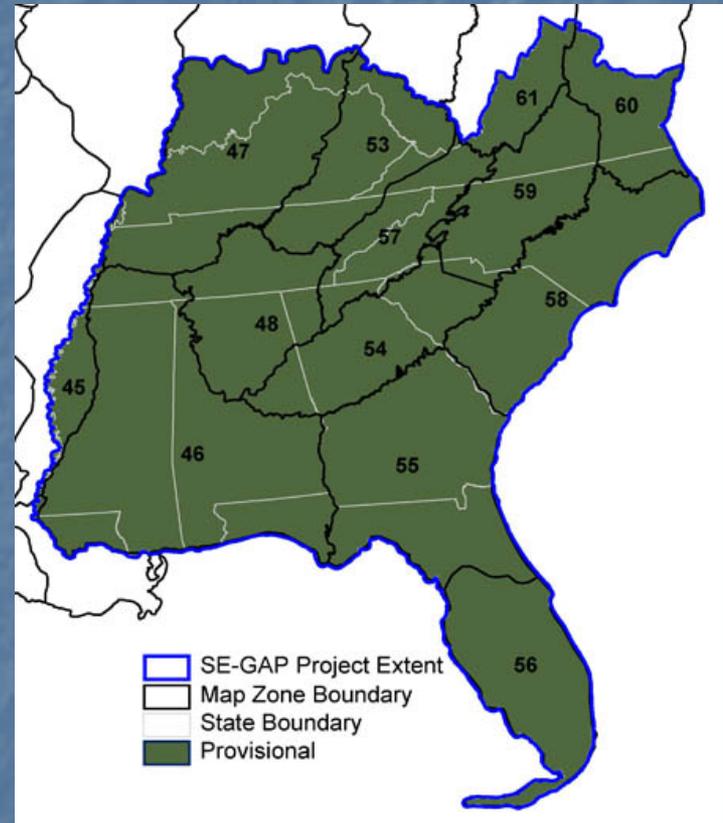


Nevada  
Arizona  
New Mexico  
Colorado  
Utah

# South Eastern

alexa\_mckerrow@ncsu.edu

Mississippi Alluvial Valley (partial)  
Gulf Coastal Plain  
Western Kentucky Interior  
Southern Interior Highlands  
Eastern Interior Highlands  
Southern piedmont  
Southern Coastal Plain  
Southern Florida  
Northern Blue Ridge Mountains  
Northern Coastal Plain  
Northern Piedmont  
Chesapeake Bay (partial)  
Central Appalachians





