

EXERCISE 3

Editing – Spatial Edits

Introduction

In this exercise you will use ArcGIS Pro to complete common editing tasks like creating new features and modifying existing features.

Objectives

- Prepare the edit-environment using settings typical for many edits done in ArcGIS Pro
- Learn common edit processes for point, line, and polygon features

Required Data:

- **ArcGISProEditing.zip**– zipfile containing all data for the course.

Prerequisites

- Install ArcGIS Pro on local computer.
- Completed the GTAC “Arc Pro for ArcMap Users” class or equivalent experience.
- Copy the data to your workspace and unzip.



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Table of Contents

Part 1: Prepare Map for Editing.....	4
Part 2: Preparing the Edit Environment.....	6
Part 3: Delete and Add Points.....	12
Part 4: Line Edits Splitting a Line.....	19
Part 5: Line Edits – Create and Merge Lines	22
Part 6: Polygon Edits – Edit and Merge Polygon	27
Part 7: Polygon Edits – Reshape a Polygon.....	34
Part 8: Polygon Edits – Auto Complete Tool.....	38

DISCLAIMER: The goal of these exercises is to provide various editing techniques to help you become familiar with the ArcGIS Pro interface. The data management techniques used in the exercises provide examples of how to plan, create, edit, and document any type of resource data to improve effectiveness, efficiency, and data integrity. Neither the data nor the workflows in these exercises represent actual Timber Sale protocols used in the Forest Service. The exercise scenarios use original data from an actual past timber project on the Black Hills National Forest, however it has been manipulated for this training.

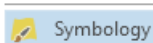
Part 1: Prepare Map for Editing

The goal for this exercise is to refine the data created for the Dome timber sale from the FSveg data. These updates will require both spatial and attribute edits. The scenario for this exercise continues with the Silviculturist finalizing the boundaries for the proposed timber sale as well as planning the roads to use and where the landing sites for the logs will be. We have a good start on the data, but now we need to examine the units and maybe tweak the boundaries according to logistics. The list below spells out the editing tasks you will complete.

- Delete a Landing Site point feature
- Digitize two missing Landing Site point features
- Split an existing road feature and delete an incorrect road segment
- Digitize missing road segment and merge into existing road feature
- Merge two Timber Sale polygons
- Reshape a Timber Sale polygon and snap the edge to a road
- Create a new adjacent polygons with the Auto-Complete Features tool and trace a road

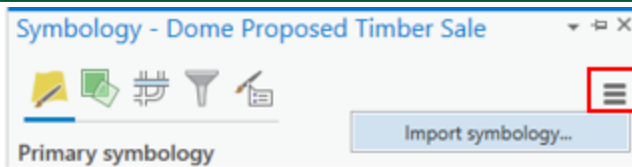
IMPORTANT: Forest Service GIS data (e.g., Roads, Streams), usually have edit procedures in place that GIS editors are expected to follow to ensure data integrity and quality. During this exercise, we will be using our own copy of the data and will ignore any applicable corporate-level edit procedures, since our goal is to learn how to make general edits in ArcGIS Pro, not teach dataset specific procedures. In real projects, before you edit GIS data always talk with your GIS Coordinator about any specific editing requirements for each Layer.

1. If necessary, open the ArcGIS Pro project **TimberPlanningBHNF.aprx** project.
2. In the Contents pane, right-click on DomeProposedTimberSale and **open the Symbology pane.**

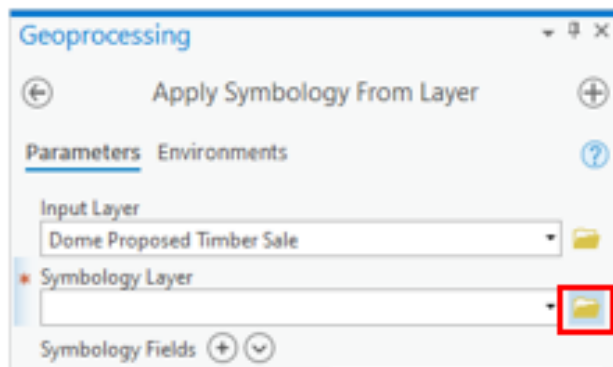


We want to see the layer symbolized using the Activity attributes we entered in the last lesson. In this scenario we will use a Layer File our GIS Specialist helped create with the desired colors. Layer files are useful in that you can save time whenever you start a new project and want to use the same symbology for a layer, you don't have to manually pick the colors. Also, Layerfiles can help ensure consistency between maps.

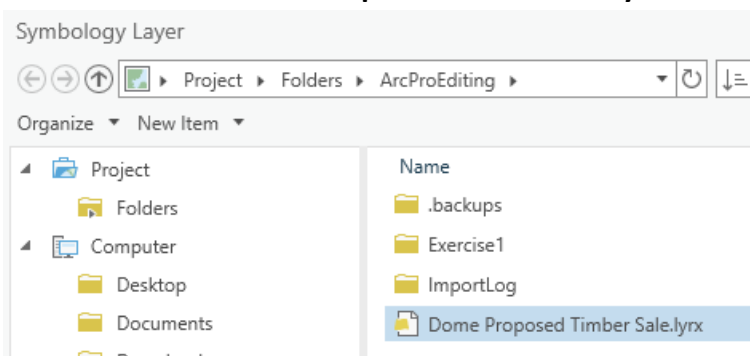
3. Click the menu icon in the upper right side of the Symbology pane and **select Import Symbology.**



4. The **Apply Symbology From Layer** tool will open. Click on the **Browse** icon next to the Symbology Layer.

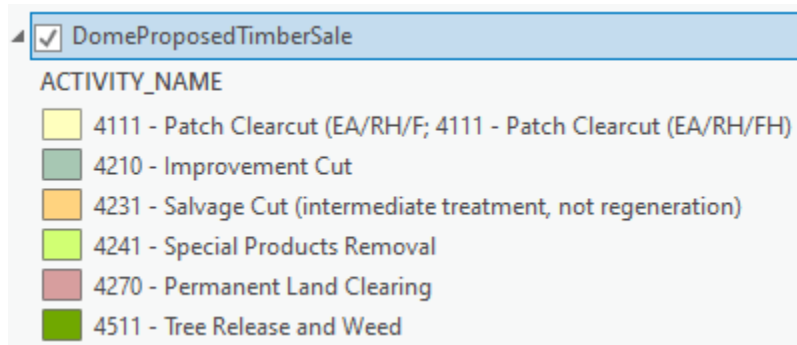


- 5.
6. A Symbology Layer window will open. Navigate to where you saved the ArcProEditing folder and **select Dome Proposed Timber Sale.lyrx**. Click OK.

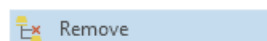


7. Accept the Symbology Fields as they are and **click Run** at the bottom. If necessary, close the Geoprocessing pane when complete.

8. The Dome Proposed Timber Sale should look like this in your Contents pane.



9. Remove the World Imagery layer and the dome_FSVegSpatial in the Contents pane by right-clicking and selecting Remove (this will speed up the draw time).



The Dome Boundary, Landing Sites, GPS Points, Dome Streams and Dome Other Roads layers all come from the BHNF_DomeProject.gdb. This is the background data for the project and it is arranged into Feature Datasets by topic (e.g. Activities, Administrative, Botany). This is one way to organize an official Geodatabase for a NEPA project record.

Part 2: Preparing the Edit Environment

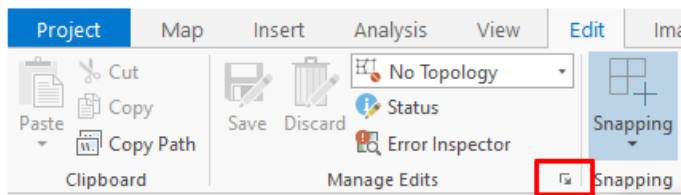
Before you start editing any data, consider these questions:

- **What are my Editing preferences?**
Pro has a section in the Project Options window for Editing Options. This will save your preferences whenever you edit in the Project.
- **Which spatial reference will be used for all my edits?**
During Project set-up make sure the Map, reference data, and data to be edited are all using the same spatial reference (e.g. coordinate system, projection). In Exercise 1 we made sure that all layers had the same Spatial Reference so we are set for this scenario.
- **What Map Scale or Extent will your editing scenario use?**
You want to make sure that all your reference layers were created using an appropriate scale for your project, and then decide what scale or extent you will use for digitizing. The Map Scale will affect your Snapping Tolerance.
- **What Snapping Tolerance is needed for the project?**
This will depend on the scale and specific needs of your project. If you are unsure, talk to your

