

Layer Cutter

The NRCS-MI Layer Cutter can be used to “cookie-cut” a polygon feature layer based on selected polygon graphics or features from another layer. The user may choose to save the features in a new shapefile and/or generate a summary acreage report.

Starting the Layer Cutter

On the NRCS Michigan toolbar, choose **Layer Cutter**.

For information on activating the NRCS-Michigan Toolbar, please refer to the GIS Skill Builder “The NRCS-MI Toolbar”.

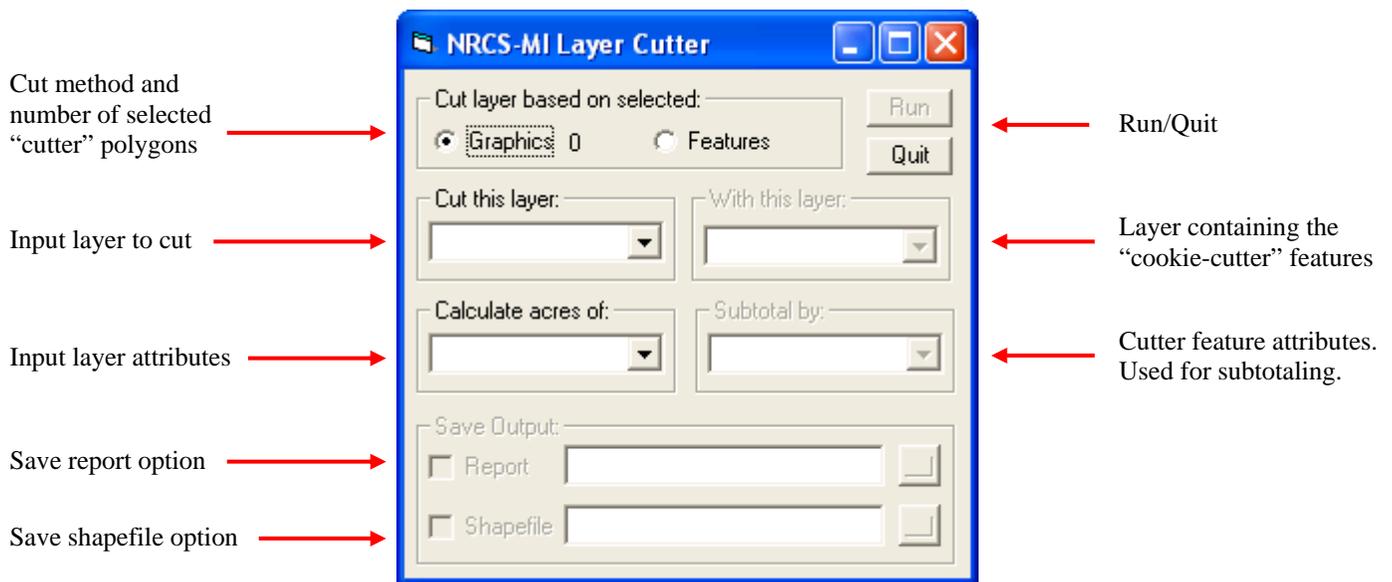


Overview

In this example, we will cut the soil layer based on selected Common Land Unit (CLU) polygons to generate a summary report and save the clipped soils into a new shapefile.

There are several options available while using the Layer Cutter. Most of the options will be “grayed out” until all of the necessary selections have been made.

When first started, the Layer Cutter window will appear similar to this...



Using the Layer Cutter

1. Choose the cut method

Required

Graphics: Cut the input layer based on selected polygon graphics. The number of selected graphics is updated automatically as selections are made with the  **Select Elements** tool.

Features: Cut the input layer based on the selected features in another polygon layer. The number of selected features is updated automatically as selections are made with the  **Select Features** tool.

2. Choose the Layer to Cut

Required

The list contains all of the polygon feature layers in the current data frame.

3. Choose the “Report” Attribute

Required

This is the attribute for which you would like to generate a summary acreage report.

4. Choose the “Cutter” Layer

Required only if cut method is “Features”

The selected features from this layer will be used as the “cookie-cutter”. Choosing a cutter layer automatically activates the ArcMap  **Select Features** tool and makes the chosen “cutter layer” the only selectable layer. Click on the map to select the “cutter” features as you normally would in ArcMap.