# North Eastern

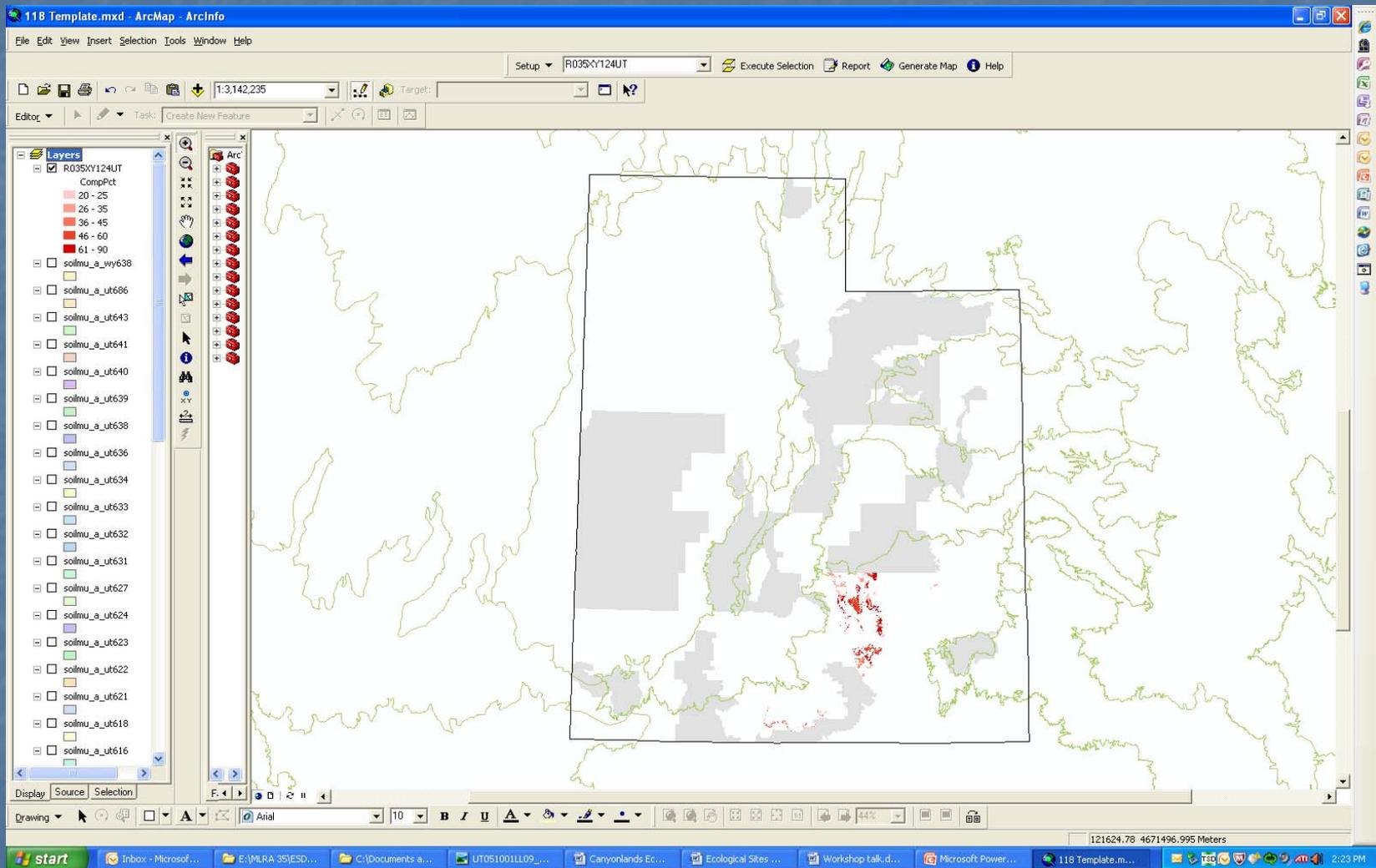
-[alexa\\_mckerrow@ncsu.edu](mailto:alexa_mckerrow@ncsu.edu)