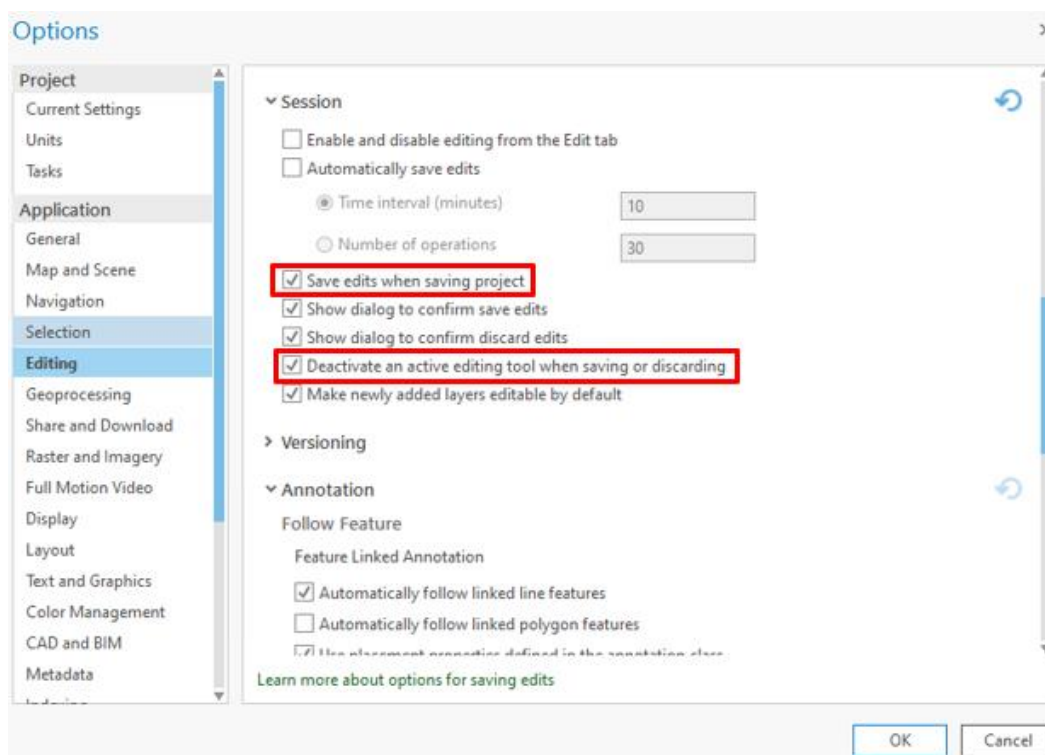
GIS Specialist. Snapping an editing tool to an existing feature helps avoid issues of gaps, overlaps, overshoots, or undershoots.

- **Which layers will have selectable features?**
Pro has a button at the top of the Contents pane where you can choose which layers are selectable. This may change between edits.
- **Which layers should be editable?**
Pro has a button at the top of the Contents pane where you can choose which layers can be edited. This may change between edits.
- **To which layers should I Snap?**
Pro has a button at the top of the Contents pane where you can choose which layers can be used when snapping. This may change between edits.
- **What Snapping tools do I need?**
Pro has seven different Snapping options. Depending on your editing scenario you may only want one to be active, at other times you may want them all active.
- **How do I want to edit the attributes?**
In Pro you can decide to dock the Attributes window and add the attributes after every edit, or you can decide to create or edit all spatial features, then edit the attributes all at once afterward.

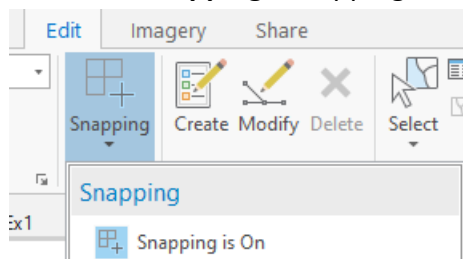
1. From the Editor Ribbon, **click the arrow in the lower right corner of the Manage Edits group** to open the Editing Options dialog window.



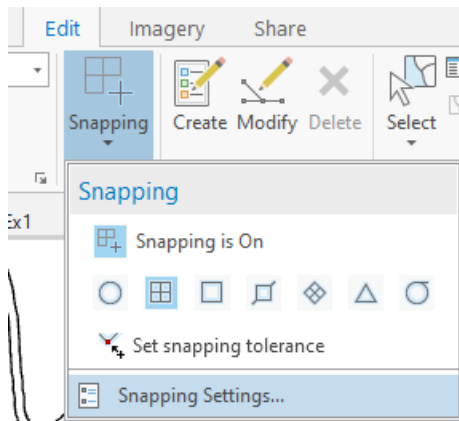
2. In the Options window, Editing is selected in the left column. Scroll down to see the Session options. **Click on “Save edits when saving a project” and “Deactivate an active editing tool when saving or discarding”**. We will leave the rest to default. Click OK to close.



3. If necessary, activate the Edit ribbon. Click the down arrow under the Snapping button. If the window reads, 'Snapping is off', **click the smaller snapping button on the left side to activate snapping**. Snapping is on when the icon is blue.



4. Next click **Snapping Settings**.

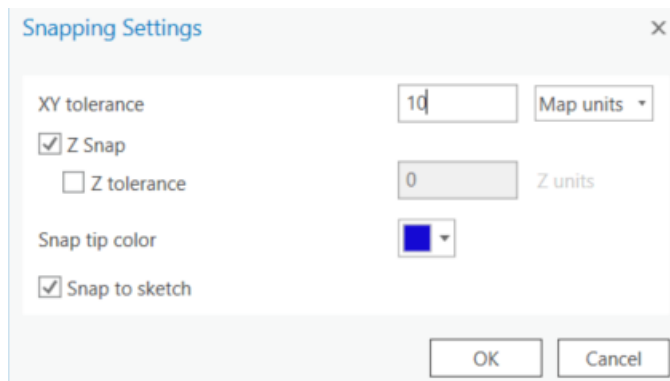


We do not want any gaps or overlaps when editing. For this Project, whenever an editing tool is within 10 Map Units (UTM = Meters) of an existing feature, we want the editing tool to snap to the existing feature. The 10 Map Unit distance is entered as the “Snapping tolerance.” We are using Map Units because they are easier to visualize than Map Pixels. This setting will work well for this project because we will be editing at a scale of 1:20,000 or below. If you are working on a project where you are zoomed out further, you may need a wider Snapping Tolerance.

5. Set the **XY Tolerance to 10** and **click the down arrow to select Map Units** (instead of Map Pixels).

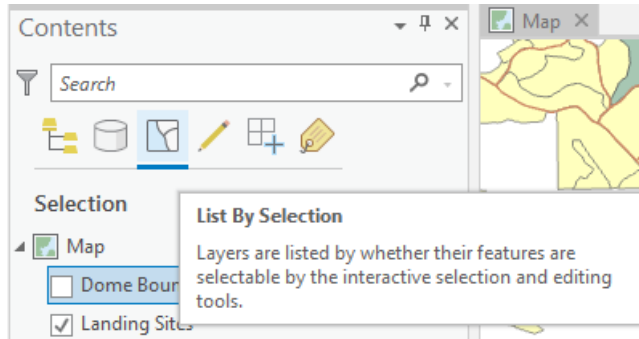
Another option you may want to set up is Snap tips. When an editing tool snaps to an existing feature, a tip appears that shows which snap type is being used (e.g. Point, Vertex, Edge, or End), and the name of the layer. You can set the Snap tip color to best match your project.

6. Leave the Snap tip color as blue and the Snap to Sketch checked. **Click OK.**

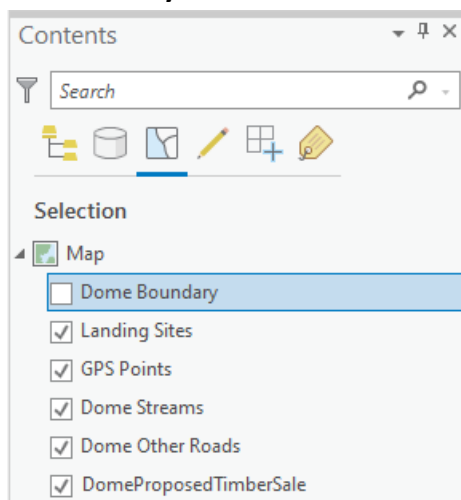


When editing you can decide which layers will have selectable features. This option may change between edits.

- Click the **List by Selection** View in the Contents pane.

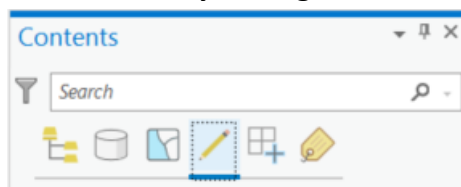


- If necessary, **uncheck the Dome Boundary layer** so that it is not selectable. **Check all the other layers to make them selectable.**

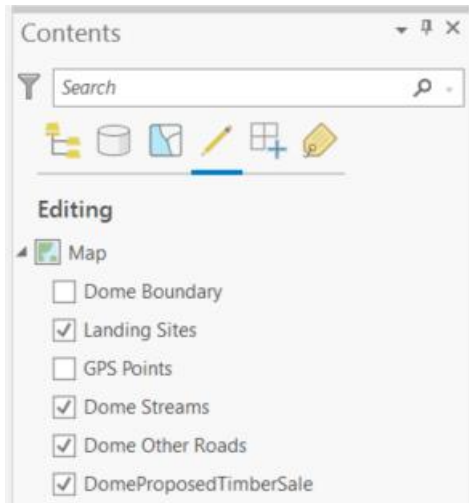


Next you need to decide which layers are editable. This setting can help you avoid editing a layer unintentionally, and it may need to be changed between edits. Pro has a simple way to change editable layers in the Contents pane.

