

Teaching Assignment: Changes along Fountain Creek, Colorado (1989-2006)

Author: Will Ouimet -- University of Connecticut -- william.ouimet@uconn.edu

OPTIONAL GIS INSTRUCTIONS

Creating and Editing Shapefiles

Draw Toolbar Method

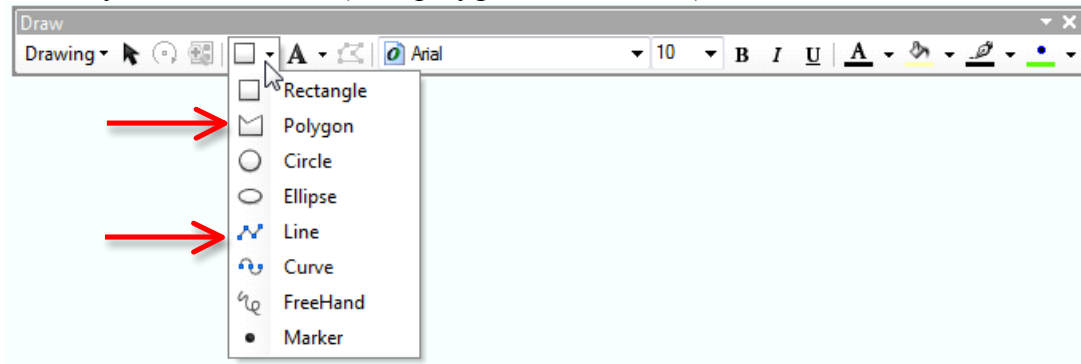
Locate the Draw toolbar on the bottom left portion of the ArcMap, it looks like this:



If it's not there, you need to turn it on:

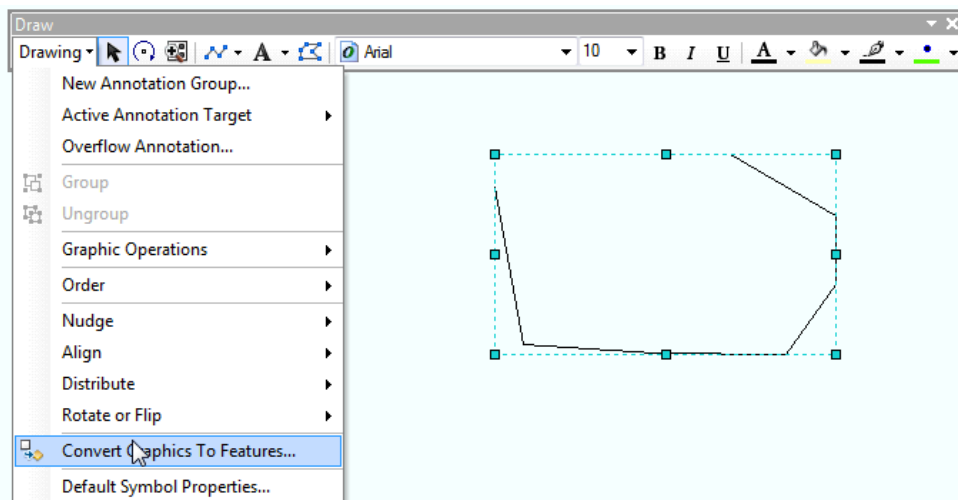
Click the View menu, Toolbars, and then the Draw Toolbar

Decide what you want to draw (line, polygon, marker, etc.):



Draw/trace the feature you want by continually moving the mouse and left-clicking to add points/vertices. When you are finished, double click. The blue 'select' box should appear around your graphic. Click away from the graphic to unselect. Click back on the graphic to re-select.