# North Central

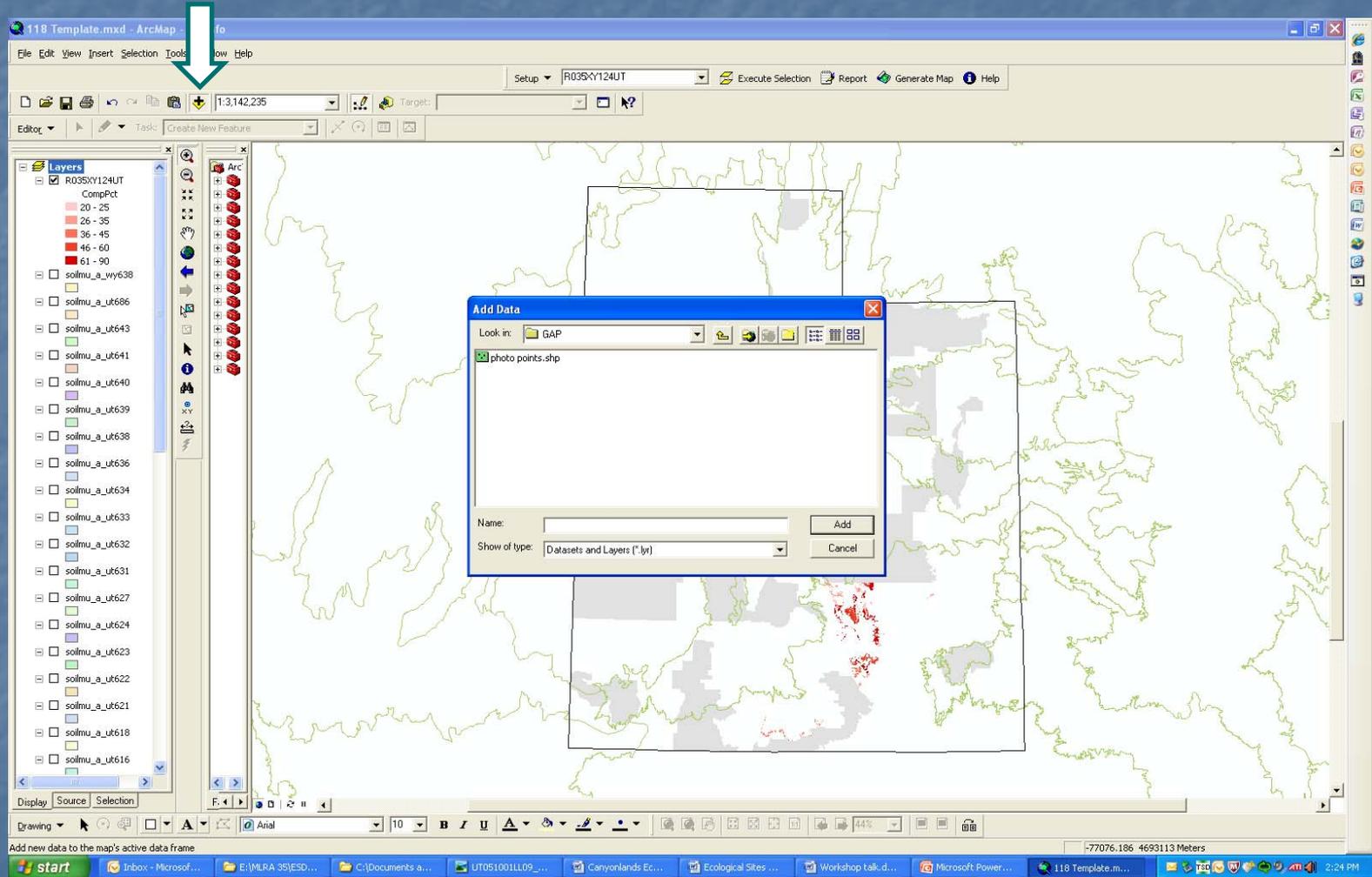
# South Central

# Create an Extent Map

See Steve Campbell Presentation



# Add Your Photo Points



# Then Select by Location

The screenshot displays the ArcMap interface with the 'Select by Location' menu open. The menu options include: Select By Attributes..., Select By Location..., Select By Graphics, Zoom To Selected Features, Pan To Selected Features, Statistics..., Set Selectable Layers..., Clear Selected Features, Interactive Selection Method, and Options... The 'Layers' panel on the left shows a list of layers, including 'photo points' and 'R035XY124U' with a 'CompPct' legend. The map area shows a complex network of features (likely stream channels) overlaid on a grid. The status bar at the bottom indicates the current coordinates: -54628.797 4696438.539 Meters.

118 Template.mxd - ArcMap - ArcInfo

File Edit View Insert Selection Tools Window Help

Setup R035XY124UT Execute Selection Report Generate Map Help

Select By Attributes...  
Select By Location...  
Select By Graphics  
Zoom To Selected Features  
Pan To Selected Features  
Statistics...  
Set Selectable Layers...  
Clear Selected Features  
Interactive Selection Method  
Options...