- Click the **List by Editing** button at the top of the Contents pane.



10. Uncheck the **Dome Boundary** and the **GPS Points** if necessary. All the rest of the layers should be checked for editing in the scenario.

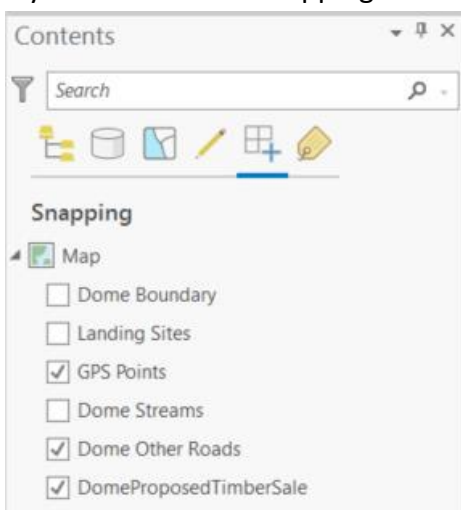


For each editing scenario you will want to consider which layers are needed for snapping. Pro has a simple way to change snapping layers in the Contents pane. This setting may change between edits.

11. Click on the **List by Snapping** button in the Contents pane.



12. **Uncheck Dome Boundary, Landing Sites, and Dome Streams.** Leave all the others layers available for snapping.



Lastly, you will want to decide how you want to add or edit the attributes, there are many options. For example you could dock and pin the Attributes pane in your Pro window so that you can add the attributes after every edit, or you could open the Attribute table and edit the attributes all at once after completing the spatial edits. This decision will vary depending on your data and workflow. We will leave the Attribute pane closed for now, since you already used it in Exercise 2.

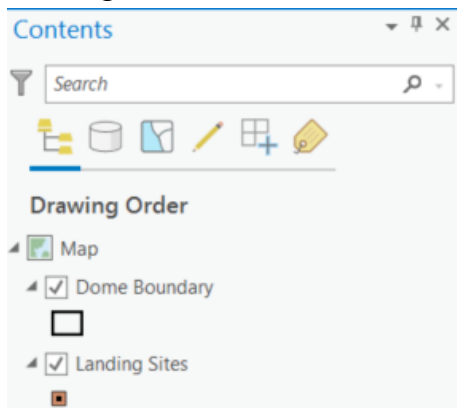
13. **Save the ArcGIS Pro project** using the save button up on the Quick list in the upper left side of the window.



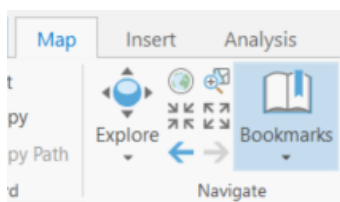
Part 3: Delete and Add Points

For this section we will be working with the Landing Sites Layer. In this scenario you are deciding where you will stack your logs along the existing roads. These areas are called landing sites.

1. **Expand and turn on the Landing Sites** layer in the Contents pane under the List by Drawing order view.



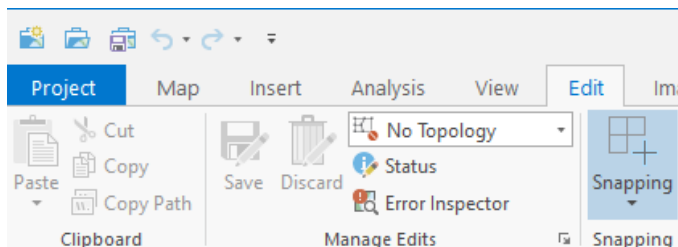
2. **Click on the Bookmarks** button on the Map ribbon.



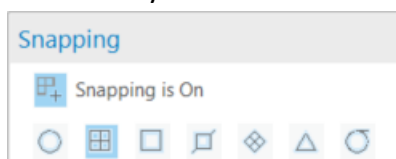
3. Select the **Landing Sites** bookmark.



4. Click the Edit tab and **click on the Snapping drop-down** button.



5. **Enable the EndPoint tool** (indicated by the blue color). You may have to disable other tools if they are enabled.



When the snapping tool is enabled, an editing tool can snap to another feature. The illustration below shows the common parts of a line or polygon. There are more options in Pro but these are the four we will use in this exercise.



Point: An XY coordinate defining a single point feature.



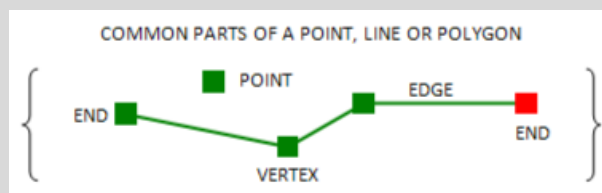
Vertex: An XY coordinate used in defining a feature's shape. A point feature is represented by a single vertex. Connected vertices define a line or polygon feature.



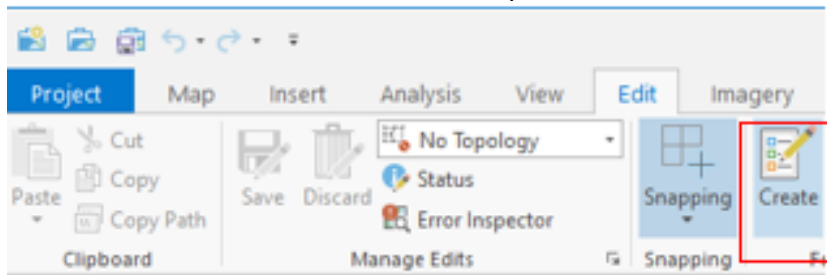
Edge: Line segment between connected vertices.



End: End vertices of a line feature.

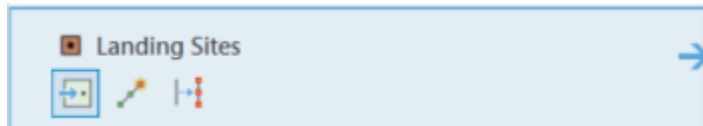


Select the **Create Features** button to open the Create Features pane.



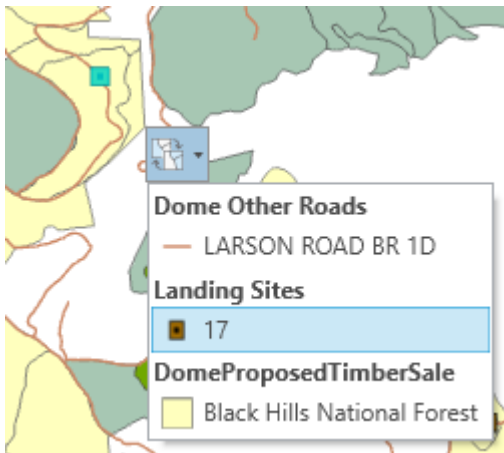
The **Create Features** pane opens on the side of the Map View (wherever you pinned it), allowing you to choose the feature class you want to edit and the construction tools you will use.

6. Click on the **Landing Sites** template in the Create Features pane.

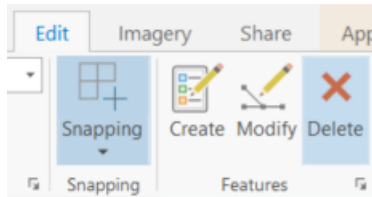


7. Click on the **Select tool** in the Edit Ribbon.

8. **Select the Landing in the far west side** of the Bookmarked map. Click on the toggle button to see the three possible selected features. Leave the **Dome17 Landing site** selected.



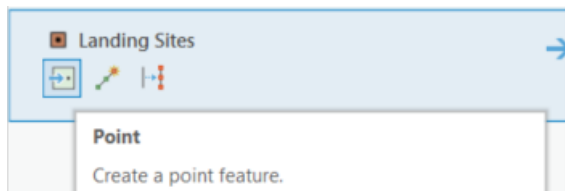
9. Click the Delete button on the Edit ribbon.



