Editing the Event Geodatabase in ArcMap

Description

After the creation of the incident geodatabase, a GISS follows a *general* method of work steps to populate the GDB with point, line and polygon features. Those steps include creating, editing, attributing, and doing analysis (e.g., calculate acres). These are the main data components, in the general order of processing:

Fire Polygon
- Create and/or edit the fire polygon
- Add attributes
- Calculate fire polygon acres

Fireline
- Create from fire polygon
- Split and/or attribute

Division and Branch Breaks
- Create point features
- Rotate

Other point features
- Create, attribute
- Calculate coordinates

Other line features
- Create, attribute

This how-to document covers **ArcMap** tools used to create and edit point, line and polygon feature data.

Target Audience

GIS Specialists

Objectives

Detail the methods used to edit the event geodatabase feature classes in ArcMap.

GSTOP Reference

Chapter 2: File Naming and Directory Structure, Chapter 5: Map Symbology

11/15/2017

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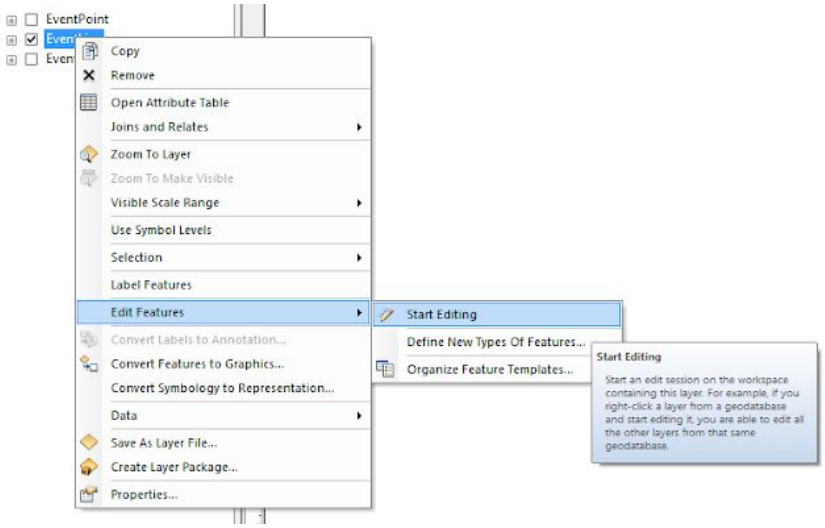
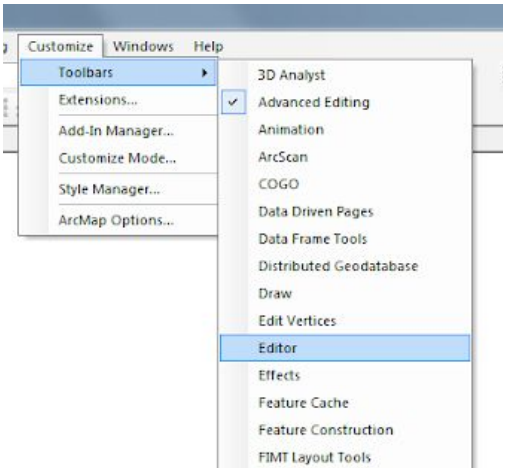
General best practices and methods for editing ***all*** feature classes:

1. Turn on the event geodatabase feature class to be edited by checking the box in front of the layer name in the Table of Contents.

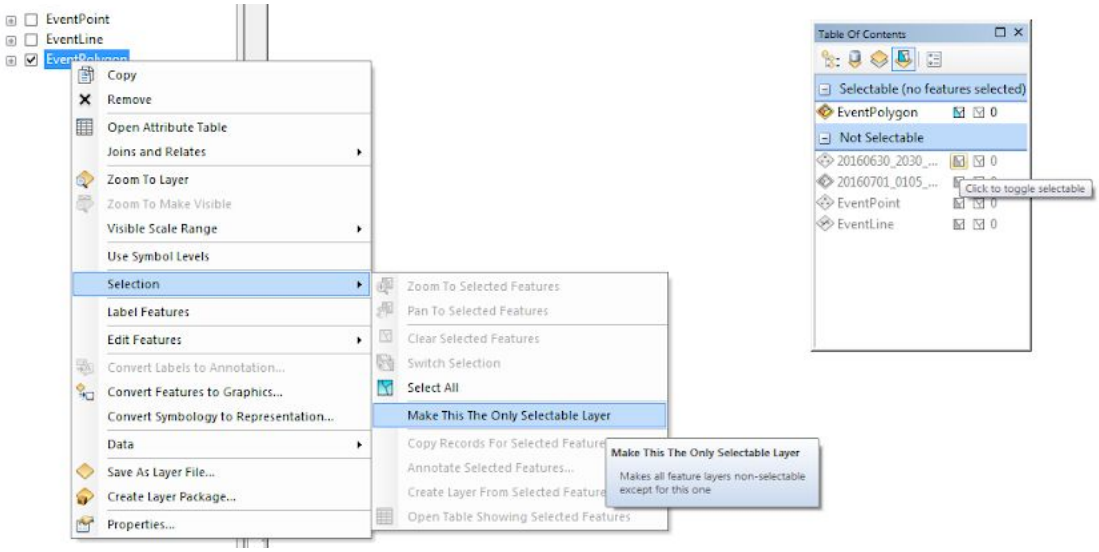
2. Start an edit session by right clicking on the event geodatabase feature class, selecting Edit Features and Start Editing.



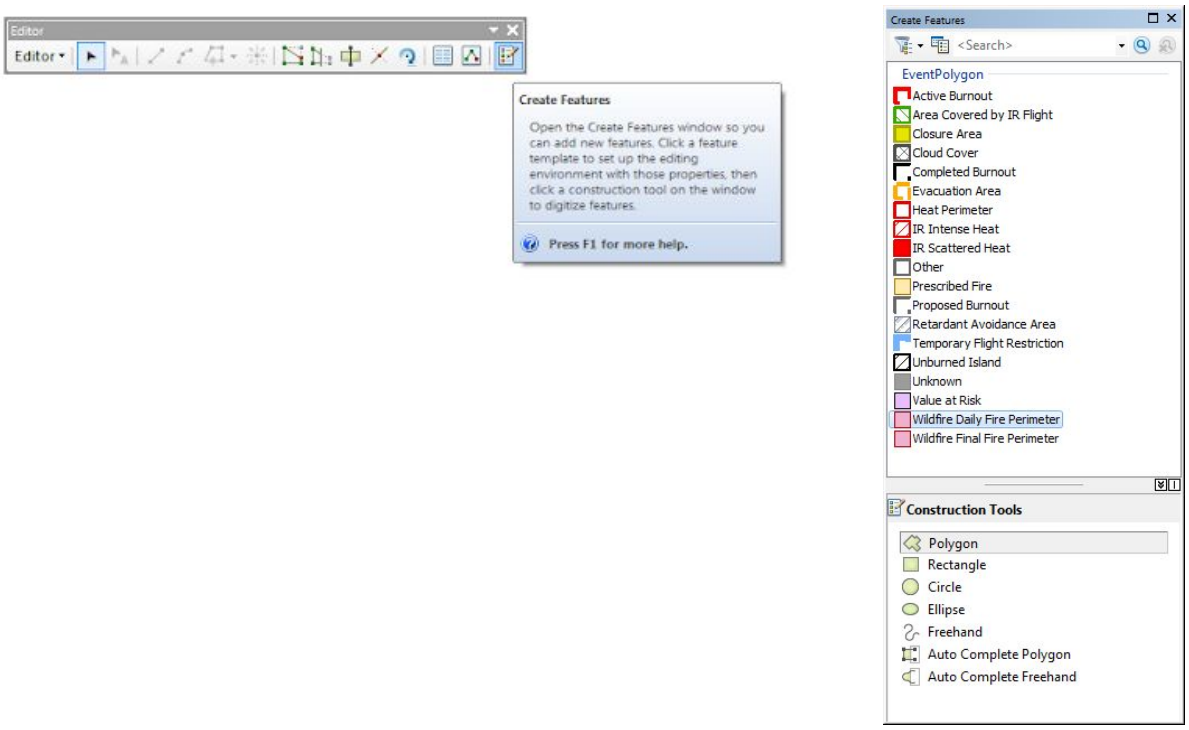
3. Display the Editor toolbar. Go the Customize menu on the Main toolbar and check the box in front of Editor.