Layers

- photo points
- R035XY124U  
CompPct
  - 20 - 25
  - 26 - 35
  - 36 - 45
  - 46 - 60
  - 61 - 90
- solimu\_a\_wy638
- solimu\_a\_ut686
- solimu\_a\_ut643
- solimu\_a\_ut641
- solimu\_a\_ut640
- solimu\_a\_ut639
- solimu\_a\_ut638
- solimu\_a\_ut636
- solimu\_a\_ut634
- solimu\_a\_ut633
- solimu\_a\_ut632
- solimu\_a\_ut631
- solimu\_a\_ut627
- solimu\_a\_ut624
- solimu\_a\_ut623
- solimu\_a\_ut622
- solimu\_a\_ut621
- solimu\_a\_ut618

Display Source Selection

Drawing Arial 10 B I U A 44%

Selects features using the location of features in another layer

-54628.797 4696438.539 Meters

start | Inbox - Microsof... | E:\MLRA 35\ESD... | C:\Documents a... | UT051001LL09... | Canyonlands Ec... | Ecological Sites ... | Workshop talk... | Microsoft Power... | 118 Template.m... | 2:27 PM

118 Template.mxd - ArcMap - ArcInfo

File Edit View Insert Selection Tools Window Help

Setup R035XY124UT Execute Selection Report Generate Map Help

1:3,142,235 Target:

Editor Task: Create New Feature

**Layers**

- photo points
- R035XY124UT
  - CompPct
    - 20 - 25
    - 26 - 35
    - 36 - 45
    - 46 - 60
    - 61 - 90
- soilmu\_a\_wy638
- soilmu\_a\_ut686
- soilmu\_a\_ut643
- soilmu\_a\_ut641
- soilmu\_a\_ut640
- soilmu\_a\_ut639
- soilmu\_a\_ut638
- soilmu\_a\_ut636
- soilmu\_a\_ut634
- soilmu\_a\_ut633
- soilmu\_a\_ut632
- soilmu\_a\_ut631
- soilmu\_a\_ut627
- soilmu\_a\_ut624
- soilmu\_a\_ut623
- soilmu\_a\_ut622
- soilmu\_a\_ut621
- soilmu\_a\_ut618

**Select By Location**

Lets you select features from one or more layers based on where they are located in relation to the Features in another layer.

I want to:

select Features from  
the following layer(s):

- photo points
- R035XY124UT
- soilmu\_a\_wy638
- soilmu\_a\_ut686
- soilmu\_a\_ut643
- soilmu\_a\_ut641
- soilmu\_a\_ut640
- soilmu\_a\_ut639
- soilmu\_a\_ut638
- soilmu\_a\_ut636
- soilmu\_a\_ut634
- soilmu\_a ut633

Only show selectable layers in this list that:

intersect  
the features in this layer:

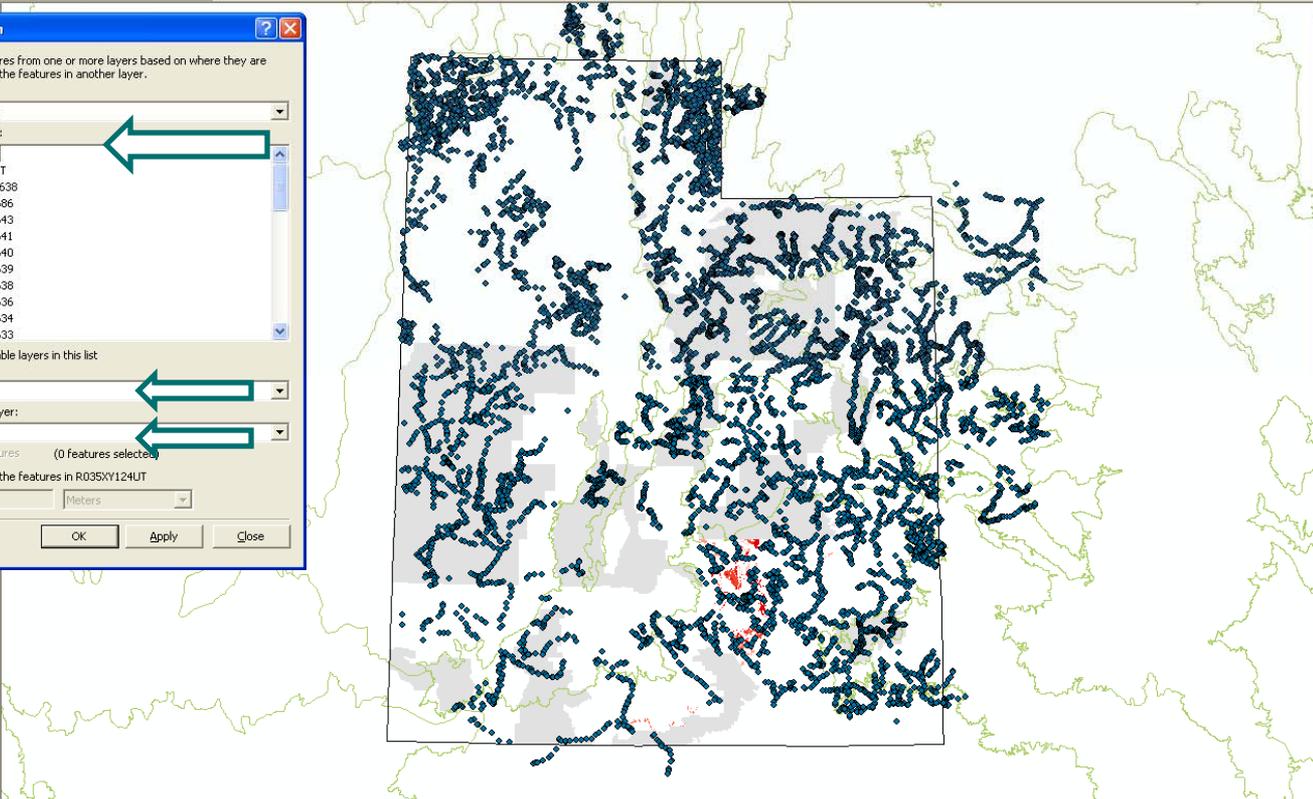
- R035XY124UT

Use selected features (0 features selected)