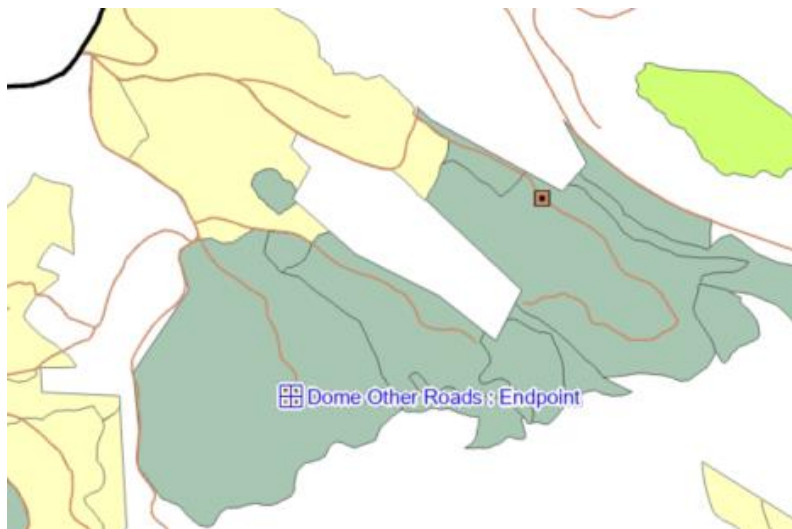
The Landing Dome 17 will be deleted from the feature class. If you ever make a mistake you can always click Undo before you save to get it back. However, once you click Save on the Edit Ribbon the edit will be permanent.

Next, we will add a few Landings at the end of roads. By using only the EndPoint Snapping tool, we will be sure to place the landing right at the end of the roads.

10. Go back to the **Create Features** pane and click on the first button next to the Landing Sites template to **create a point feature**.

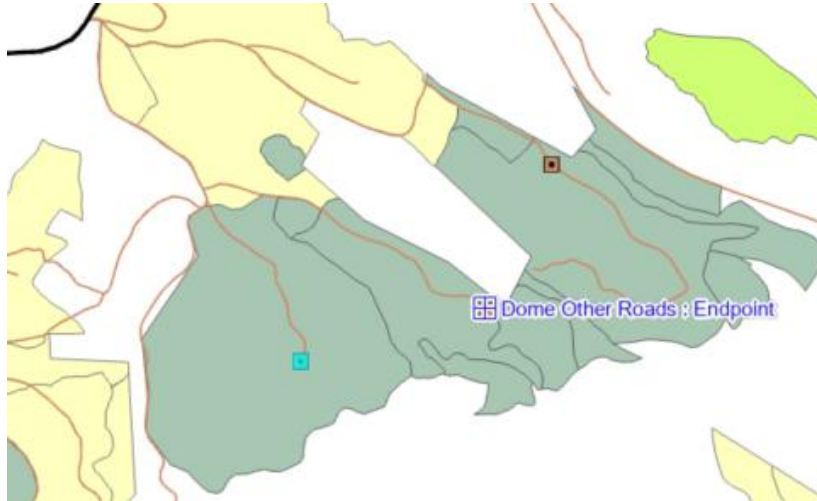


11. In the Map **hover your mouse** slowly around the end of the road (shown below) until it snaps and **you see the Snap Tips text "Dome Other Roads : EndPoint"**. Click **your mouse** to create a point.



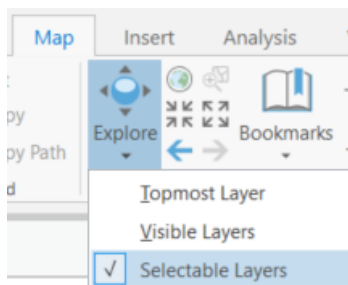
It may take a few passes to find the exact endpoint it since we have the snapping tolerance set so small. You could zoom in more if necessary.

12. **Create another Landing Site** at the end of the next road to the east.

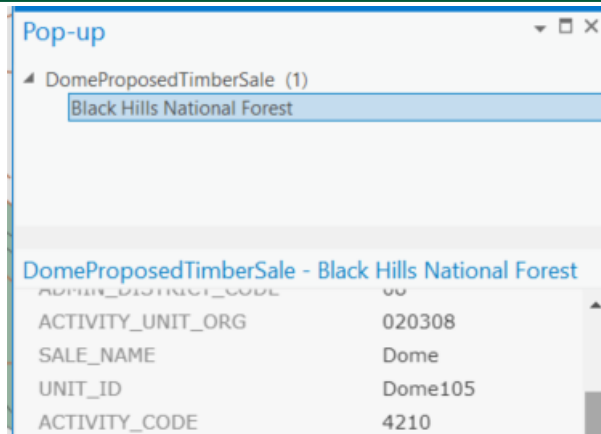


Tip: If you need to snap an editing tool to an existing feature, wait to click until you see the snap-tip. Snap-tips provide pop-up text and status bar messages to indicate the layer you are snapped to and with which snap type.

13. Click on the Map tab and the **Explore tool**. If necessary, **check Selectable Layers** to show only those pop-ups (otherwise you will get the pop-up for the Dome Boundary).



14. Click on the polygon under the selected Landing Sites point to **determine the UNIT_ID**. We will name the Landing Site Dome105.



15. Open the Attribute table for Landing Sites. In the **Name** field for the selected point type **Dome105**.

Landing Sites				
Field:		Selection:		
OBJECTID *	Shape *	Name	X	
10	Point	Dome47	604	
12	Point	Dome98	613	
15	Point	<Null>		
16	Point	Dome105		

16. Repeat steps 15 and 16 to **name the first new point we created**.

Landing Sites				
Field:		Selection:		
OBJECTID *	Shape *	Name	X	
10	Point	Dome47	604	
12	Point	Dome98	613	
15	Point	Dome33		

Next, we will create an X and Y coordinate for each point so that the Landings can be found by the logging trucks.

17. Select the rows for both new points. **Right-click on the X field and select Calculate Geometry.**

OBJECTID	Shape	Name	X	Y
4	Point	Dome179	607340.65037	82.47675
5	Point	Dome129	610245.96	3056.928
6	Point	Dome40	610578.80	3947.178
7	Point	Dome172	612084.56962	3.493625
8	Point	Dome95	614872.16	5027.976
9	Point	Dome73	606783.3	05413.08
10	Point	Dome47	604232.55	8902.211
12	Point	Dome98	613553.10	8326.479
15	Point	Dome33	<Null>	<Null>
16	Point	Dome105	<Null>	<Null>

18. From the dropdown **next to X** select **Point x-coordinate**. In the next Target Field dropdown **select Y and Point y-coordinate** in the Property dropdown. Click OK.

Calculate Geometry

Pending edits.

Input Features
Landing Sites

Geometry Property
Target Field X Property Point x-coordinate


Y Property Point y-coordinate

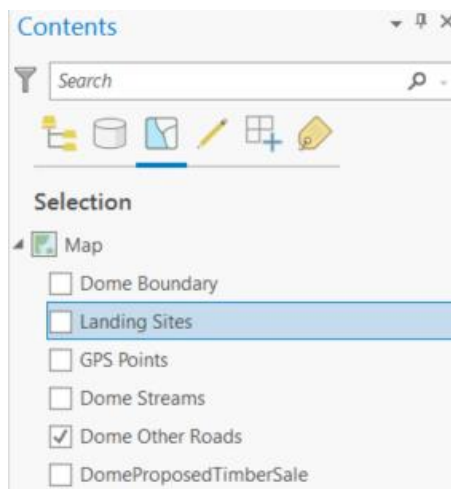
19. The X and Y coordinate fields should be filled in for the new points. If you get a warning that the length of the value exceeds the field, it is ok.
20. **Close** the Landing Sites attribute table.
21. From the Edit ribbon click **Clear** to clear the Selected Features.
22. From the Edit ribbon select **Save and Yes to save all edits**.

Good Habit: After a significant spatial edit (e.g., creating new points), **SAVE** your edits. You never know what will happen, saving often can reduce the amount of work lost if your computer locks up.

Part 4: Line Edits Splitting a Line

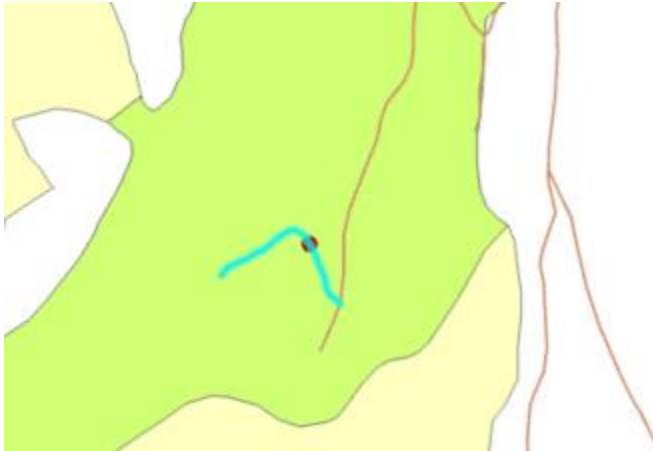
In this step we will edit line features. This scenario has you use a GPS point created in the field to show where the road really ends so you can split the line and delete the erroneous segment.