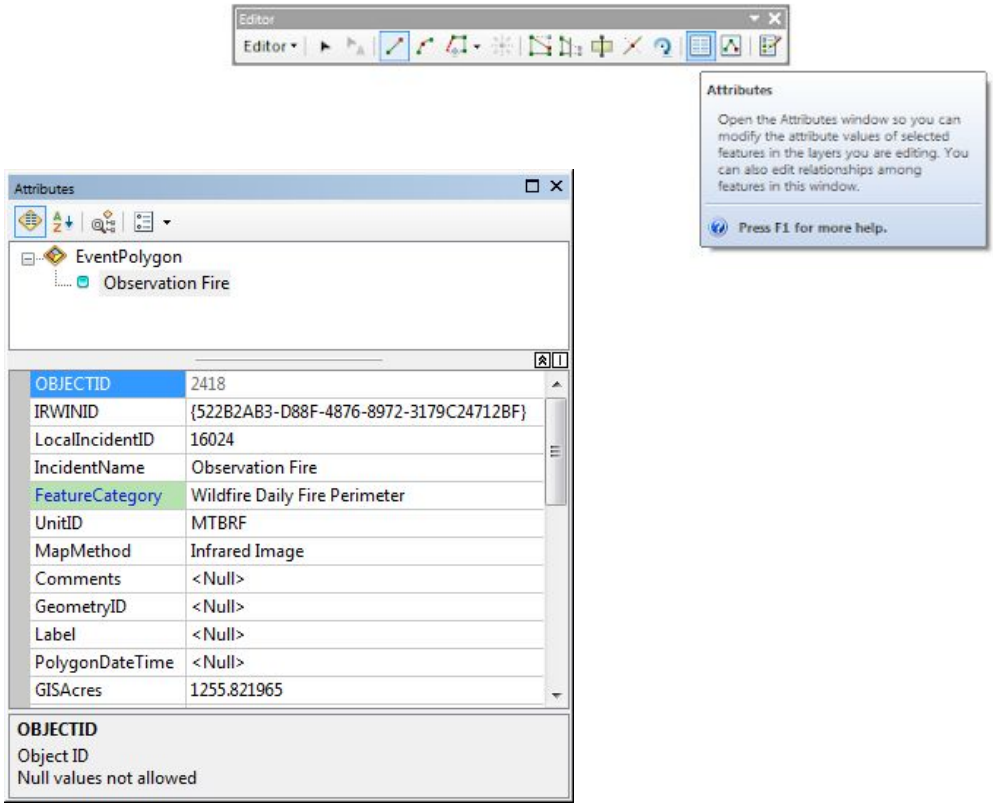
4. Steps that may be necessary:
    a. Make the layer you are editing the only selectable layer by right clicking on the layer in the Table Of Contents and selecting Selection – Make This The Only Selectable Layer or by using the List By Selection button in the Table Of Contents and making the appropriate feature classes selectable and other feature classes not selectable.



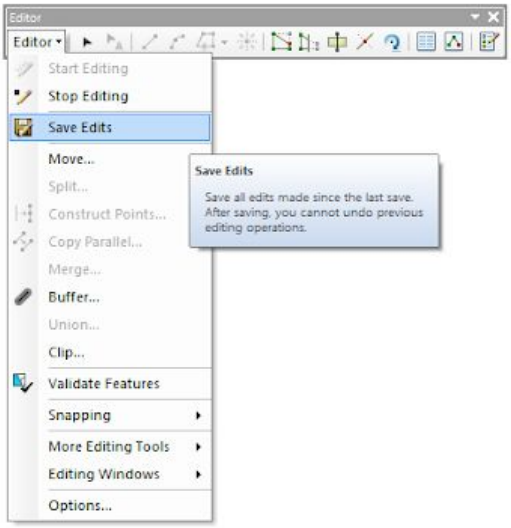
    b. Open the Create Features dialog box from the Editor toolbar.



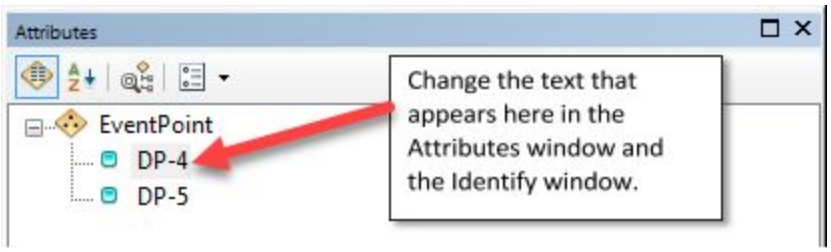
c. Use the Attributes window from the Editor toolbar to quickly edit attributes.



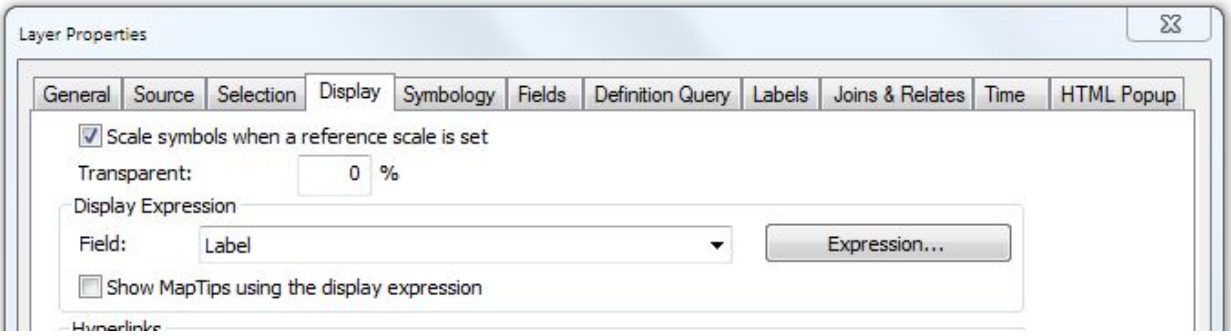
5. Save your edits frequently by using the dropdown menu on the Editor toolbar and selecting Save Edits.