5. Choose the “Cutter” Attribute

Required only if cut method is “Features”

This is an attribute of the “cutter” layer which can be used to subtotal the summary report if multiple cutter polygons are selected. Choosing “** SELECTION **” will force subtotalling to not occur, as if all “cutter” polygons were actually one multi-part polygon.

NOTE: If the “cutter” layer is an FSA CLU layer or a PLU layer from Toolkit, and the user chooses to subtotal by field number, the resulting report will automatically subtotal by tract number as well.

Using the Layer Cutter (cont.)

6. Save Report File

 Report C:\temp\My_Report.htm 

Optional

Before running the cutter, you may choose to designate an output file location to save the summary acreage report. Click the Report check box, navigate to the desired folder, and enter a name for the output file. Report files are saved in HTML format and can be viewed with any web browser.

To change the name and location of the output report file, use the  **Browse** button or type the new file name and path into the Report text box.

7. Save Shapefile

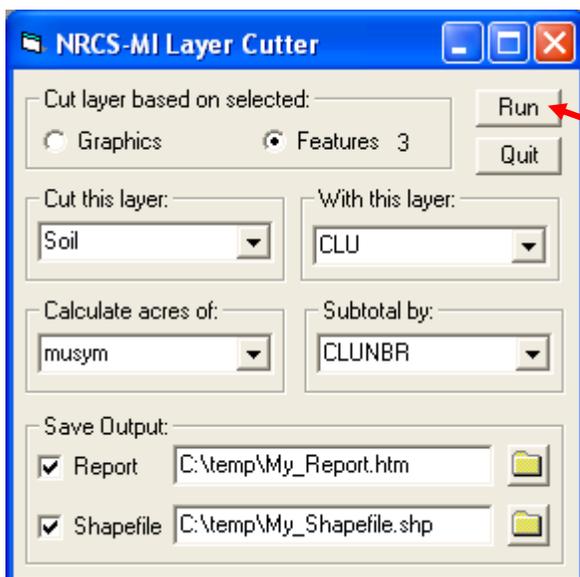
 Shapefile C:\temp\My_Shapefile.shp 

Optional

As with the output report, you may choose to save the clipped features in a separate file. Click the Shapefile check box, navigate to the desired folder, and enter a name for the output file. The resulting shapefile will automatically be loaded into the current ArcMap session as a new layer.

To change the name and location of the output shapefile, use the  **Browse** button or type the new shapefile name and path into the Shapefile text box.

Please refer to “Output File Location” in the “Additional Information” section at the end of this document for tips on saving output reports and shapefiles.



8. Run the Layer Cutter

Carefully review your selections. Click **Run** to perform the cutter process with the criteria specified.

A progress bar will appear at the bottom of your ArcMap session to show the status of the cut and summarize processes.



The Acreage Report

A summary acreage report is generated in HTML format, and will open in your default web browser. If no “save” location was specified, the report will be placed in a temporary file.

1. Cutter attribute

(If cutter layer is a CLU or PLU layer, the tract number is automatically included.)

2. Report attribute

3. Acres

4. Percent of cutter polygon

5. Percent of all cutter polygons

6. Subtotals of each cutter polygon (gray rows)

7. Total acreage of cutter polygons

1	2	3	4	5	
Tract	Land Unit	musyn	Acres	% of Land Unit	% of Total
88888	6	BnB	9.85	72.28%	13.88%
88888	6	BnC	3.78	27.72%	5.33%
99999	6		13.63 ac.	100%	19.21%
99999	2	BnB	21.91	71.41%	30.88%
99999	2	BnC	7.41	24.16%	10.44%
99999	2	Sb	0.66	2.16%	0.93%
99999	2	LaB	0.53	1.73%	0.75%
99999	2	MdA	0.17	0.54%	0.24%
99999	2		30.68 ac.	100%	43.24%
99999	3	BnB	13.9	52.18%	19.59%
99999	3	LaB	5.54	20.78%	7.81%
99999	3	Ch	3.42	12.84%	4.82%
99999	3	WbA	1.93	7.23%	2.72%
99999	3	BnC	1.86	6.97%	2.62%
99999	3		26.65 ac.	100%	37.56%
Total			70.96 ac.		100%