1. In the Contents pane, click the List by Drawing Order button  then turn on and expand the GPS Points layer.
2. On the Map tab, click the **Split Line Bookmark** button.
3. In the Contents pane List by Selection view, make **Dome Other Roads the only Selectable Layer**.




With the Roads as the only selectable layer it will simplify this workflow because it reduces the risk of unintended selections.

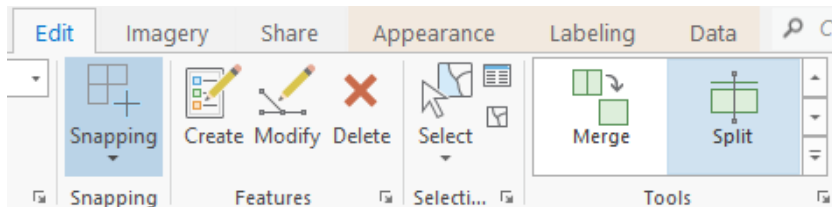
4. Using the Select tool, **select the road** on the map that has a GPS point on it.



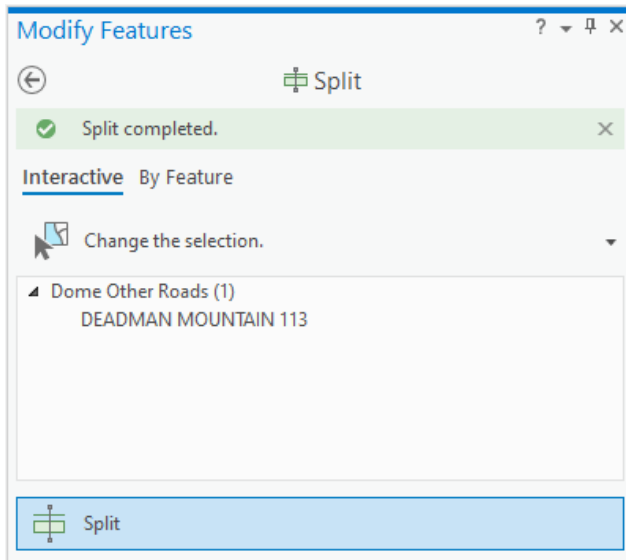
We are almost ready to split the road. What remains is setting the snapping environment that ensures the Split tool snaps to the location of the GPS point. As the name implies, the GPS Points layer is made of points. Therefore, we want the Split tool to snap to a point in the GPS Points layer.

5. From the Edit ribbon click the Snapping button and **make the Point snapping tool the only one selected.** 

6. In the Edit ribbon under Editor tool gallery, select the **Split** tool.



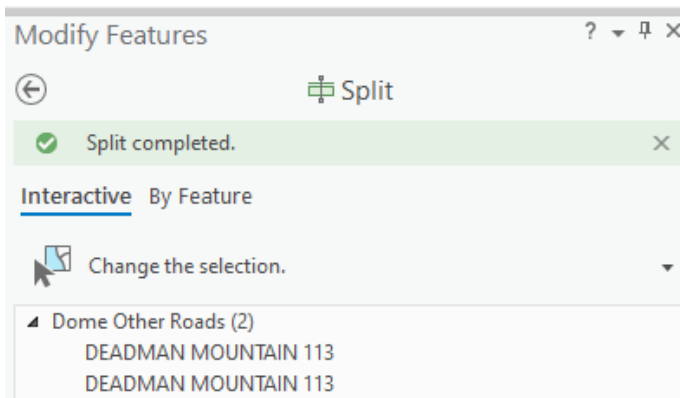
7. In the Modify Features pane, **select Split**.



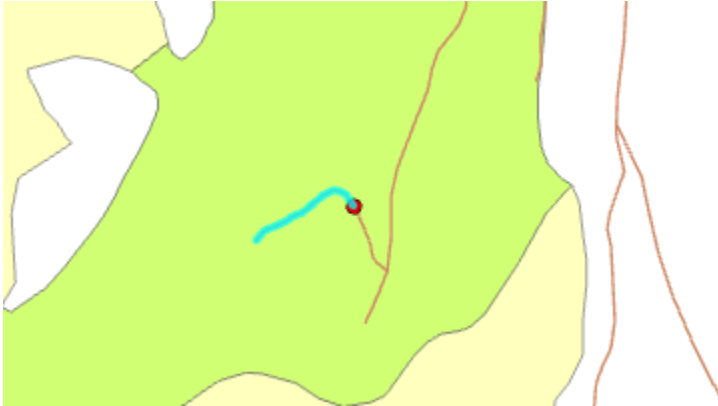
8. Snap the **Split** tool cursor to the **GPS point**.



9. You will see that there are now two Deadman Mountain lines. Close the Modify Features pane.



10. Click **Clear** on the Edit ribbon, then **activate the Select button**. Click on the end part of the line and **see that the line has been split** at the GPS Point.



11. Click the **Delete** button on your keyboard to remove the road segment.



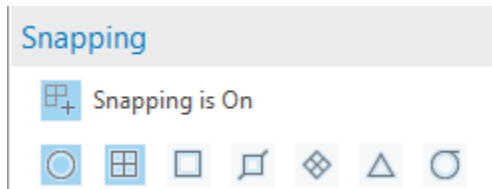
12. **Save** your edits.

Part 5: Line Edits – Create and Merge Lines

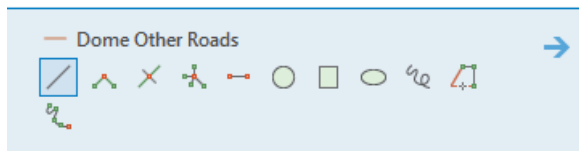
We will continue working with lines in this step. You will digitize a new line feature and assign attributes to the new feature accordingly. In this scenario, GPS points were collected in the field to indicate where a road is missing from the map.

1. From the Map ribbon Bookmarks button select **Create and Merge a Line**.

- Set Snapping to the **Point Tool** and the **End Point tool**.



- Click the **Create Features** button from the Edit ribbon.
- Select **Dome Other Roads** and the **Line** tool from the Create Features pane.

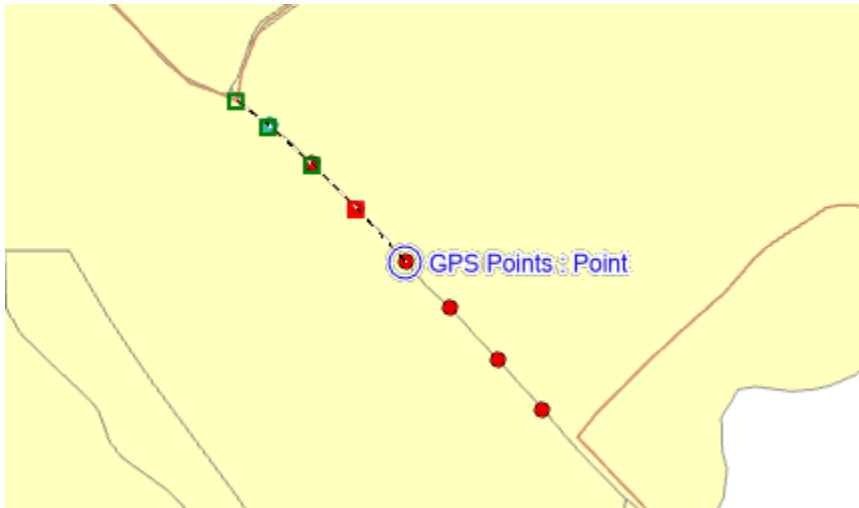


In this scenario we have found that the Dome Other Roads layer is missing a segment. We want to digitize it by snapping to endpoints, then snapping to the GPS points provided from the field. After we complete the line, we will then merge the segment with the connected segments on either end.