Change the field that displays in the Attribute window and the Identify window



1. Go to the Layer Properties window for a layer by right clicking it in the table of contents and selecting Properties.
2. Go to the Display tab and change the Display Expression Field to Label



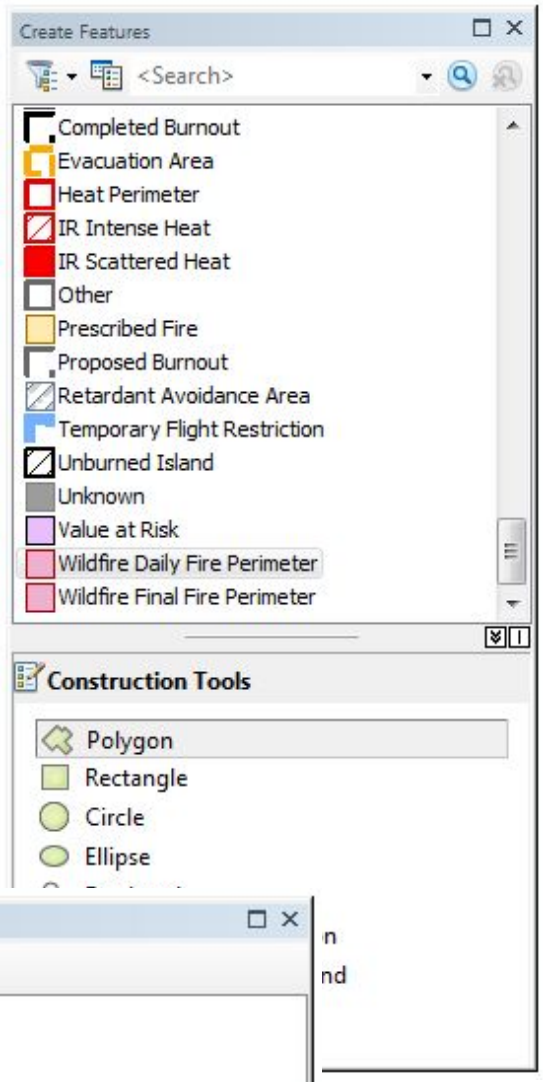
Fire Polygon

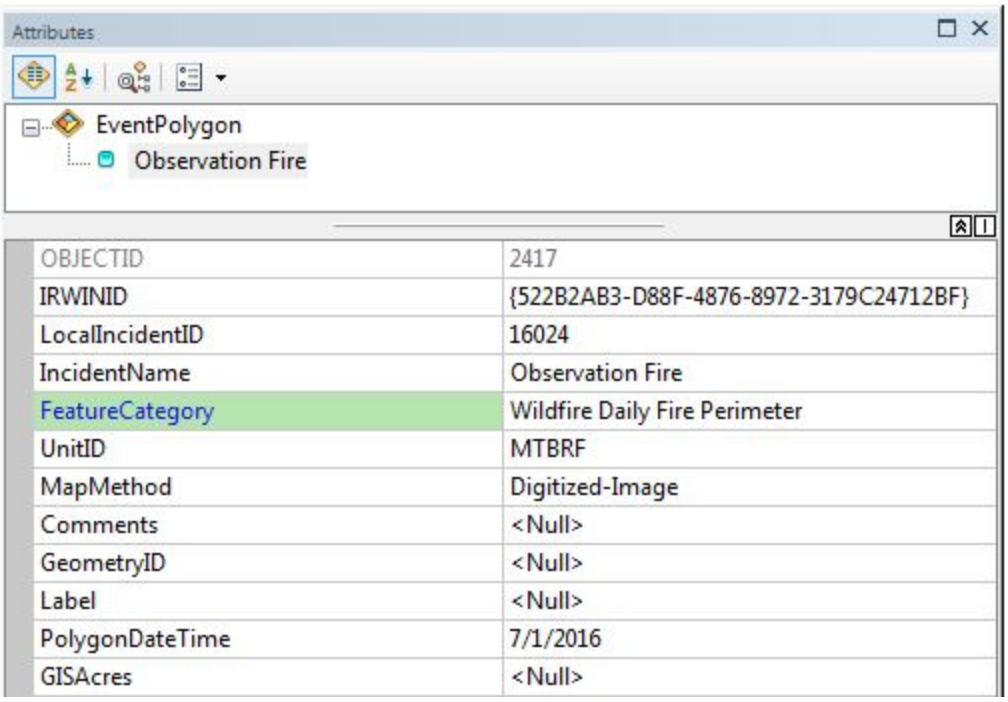
Digitize a new fire polygon

1. Open the Create Features dialog box from the Editor toolbar.

2. In the top pane of the dialog box choose Wildfire Daily Fire Perimeter, then in the Construction Tools box choose Polygon.
3. The cursor will change to a crosshairs tool, digitize the fire perimeter, double clicking or pressing F2 to finish the polygon.
4. Click on the Attributes button on the Editor toolbar to open the Attributes window.

5. Fill in the appropriate values in fields, such as MapMethod, PolygonDateTime, FeatureAccess and FeatureStatus.
6. Save your edits.

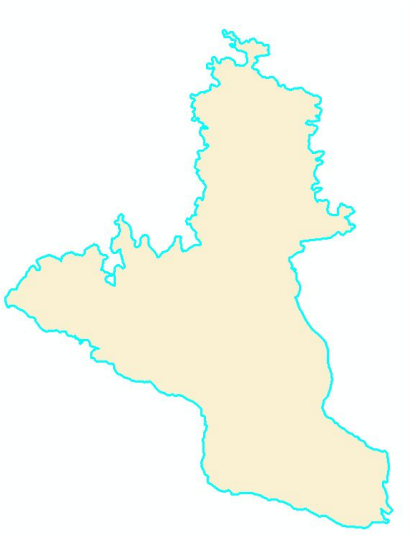


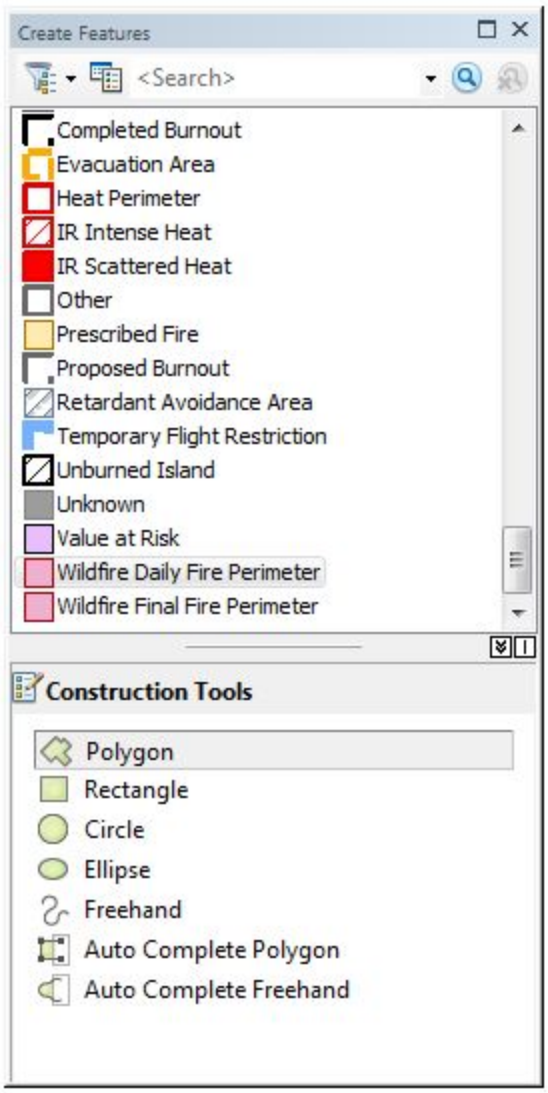


Create a new fire polygon from another layer.

1. Add the layer containing the fire polygon to ArcMap.
2. Click on the Edit Tool on the Editor toolbar.
3. Select the fire polygon with the Edit Tool.
4. Click on the Create Features button on the Editor toolbar to open the Create Features dialog box.

5. In the top pane of the dialog box choose Wildfire Daily Fire Perimeter, then in the Construction Tools box choose Polygon.