Tract	Land Unit	musyn	Acres	% of Land Unit	% of Total
88888	6	BnB	9.85	72.28%	13.88%
88888	6	BnC	3.78	27.72%	5.33%
99999	6		13.63 ac.	100%	19.21%
99999	2	BnB	21.91	71.41%	30.88%
99999	2	BnC	7.41	24.16%	10.44%
99999	2	Sb	0.66	2.16%	0.93%
99999	2	LaB	0.53	1.73%	0.75%
99999	2	MdA	0.17	0.54%	0.24%
99999	2		30.68 ac.	100%	43.24%
99999	3	BnB	13.9	52.18%	19.59%
99999	3	LaB	5.54	20.78%	7.81%
99999	3	Ch	3.42	12.84%	4.82%
99999	3	WbA	1.93	7.23%	2.72%
99999	3	BnC	1.86	6.97%	2.62%
99999	3		26.65 ac.	100%	37.56%
Total			70.96 ac.		100%

Report Options

1. Use buttons in the upper right corner of the report window to **hide**, **show**, and **close** the report.
2. **Right-click** on the report to print, export to Microsoft Excel, etc.

** Close the report window when finished **

Additional Information

1. Clipping with Graphics

While the preceding example demonstrated clipping based on feature polygons, graphic polygons may also be used by choosing “Graphics” as the cut method. The process is very similar to that explained above, with a few exceptions:

- Clicking “Graphics” as the cut method will automatically activate the ArcMap  **Select Elements** tool which is used to select the “cutter” graphics. Non-polygon graphics will be ignored.
- The “With this layer:” and “Subtotal by:” lists will not be active, since the selected graphics are the “cutter” features instead of features from a layer.
- Subtotals will still appear on the report if multiple cutter graphics are selected. Layer Cutter assigns an incremental number to each polygon graphic based on the order selected.

2. Output File Location

The location and naming of output report and shapefiles should be chosen with care. If you choose to save the output files, please ensure that sensible choices are made for file names and locations so the files can be easily identified and retrieved at a later date.

In the previous example, we saved the output files in “C:\temp”. This is a good location to save temporary files, but a very poor place to save files we might want in the future.

For example, if your cutter scenario is specific to a Toolkit client, you might consider saving the output files in “[TOOLKIT_CLIENT_FOLDER]\Resource_Maps\T999999_soils.htm” and “T999999_soils.shp”.

**** Remember:** Saving the output files is always optional. In many cases, you might only want to run a quick report to print out. In this case, leave the “Save Output:” boxes unchecked.

3. Other Examples (please see report samples on following page)

- Interpretive soil layers generated by the Soil Data Viewer (SDV) may be used as the “layer to cut”. Layer Cutter detects if the input layer was created through SDV and will generate the output based on the interpretive value, instead of the map unit value. For example, one could create a county-wide “Prime Farmland Classification” layer via SDV, and then use Layer Cutter to cut that layer with the county’s “Civil Divisions” layer. This would result in a report containing the acreage and percentage of each Prime Farmland category within each selected township.
- Conservation Security Program (CSP) application rules require that a majority of the offered land falls within the target watershed. This can be determined by cutting the 8-digit hydrologic unit layer with the farm’s land units. In this case, we probably wouldn’t want a subtotal by land unit, so we would choose “** SELECTION **” as the “Subtotal” attribute. The resulting report would treat all of the selected cutter polygons as one, determining the percent of the entire farm in each watershed.

Example #1: Prime Farmland Classification in Selected Townships

NRCS-MI Acreage Report

NAME	FrmldCls	Acres	% of NAME	% of Total
Ovid Twp	Prime farmland if drained	13679.54	59.38%	29.69%
Ovid Twp	Farmland of local importance	5672.11	24.62%	12.31%
Ovid Twp	All areas are prime farmland	2781.82	12.08%	6.04%
Ovid Twp	Not prime farmland	904.12	3.92%	1.96%
Ovid Twp		23037.59 ac.	100%	50%
Victor Twp	Farmland of local importance	10168.14	44.14%	22.07%
Victor Twp	Prime farmland if drained	6828.12	29.64%	14.82%
Victor Twp	All areas are prime farmland	4062.94	17.64%	8.82%
Victor Twp	Not prime farmland	1976.74	8.58%	4.29%
Victor Twp		23035.94 ac.	100%	50%
Total		46073.53 ac.		100%

Example #2: Percent of CSP Offer within Target Watershed

NRCS-MI Acreage Report

SELECTION	HU_S_NAME	Acres	% of SELECTION
Current	Maple River	36.33	50.13%
Current	Shiawassee River	36.14	49.87%
Total		72.47 ac.	100%