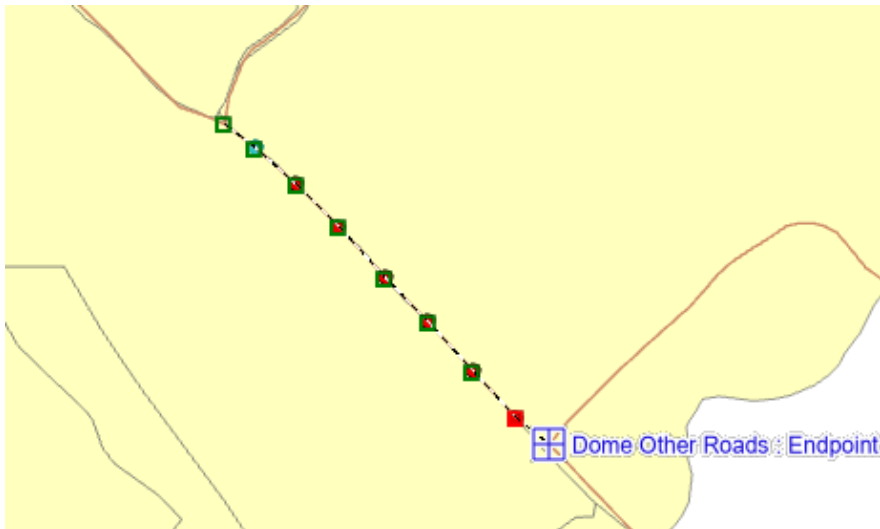
- Hover over the endpoint of the road** in the northwest side of the bookmarked map until the snap tip appears saying Dome Other Roads: Endpoint. **Click to start digitizing.**



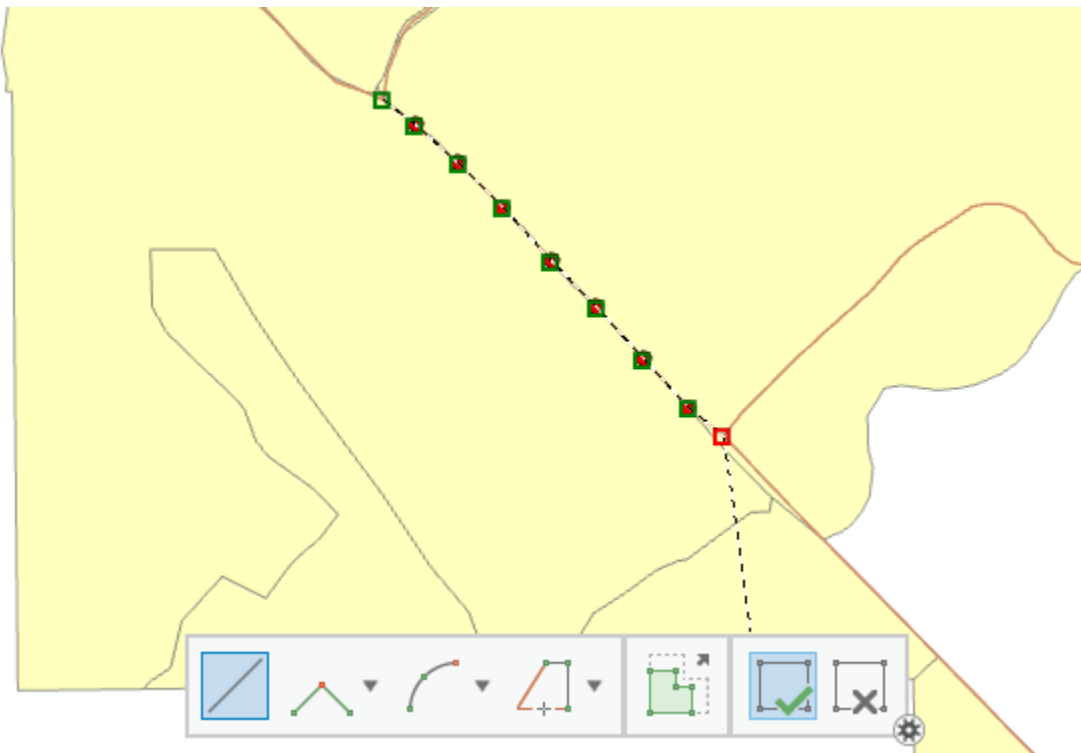
6. Digitize the line by **snapping to each GPS point** until close to the end point.



7. **Click on the southeastern road endpoint** after you see the snap tips appear.



8. Click **Finish** from the Editing toolbar at the bottom of the map.

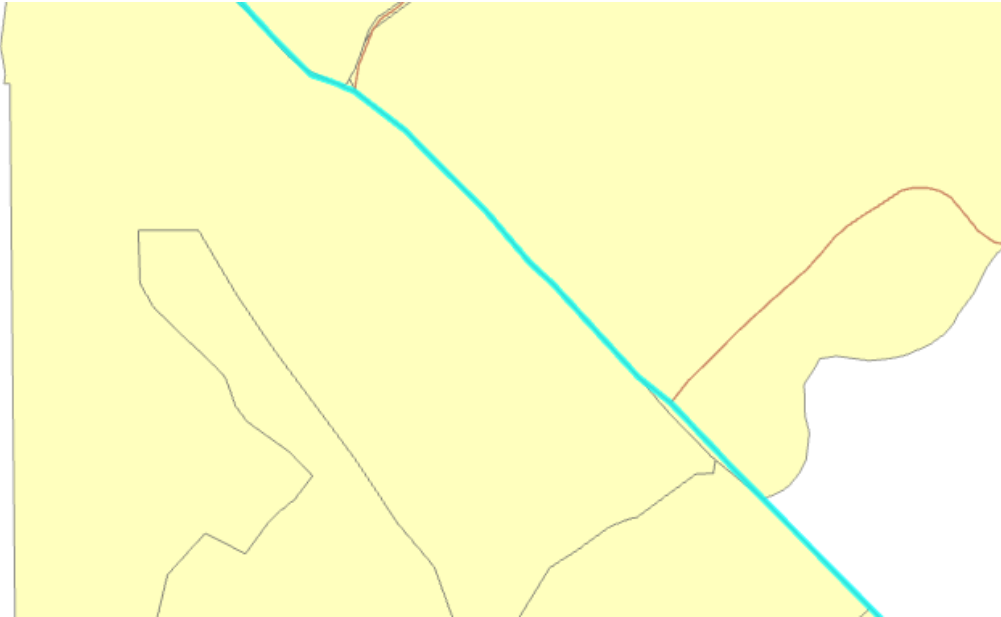


9. Turn off the **GPS Points** in the Contents pane.
10. Click on the Map tab and then select the Explore tool. Click to **see the Pop-up for the roads** on either side of the new road.



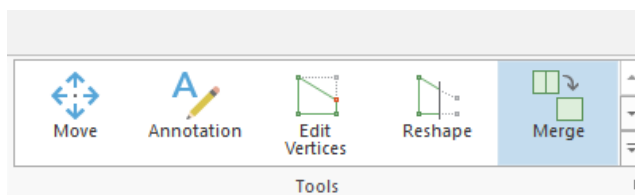
Both sides of the road are Larson Road. Next, we will merge all three line segments together into one line with the same attributes.

11. Activate the Select tool and hold down the Shift key to select all three road segments.



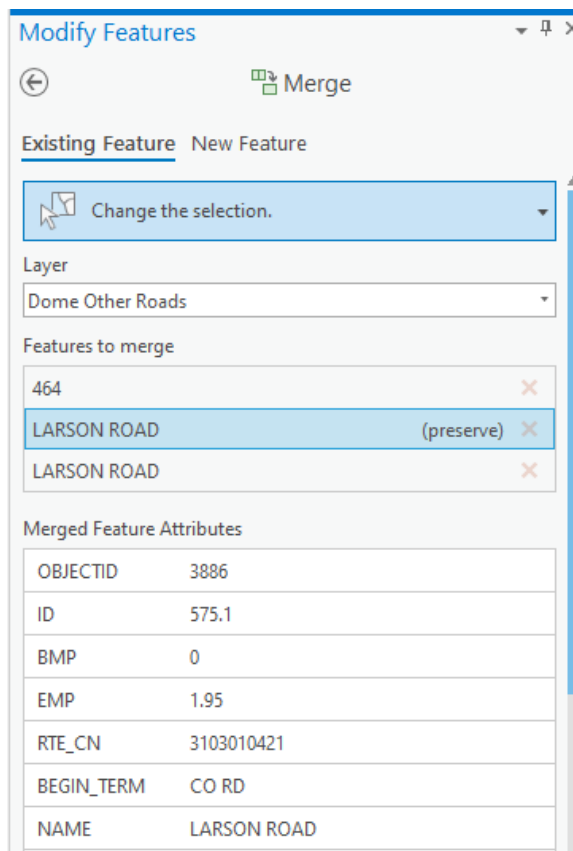
Rather than enter new attributes, we can use the Merge command to combine the three road segments into a single road. When the Merge command is executed, you specify which of three road segment's attributes to preserve.

12. In the Tools section of the Edit ribbon scroll down and **select the Merge tool**.



The Merge tool pane will open and you can choose which road segment attributes you want for the merged road.

13. **Select the top Larson Road segment** under Features to Merge, then **click the Merge button** at the bottom of the pane.



Now if you select the road it will be one feature instead of three different segments.

14. Click the **Clear Selected Features** button  from the Edit Ribbon.

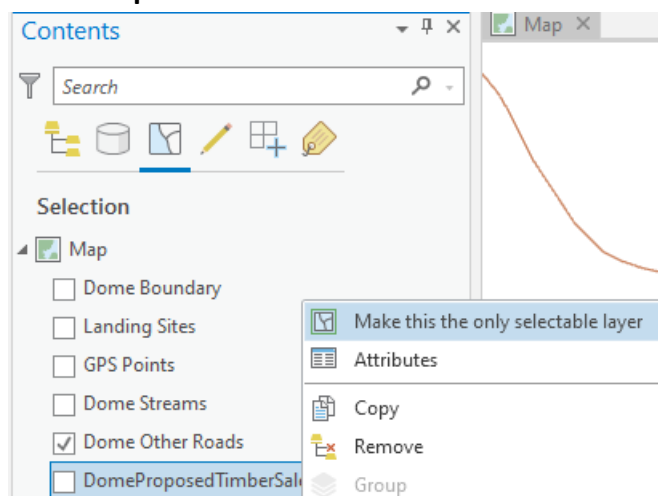
15. **Save** your edits.