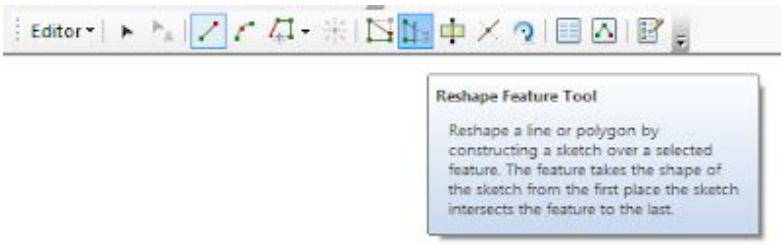
6. The cursor will change to a crosshairs tool, right click with the crosshairs tool and Select **Replace Sketch**. Press F2 to finish the sketch. NOTE: Instead of using Copy/Paste, use Replace Sketch to maintain attributes.

7. Click on the Attributes button on the Editor toolbar to open the Attributes window.

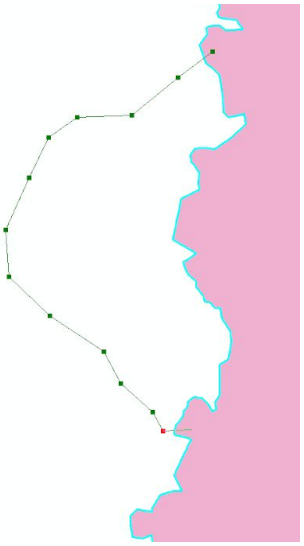
8. Fill in the appropriate values in fields, such as MapMethod, PolygonDateTime, FeatureAccess and FeatureStatus.
9. Save your edits.

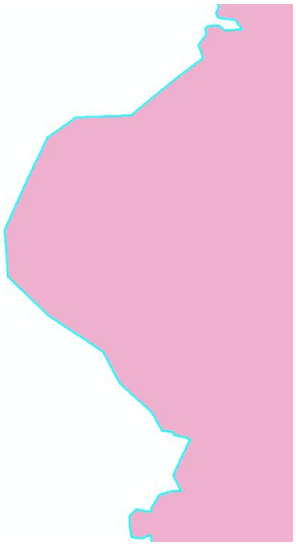
Reshape a fire polygon by digitizing.

1. Click on the Edit Tool on the Editor toolbar.
2. Select the fire polygon with the Edit Tool.



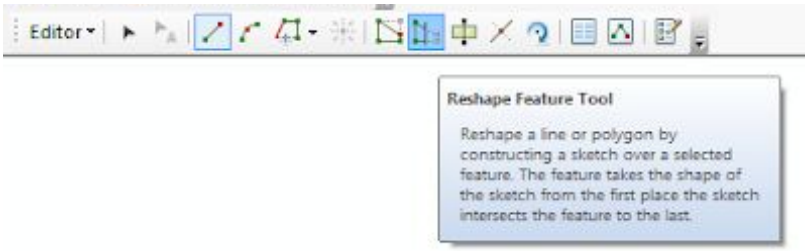
3. Select the Reshape Feature Tool from the Editor toolbar.
4. Use the crosshairs tool to add or remove area from the fire polygon, by crossing the current fire polygon (or snapping to it) at the beginning and end of the line you are digitizing. Double click or press F2 to finish the sketch.
5. Click on the Attributes button on the Editor toolbar to open the Attributes window.
6. Change the attributes as needed.
7. Save your edits.





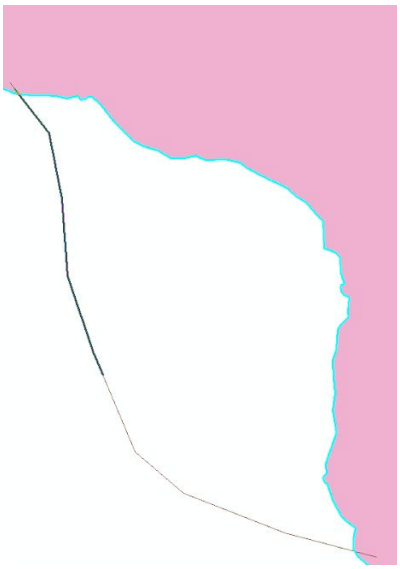
Reshape a fire polygon by tracing a line from another layer

1. Add the layer containing the new line to be used as part of the fire polygon to ArcMap.
2. Click on the Edit Tool on the Editor toolbar.
3. Select the fire polygon with the Edit Tool.
4. Select the Reshape Feature Tool from the Editor toolbar.



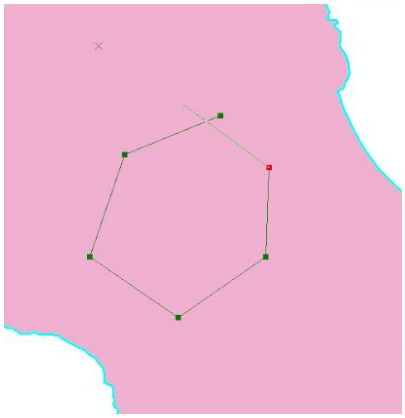
5. With the Reshape Feature Tool selected, select the Trace Tool.
6. Using the crosshairs tool click on one end of the line you want to trace. To add to the polygon, start your line inside the fire polygon, then cross to outside the polygon, dragging the cursor along the line and double clicking at the opposite end of the line, where it crosses back to the inside of the fire polygon.
7. Click on the Attributes button on the Editor toolbar to open the Attributes window.
8. Change the attributes as needed.

9. Save your edits.



Create an island

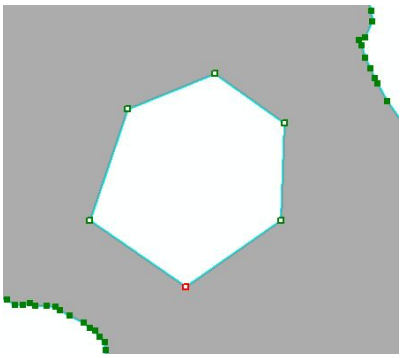
1. Using the Edit Tool from the Editor toolbar select the fire polygon that you want to create an island in.
2. Select the Cut Polygons Tool from the Editor toolbar, then select the straight segment tool .
3. Digitize the island, being sure to close the sketch by crossing the end of the sketch over it's beginning and double clicking or pressing F2 to finish the sketch.
4. Remove the island by using the Edit Tool to select just the island and press the delete key on your keyboard.
5. Save your edits.



Remove an island

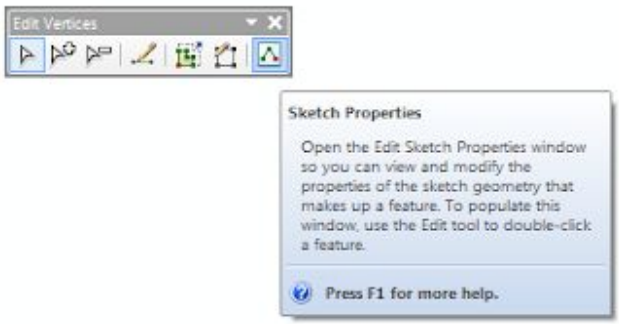
Remove an island by deleting the island's vertices (use when the island is small and not very close to the fire polygon's perimeter)

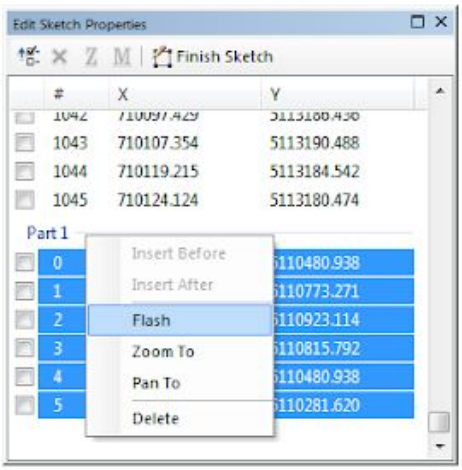
1. Using the Edit Tool from the Editor toolbar double click the fire polygon containing the island. (An Edit Vertices toolbar will appear and your cursor will change from the black Edit Tool to a white Modify Sketch Vertices tool.)
2. Using the Modify Sketch Vertices tool, select all the vertices that make up the island by stretching a box around the island. (If you could not select all of the island's vertices due to the fire polygon vertices being nearby, then select a group of the island's vertices.)
3. Press the delete key on your keyboard to delete the selected vertices. (Repeat for another group of vertices if you could not select all of them at once.)
4. Save your edits.