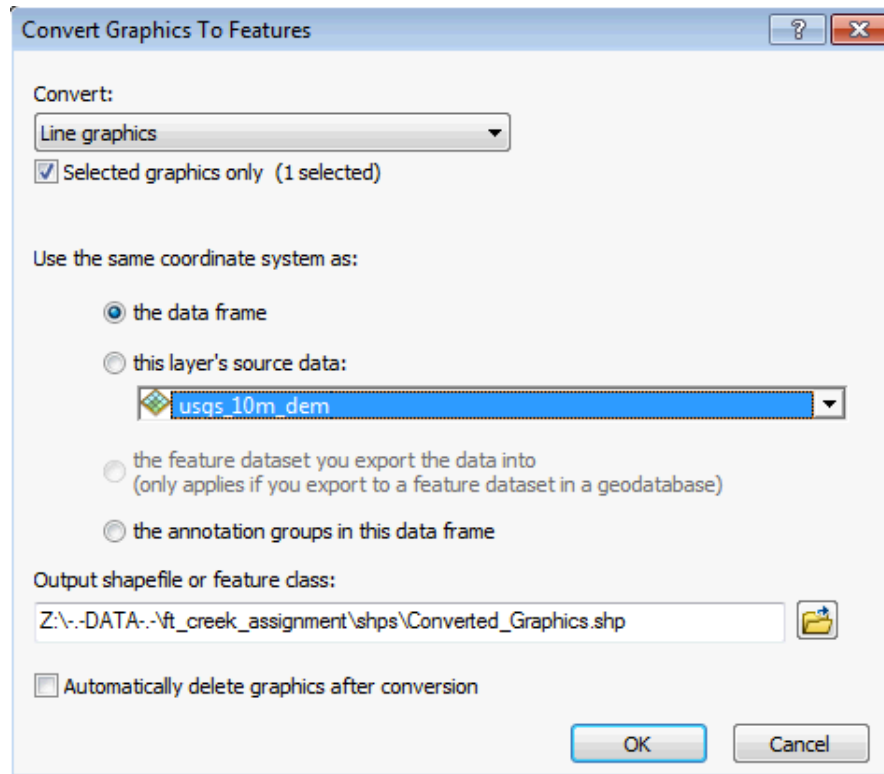
Convert a single graphic (OR multiple graphics while all are selected at the same time) by choosing 'Convert Graphics to Features' in the Draw drop-down menu. See below.



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The following box appears:



- Under the option that says “use the same coordinate system as:” check *this layer’s source data* with the DEM selected.
- Be sure to save the shapefile appropriately!

ArcCatalog and Editor Method

1. Creating a New Shapefile (Points, Polylines, and Polygons)

1. Open ArcCatalog
2. Highlight the folder that will contain your new shapefile.
3. Right-click on the folder and select New > Shapefile.
4. The Create New Shapefile dialog box opens.
 - a. Name the shapefile and select the feature type (Point, Poly, or Polygon) from the drop-down menu.
 - b. Set the Spatial Reference (Projection/Datum) by clicking the Edit button. This opens the Spatial Reference Properties dialog box. Below are two methods to set the spatial reference.
 1. Choose Select > Projected Coordinate Systems > UTM folder > NAD1983 > NAD 1983 UTM Zone 13N.prj > click the Add button > click OK in the Spatial Reference Properties dialog box > click OK in the Create New Shapefile dialog box.

OR

2. Choose Import > navigate to your folder that contains data with the coordinate system already defined (preferably the DEM) > click on the dataset > click the Add button > click OK in the Spatial Reference Properties dialog box > click OK in the Create New Shapefile dialog box.

2. Adding the New Shapefile to the ArcMap Project

1. Open your ArcMap project.
2. Add the new (empty) shapefile to your project by:
 1. File > Add Data

OR

2. Click-on the Add Data icon on the Standard Toolbar in ArcMap.

3. Starting, Saving, and Stopping the Editing Session

1. Open the Editor Toolbar from View > Toolbars > Editor.
2. From the Editor drop-down menu select Start Editing. This opens the Start Editing dialog box.
3. Highlight the folder path of the shapefile/s that you will be editing > Click OK to close the dialog box.
4. Save your edits during the edit session by selecting Save Edits from the drop-down menu on the editor toolbar.
5. Stop the editing session by selecting Stop Editing from the drop-down menu on the editor toolbar. The Save edits dialog box opens. Select Yes, No, or Cancel.

Note: It's best to edit one shapefile at a time and remember to save your edits often.

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Point Shapefiles

1. **Create a new point**
 - a) Editor Toolbar > Task: Create New Feature; Target: point shapefile
 - b) Choose the Sketch Tool (Pencil) from the tool palette
 - c) Click once to enter a point on your map.

Polyline Shapefiles

1. **Create a new polyline**
 - a) Editor Toolbar > Task: Create New Feature; Target: polyline shapefile
 - b) Choose the Sketch Tool (Pencil) from the tool palette
 - c) Click once to start the polyline; click once to add each vertex; double-click to finish the polyline.
2. **Edit a polyline**
 - a) Editor Toolbar > Task: Modify Feature; Target: polyline shapefile
 - b) Choose the Edit Tool (Arrow) on the Editor Toolbar.
 - c) Click on the line to modify. The line is now highlighted with the vertices shown.
 - d) Hit the delete key to delete the line.
 - e) Click-n and drag a vertex to a new location to move a vertex.
 - f) Right-click on the line to add a vertex.
 - g) Mouse-over and right-click on a vertex to delete the vertex.
 - h) Click somewhere on the map (not on the line) to deselect the line

Polygon Shapefiles

1. **Create a new polygon**
 - A. Single Polygon
 1. Editor Toolbar > Task: Create New Feature; Target: polygon shapefile
 2. Choose the Sketch Tool (Pencil) from the tool palette
 3. Click once to start the polygon; click once to add each vertex; double-click to finish the polygon.