Part 6: Polygon Edits – Edit and Merge Polygon

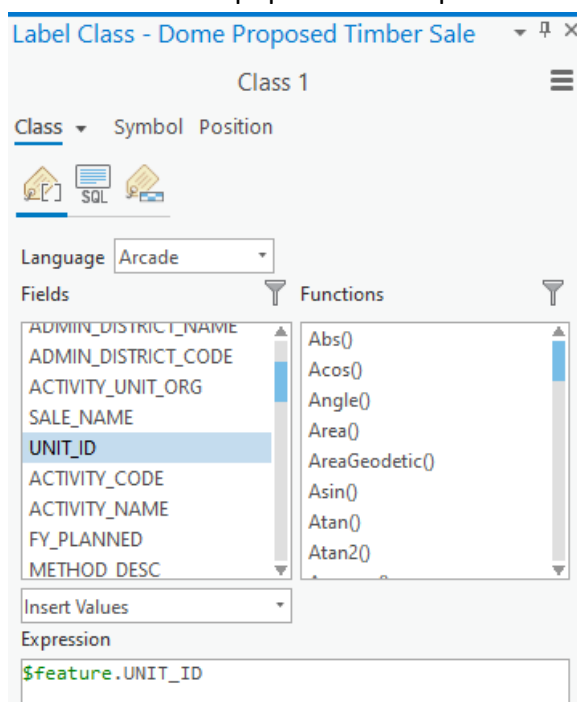
In this scenario we have two small Units that have the same treatment as a nearby bigger Unit. To simplify the project it was decided to merge the smaller polygons into the bigger one. In this step we will first snap part of the polygon to the road to fix overlaps. Then we will merge two polygons together and select the polygon whose attributes we want to use.

1. **Select the Merge and Delete Polygons Bookmark** from the Map ribbon Bookmark dropdown.

- In the Table of Contents, click List by Selection and **right-click DomeProposedTimberSale to select Make This the Only Selectable Layer.**

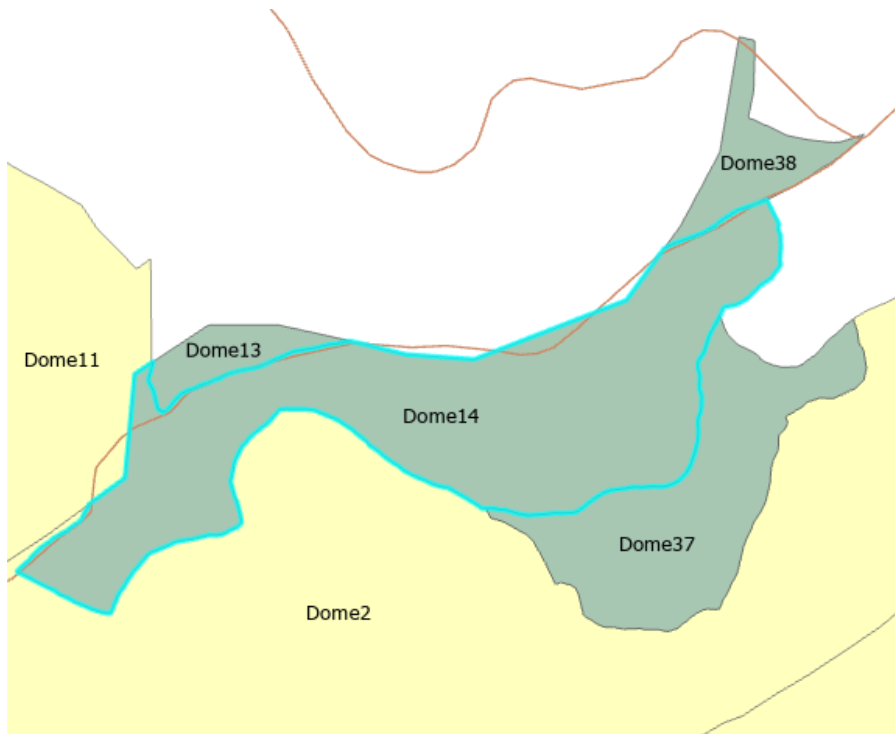


- Right click the Dome Proposed Timber Sale layer in the Contents Pane and **select Labeling Properties.**
- In the Label Class pane clear any expression, then **double-click on the Unit_ID in the Fields box.** It will populate the Expression. Click Apply at the bottom.

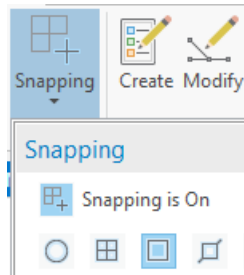


- Right-click Dome Proposed Timber Sale and **click on Label** to turn on the labels.

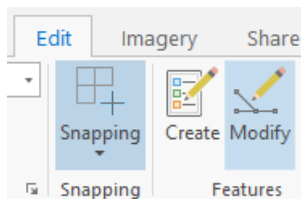
6. Click on the Select tool in the Edit ribbon and **Select Dome 14.**



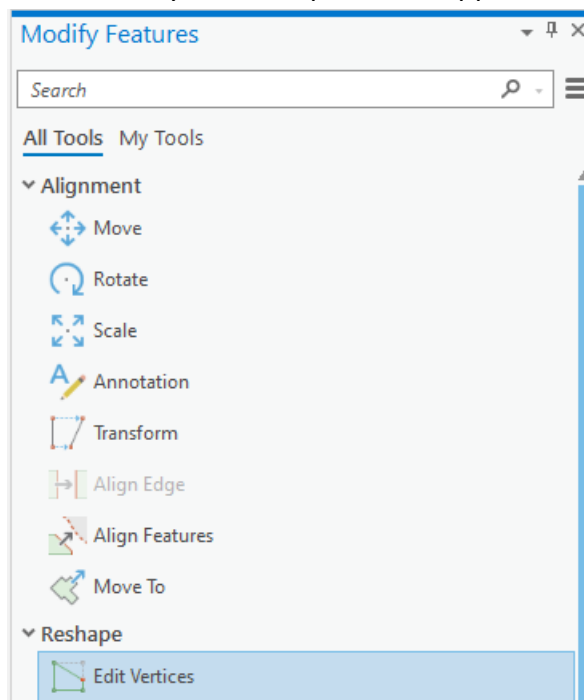
7. Set Snapping to **Vertex**.



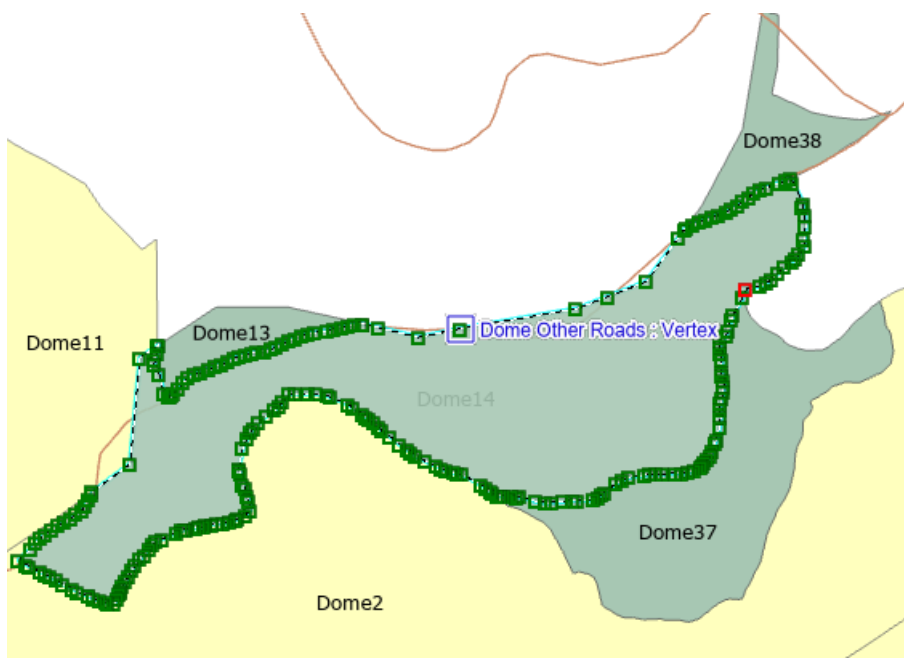
8. Click the **Modify** tool in the Edit ribbon.