Remove an island using the Edit Sketch Properties window (use when the island is large or very close to the fire polygon's perimeter)

1. Using the Edit Tool from the Editor toolbar double click the fire polygon containing the island. (An Edit Vertices toolbar will appear and your cursor will change from the black Edit Tool to a white Modify Sketch Vertices tool.)
2. Select the Edit Properties button from the Edit Vertices toolbar. An Edit Sketch Properties box will appear.



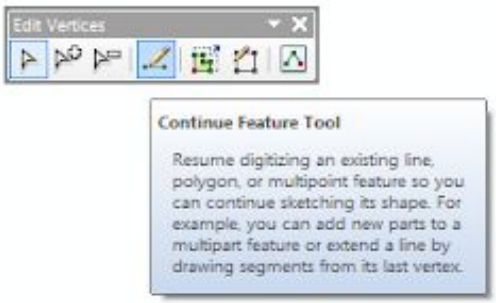


3. In the Edit Sketch Properties box, look for the "Part" that contains the vertices of the island. Confirm that you found the correct part by right clicking on the Part number and selecting Flash. If you have selected the correct Part, then the vertices of the island will flash.
4. Once you have found the correct Part, right click on the Part number and select Delete.
5. Save your edits.

Add the perimeter of a spot fire to the fire polygon by digitizing or tracing

1. Double click on the fire polygon to show its vertices and bring up the Edit Vertices toolbar.
2. Select the Continue Feature Tool from the Edit Vertices toolbar.

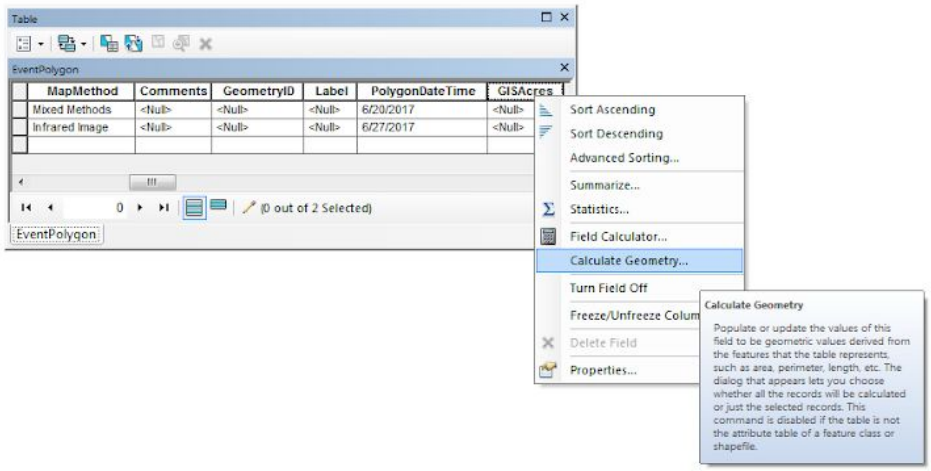
   (Using the Continue Feature Tool will add the shape of the spot fire to the existing fire polygon feature, resulting in a multipart feature with a single record in the attribute table.)



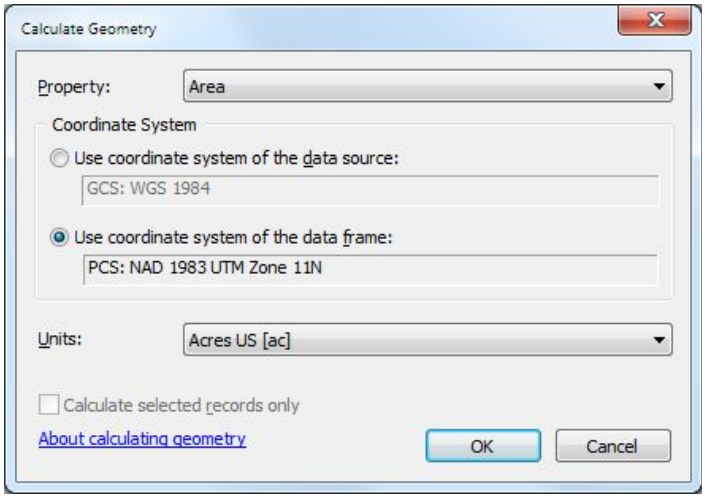
3. Digitize the perimeter of the spot fire, double clicking or press F2 to finish the sketch.
   a. If you have a line or polygon feature, such as from a GPS unit, you can select the Trace tool from the Editor toolbar (after having selected the Continue Feature Tool) and trace the line or polygon to add it to your fire polygon.
4. Save your edits.

Calculate Acres for the Fire Polygon

1. Open the attribute table for the EventPolygon feature, by right clicking on the layer in the table of contents and selecting Open Attribute Table.
2. Right click on the GISAcres field and select Calculate Geometry



3. Under Property select Area.
4. For the Coordinate System select Use coordinate system of the data frame (***You must have already set the data frame to the local projected coordinate system before calculating acres***).
5. Under Units select Acres US



6. Make sure that the checkbox for Calculate selected records only is appropriately checked or unchecked.
7. Click OK.
8. Save your edits.

Fireline

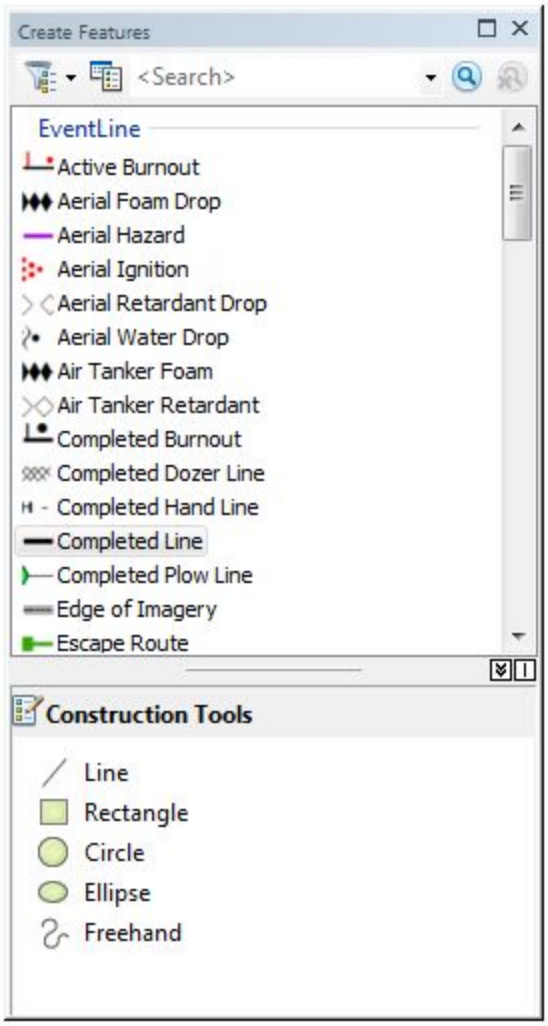
Create Fireline by copying the Fire Polygon to the EventLine feature class

1. Select the fire polygon.
2. From the Main toolbar click Copy and then Paste.

3. In the Paste dialog box select EventLine as the Target.
4. Open the attribute table for the EventLine feature and change the Feature Category to Uncontrolled Fire Edge or another appropriate category.
5. Save your edits.