Apply a buffer to the features in R035XY124UT

of: 0.000000 Meters

Help OK Apply Close



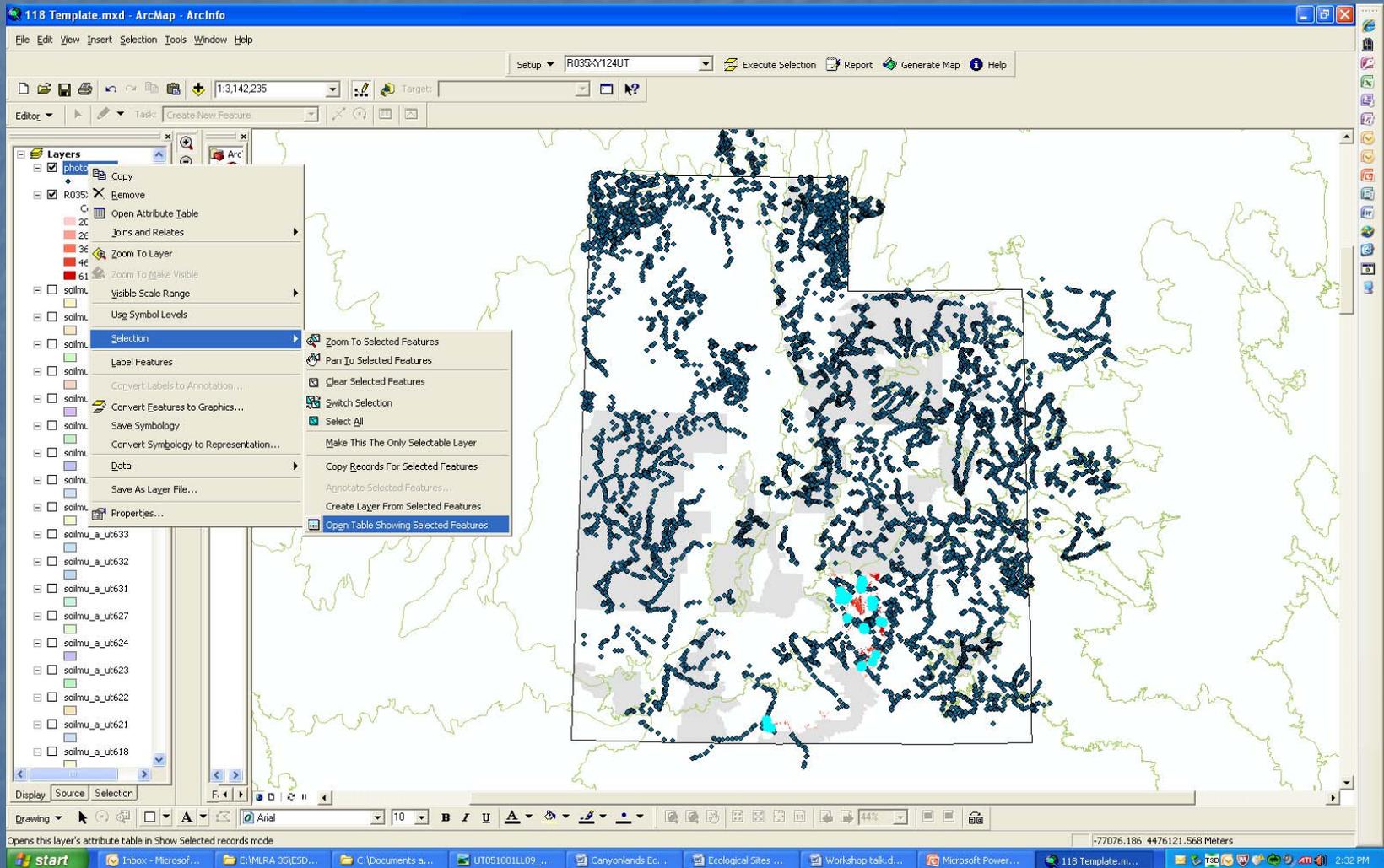
Display Source Selection

Drawing Arial 10 B I U 44%

151554.632 4236682.748 Meters

start | Inbox - Microsof... | E:\MLRA 35\ESD... | C:\Documents a... | UT051001L09... | Canyonlands Ec... | Ecological Sites ... | Workshop talk... | Microsoft Power... | 118 Template.m... | 2:30 PM

# Open Table Showing Selected Features



# Obtain Photo IDs

The screenshot shows the ArcMap interface with a map of a region containing numerous points. A window titled "Selected Attributes of photo points" is open, displaying a table of data for 35 selected records. The table includes columns for FID, Shape, OBJECTID, FID\_1, site\_id, mapzone, mega\_mapzo, state, photos, utm\_zone, datum, utm\_east, utm\_north, plot\_size, confidence, physio\_cla, and tnc\_all. The table is sorted by FID in descending order.