Create Fireline by digitizing

1. Click on the Create Features button on the Editor toolbar to open the Create Features dialog box.
2. In the top pane of the dialog box choose the applicable fireline template, then in the Construction Tools box choose Line.
3. The cursor will change to a crosshairs tool, digitize the fire perimeter, double clicking or pressing F2 to finish the line.
4. Save your edits.



Create Fireline by tracing another feature

1. Add the layer containing the fireline you want to trace to ArcMap.
2. Click on the Create Features button on the Editor toolbar to open the Create Features dialog box.

3. In the top pane of the dialog box choose the applicable fireline template, then in the Construction Tools box choose Line.
4. Click on the Trace tool from the Editor toolbar.

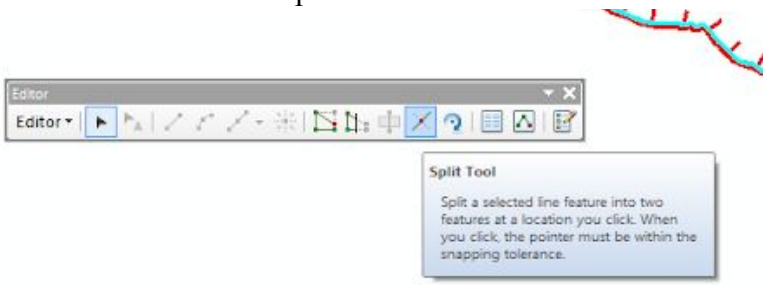
5. The cursor will change to a crosshairs tool, click on the end of the line where you want to start tracing it, drag your cursor along the line, double click or press F2 to end the line.
6. Save your edits.

Flipping the Fireline (if the Uncontrolled Fire Edge hash marks are facing out)

1. Select the portion of the fireline that needs to be flipped.
2. Right click on the line and select Edit Vertices. (Or double click the line segment.)
3. Right click on the line and select Flip.
4. Save your edits.

Split a Fireline

1. Select the fireline to be split.
2. From the Editor toolbar choose the Split Tool.



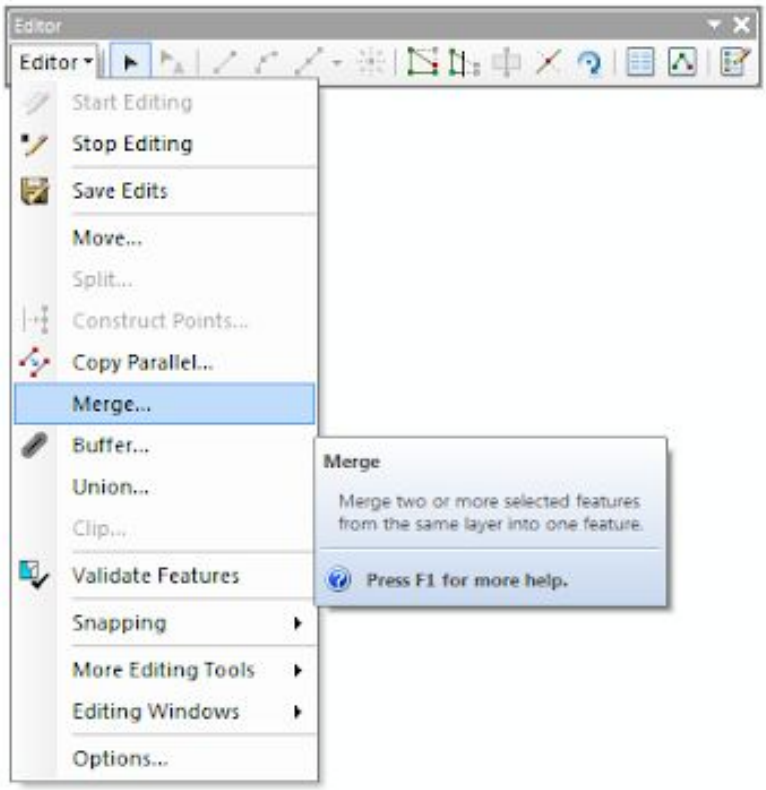
3. Using the Split Tool, click on the line where the line needs to be split.
4. Using the Attributes window assign appropriate Feature Category to each new line and assign other attributes as appropriate.
5. Save your edits.

Separate the Fireline of an island or spot fire from the Fireline of the main fire

1. Turn on the Advanced Editing toolbar, from the Customize menu on the Main toolbar or by right clicking on the grey area next to your docked toolbars.
2. Select the island or spot fire fireline.
3. Select Explode Mulitpart Features from the Advanced Editing toolbar.
4. Save your edits.

Join (Merge) Firelines

1. Select adjoining firelines.
2. On the Editor toolbar use the dropdown menu and choose Merge.

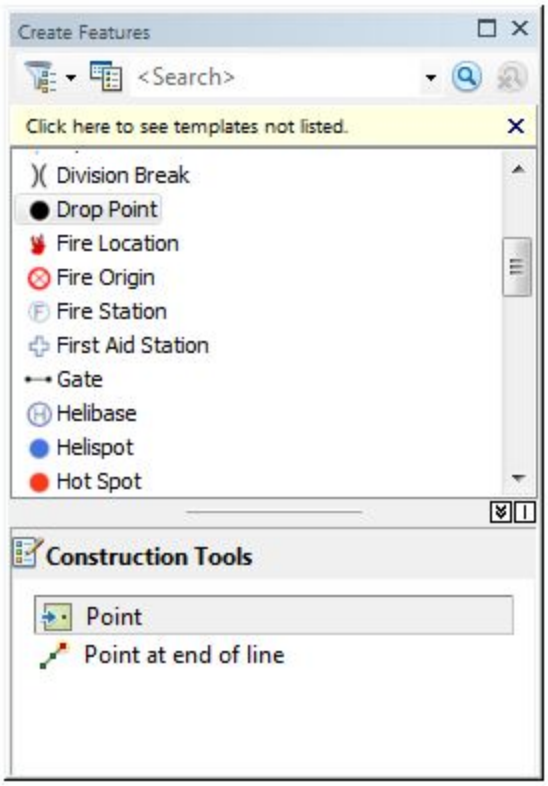


3. In the Merge dialog box choose the line whose attributes you want to keep. (The respective lines will flash when you click on one of the selections in the Merge dialog box.)
4. Click OK.
5. Using the Attributes window assign new attributes as appropriate.
6. Save your edits.

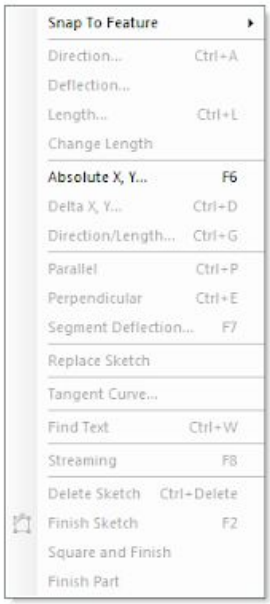
Division and Branch Breaks (and other point features)

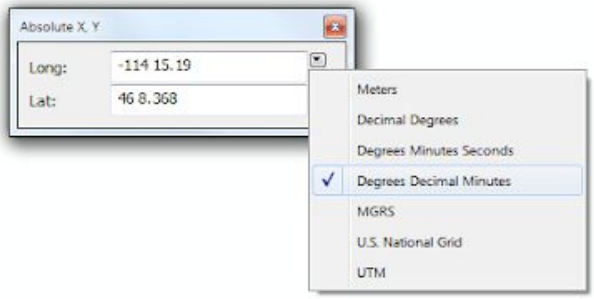
Create Points by digitizing or from X,Y coordinates

1. Click on the Create Features button on the Editor toolbar to open the Create Features dialog box.
2. In the top pane of the dialog box choose the applicable EventPoint template, then in the Construction Tools box choose the Point Tool.



3. The cursor will change to the symbol of your point type, digitize the new points by clicking the location for the feature on the map or if you have coordinates for the point, follow steps a through d.
   a. If you have X,Y coordinates for the point location, right click on the map and choose Absolute X,Y… from the context menu.





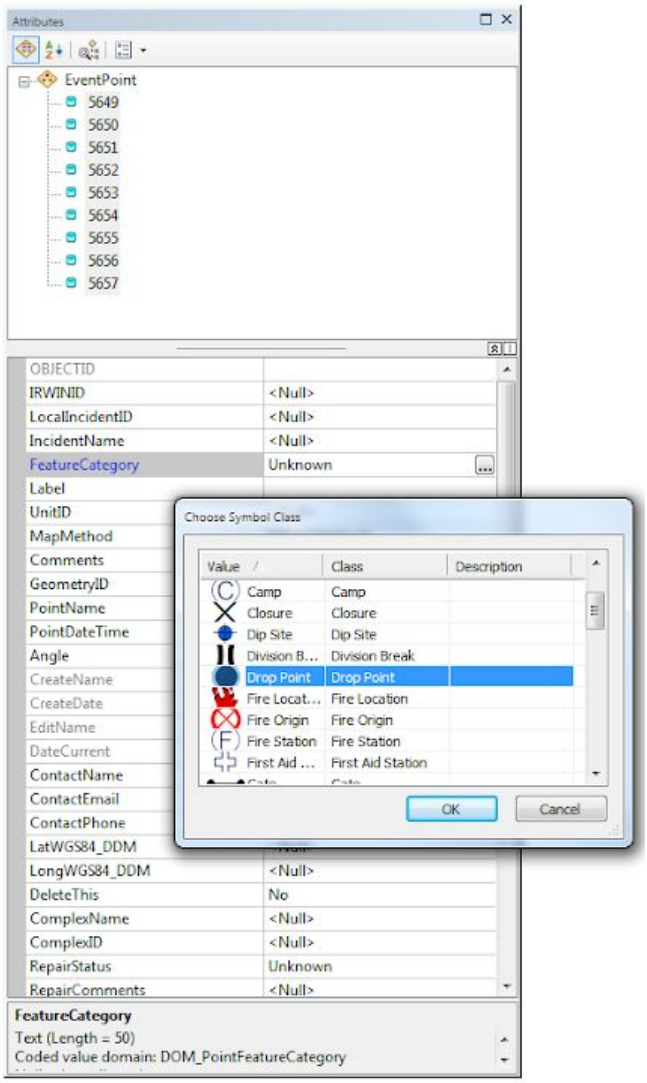
   b. Use the dropdown arrow to select the format of the coordinates.
   c. Type the coordinates into the Absolute X,Y dialog box.
   d. Press Enter on your keyboard. The point will be created at the coordinates that you entered.
4. Save your edits.

Copying Points

1. Add the layer containing the points you want to copy to ArcMap.
2. Select the points you want to copy (on screen with the Select Features Tool or from the attribute table).
3. From the Main toolbar click Copy and then Paste.

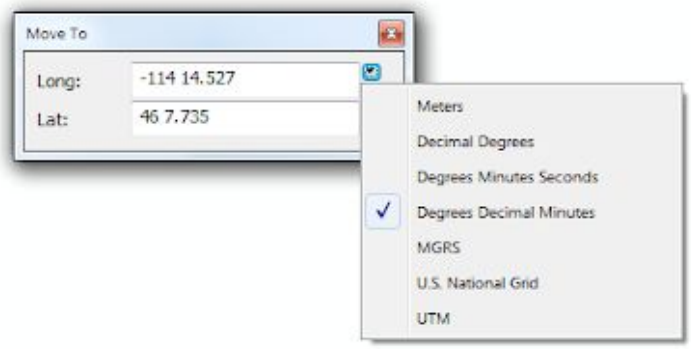
4. In the Paste dialog box select EventPoint as the Target.
5. Click on the Attributes button on the Editor toolbar to open the Attributes window.

6. Change the FeatureCategory of the points to the appropriate values.
    a. If the points are all of different categories, select a point in the top pane of the Attributes dialog box and set the FeatureCategory.
    b. If several or all of the points are of the same type, then select all the points of that type in the top pane of the Attributes window, then set the FeatureCategory.
7. Save your edits.



Move an existing point by digitizing to known coordinates

1. Select the point using the Edit Tool from the Editor toolbar
2. Hover the cursor over the selected point, click then drag the point to the new location or if you have coordinates for the new location follow steps a through c.
    a. Double click the selected point. The cursor will change to a square with four arrows around it.
    b. Right click on the point and select Move To…
    c. Use the dropdown arrow to select the format of the coordinates.

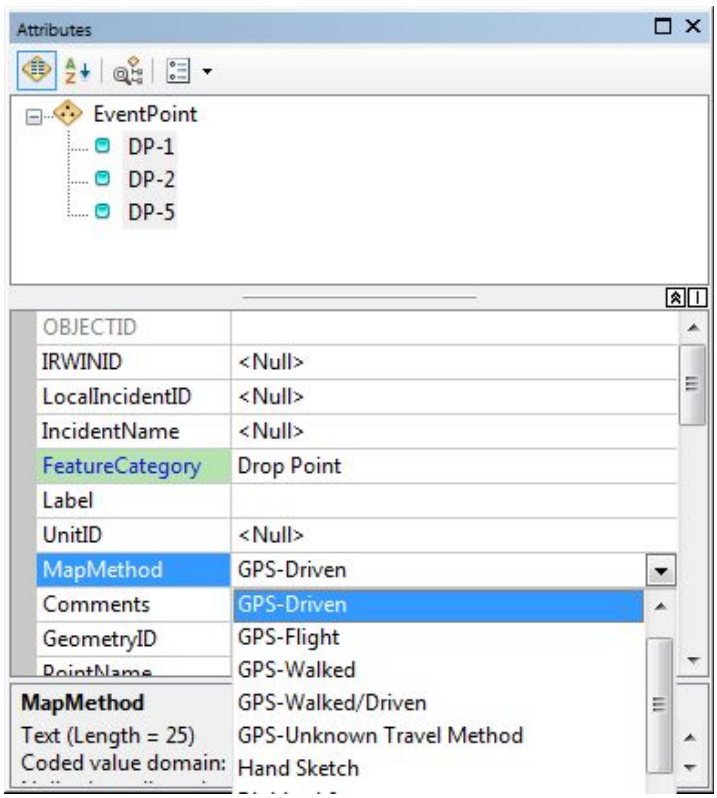


    d. Type the coordinates into the Move To dialog box.
    e. Press Enter on your keyboard.
3. Save your edits.