FID	Shape	OBJECTID	FID_1	site_id	mapzone	mega_mapzo	state	photos	utm_zone	datum	utm_east	utm_north	plot_size	confidence	physio_cla	tnc_all
3130	Point	1850	380	UT051001LL08	NCPL	UT-3	UT	2	12	NAD27	509219	4247054	10X20	UT-E	DWARF-SHRUBLAN	MATTED SALT BUSH DWARF-SHRUBLAND ALLIANCE
3131	Point	1851	381	UT051001LL09	NCPL	UT-3	UT	2	12	NAD27	508626	4248067	12X18	UT-E	SPARSE VEGETATIO	SPARSE WEEDY DISTURBED SEMI-NATURAL VEGETATION**
3132	Point	7016	6747	UT092900GM09	NCPL	UT-3	UT	2	12	NAD27	496160	4217456	4X5	UT-E	SHRUBLAND	TWO-NEEDLE PINYON - (JUNIPER SPECIES) SHRUBLAND ALLIA
3133	Point	7046	6864	UT100200GM02	NCPL	UT-3	UT	2	12	NAD27	493032	4236507		UT-E	HERBACEOUS	JAMES' GALLETIA SHRUB HERBACEOUS ALLIANCE
3134	Point	7089	6752	UT092900GM14	NCPL	UT-3	UT	2	12	NAD27	511432	4208186	5X5	UT-E	DWARF-SHRUBLAN	MATTED SALT BUSH DWARF-SHRUBLAND ALLIANCE
3135	Point	7090	7061	UT100800GM04	NCPL	UT-3	UT	2	12	NAD27	512469	4206410	3X5	UT-E	SHRUBLAND	SHADSCALE SHRUBLAND ALLIANCE
3136	Point	7091	7067	UT100800GM10	NCPL	UT-3	UT	2	12	NAD27	511894	4207084	3X5	UT-E	SHRUBLAND	BASIN BIG SAGEBRUSH SHRUBLAND ALLIANCE
3137	Point	7092	7068	UT100800GM11	NCPL	UT-3	UT	2	12	NAD27	511558	4208079	5X5	UT-E	DWARF-SHRUBLAN	GARDNER'S SALT BUSH DWARF-SHRUBLAND ALLIANCE
3139	Point	8909	8538	UT071804MM16	NCPL	UT-3	UT	2	12	NAD27	519700	4175522		UT-E	SPARSE VEGETATIO	N/A
3141	Point	3783	3043	UT070701GM02	NCPL	UT-3	UT	2	12	NAD27	529760	4213428	6X15	UT-E	SHRUBLAND	BLACKBRUSH SHRUBLAND ALLIANCE
3142	Point	7067	6743	UT092900GM05	NCPL	UT-3	UT	2	12	NAD27	488411	4235824	5X5	UT-E	SHRUBLAND	MORMON-TEA SHRUBLAND ALLIANCE
3144	Point	8846	8535	UT071804MM13	NCPL	UT-3	UT	2	12	NAD27	522780	4181502		UT-E	SHRUBLAND	N/A
3145	Point	8863	8526	UT071804MM14	NCPL	UT-3	UT	1	12	NAD27	520148	4231356		UT-D	SPARSE VEGETATIO	N/A
3146	Point	8864	8529	UT071804MM17	NCPL	UT-3	UT	2	12	NAD27	519950	4234417		UT-E	SPARSE VEGETATIO	N/A
3188	Point	3748	3614	UT071301LL05	NCPL	UT-3	UT	2	12	NAD27	493149	4238176		UT-E	WOODLAND	RUSSIAN OLIVE FREMONT COTTONWOOD TEMPORARILY FLC
3188	Point	3750	3617	UT071301LL08	NCPL	UT-3	UT	2	12	NAD27	496156	4238041		UT-D	SHRUBLAND	RUBBER RABBITBRUSH SHRUBLAND ALLIANCE
3189	Point	3794	3615	UT071301LL06	NCPL	UT-3	UT	2	12	NAD27	492167	4236236		UT-E	WOODLAND	FREMONT COTTONWOOD TEMPORARILY FLOODED WOODLAND
3190	Point	6972	6863	UT100200GM01	NCPL	UT-3	UT	2	12	NAD27	493425	4236336	4X5	UT-E	SHRUBLAND	TAMARISK TEMPORARILY FLOODED SHRUBLAND ALLIANCE
3194	Point	1843	383	UT051001LL11	NCPL	UT-3	UT	2	12	NAD27	510718	4252376	8X14	UT-E	SPARSE VEGETATIO	SPARSE WEEDY DISTURBED SEMI-NATURAL VEGETATION**



# Search Photos

Using the photo IDs, Look at the photos that intersect your extent map.

Determine if the photo represents or may represent the site you are working on.