Use the Attributes Window to populate values for many features at once

1. Click on the Attributes button on the Editor toolbar to open the Attributes window.

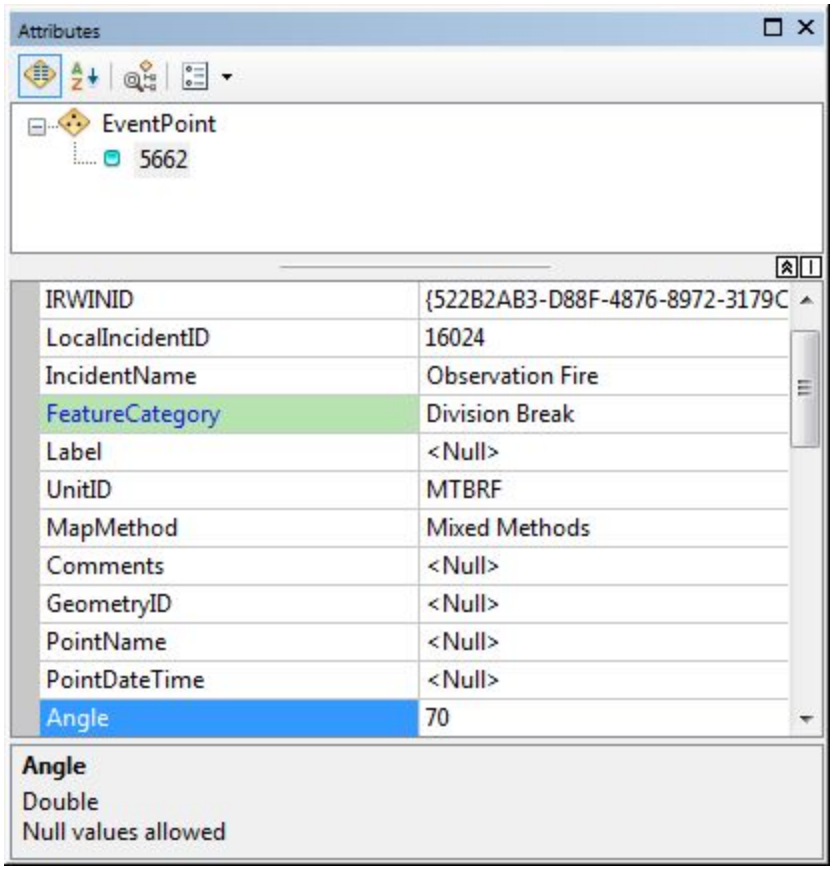
2. In the top pane of the Attributes window, click the layer name to edit all the features or select only the features the that you need to populate fields with the same values.
3. Fill in the appropriate values for the fields you need to populate. When multiple features are selected, fields that are blank indicate that there are at least 2 different values for different features while fields that display a value indicate all features have that same value.



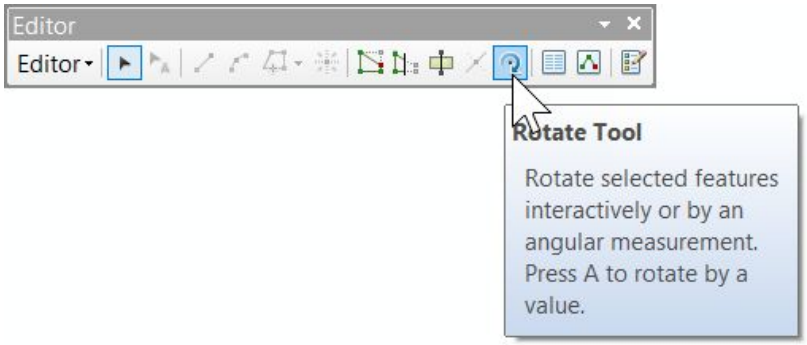
4. Save your edits.

Rotate point symbols (division breaks, branch breaks, spot fires)

1. First, create the point feature to be rotated.
2. Select the point to be rotated.
3. Open the Attributes window from the Editor toolbar.
4. Type the degrees of rotation into the Angle attribute field. (The rotation by angle option is set up in the layer files, but if it needs to be set for a feature class, it is done in the Layer Properties dialog box. To do this go to the Symbology tab, click on the Advanced button and click on Rotation.)

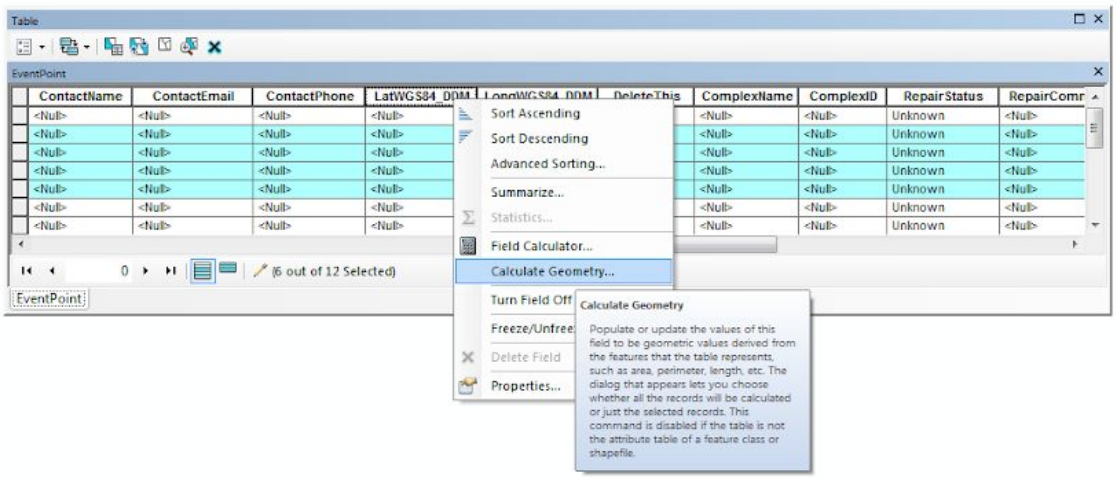
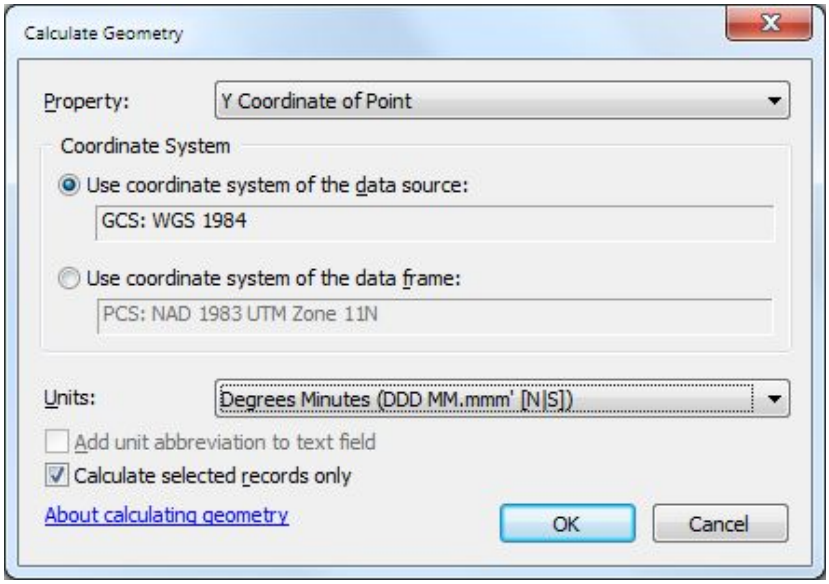


Alternatively, use the rotate tool on the Edit toolbar.



Calculate Latitude and Longitude for EventPoint features

1. Open the attribute table of the EventPoints feature class.
2. Select the EventPoints that will have their coordinates calculated. (If none are selected, then all of them will be calculated.)



3. Right click on the LatWGS84_DDM field header in the attribute table and select Calculate Geometry.
4. For the Property dropdown choose Y Coordinate of the Point, select Degrees Minutes (DDD MM.mmm'[N|S]) and click OK.
5. Repeat for the Longitude, by right clicking on the LongWGS84)DDM field header, choosing X Coordinate of the Point and selecting Degrees Minutes (DDD MM.mmm'[W|E]).
6. Save your edits.