9. In the Modify Features pane that appears click on Edit Vertices in the Reshape Group.

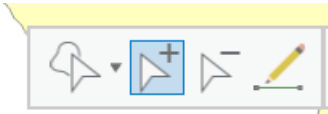


10. The selected polygon will turn into a sketch with green squares representing the vertices. **Grab the sketch vertices** with your mouse and **snap them to the road vertices** as shown.

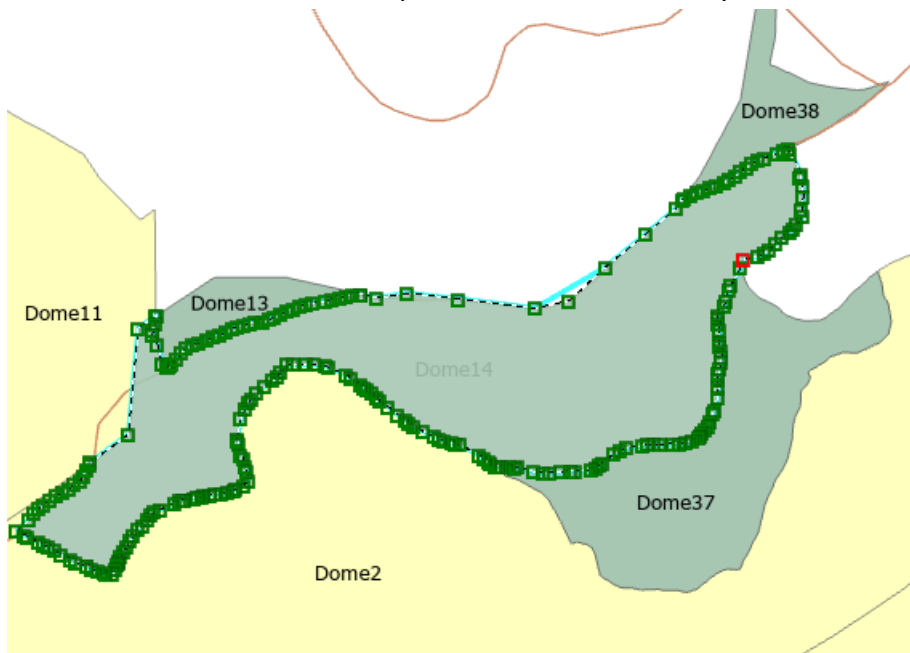


Even when using the Snapping tools, trying to create a half dozen vertices and ensure that you have snapped them to all the Road vertices is cumbersome. If there were hundreds or thousands of vertices, it would be impractical. There are other tools that can be used to make this task easier. We will cover some of those tools in the next section, and some in the Advanced Editing course.

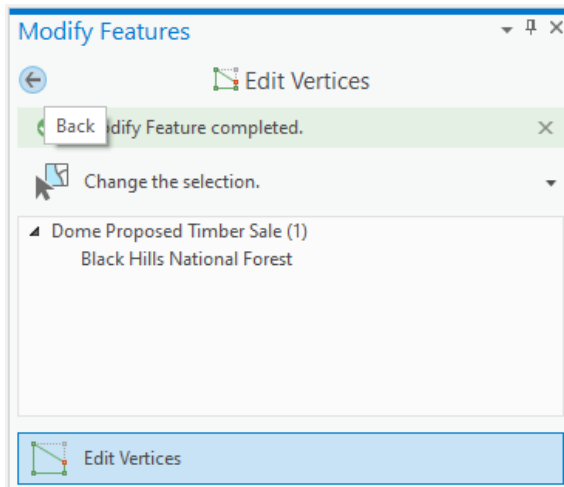
11. Zoom in to see the road better and where needed you can click the **Add Vertex** button from the Edit toolbar.



12. **Create more vertices** and snap them to the road until you can't see any gaps.



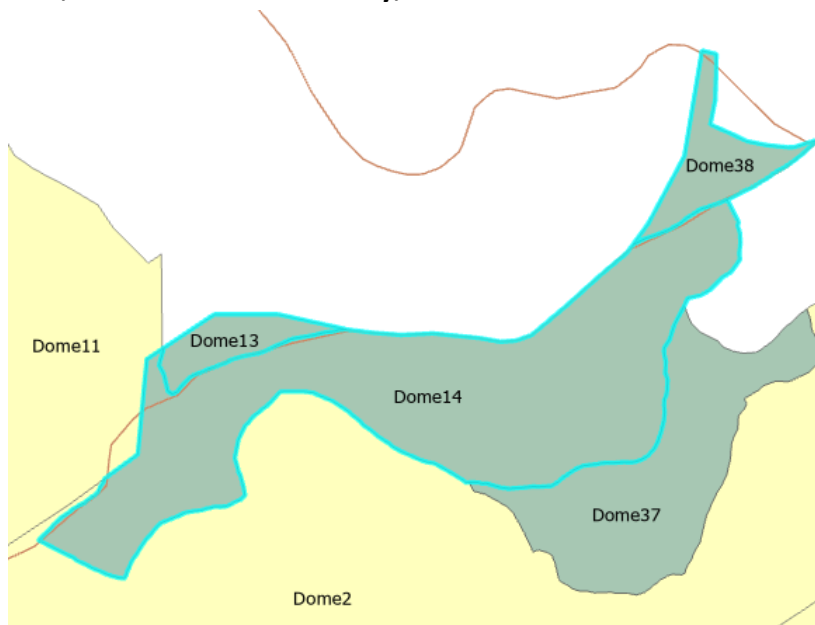
13. Click on the back button on the Modify Vertices pane to **turn off the sketch**.



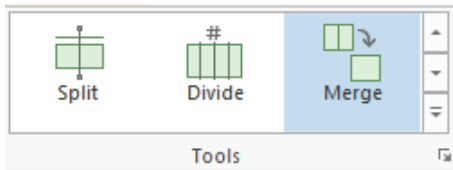
14. **Click Save** in the Edit ribbon then Yes to save all edits.

The Merge command works with polygons as well as lines. In this step Then we will merge three polygons together and select the polygon whose attributes we want to use. In this scenario it was decided for simplicity's sake to Merge Dome13 and Dome38 to Dome14 since they are small areas and have the same Activity Code.

15. Dome14 polygon should still be selected from the previous step. **Click on the Select tool, hold down the Shift Key, and select Dome13 and Dome 38.**



16. Scroll down and **click the Merge tool** in the Tools section of the Edit ribbon.



17. In the Merge Pane, **click to preserve the Dome14** polygon attributes and click the Merge button at the bottom.

Modify Features

← Merge

Existing Feature New Feature

Change the selection.

Layer
Dome Proposed Timber Sale

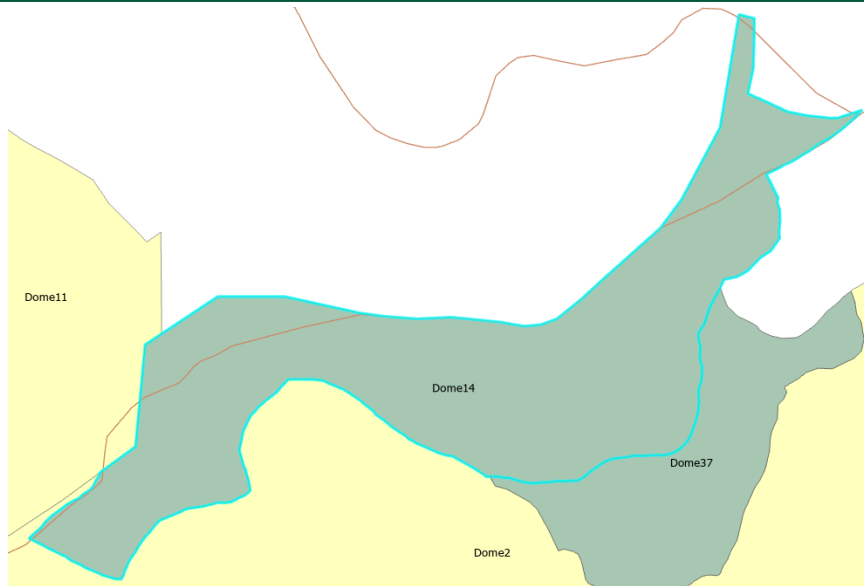
Features to merge

Black Hills National Forest	×
Black Hills National Forest (preserve)	×
Black Hills National Forest	×

Merged Feature Attributes

ADMIN_FOREST_CODE	03
ADMIN_REGION_CODE	02
ADMIN_FOREST_NAME	Black Hills National Fores
PROCLAIMED_FOREST_CODE	0203
ADMIN_DISTRICT_NAME	Northern Hills District
ADMIN_DISTRICT_CODE	08
ACTIVITY_UNIT_ORG	020308
SALE_NAME	Dome
UNIT_ID	Dome14

18. Ensure that you now have one polygon where there were three before. **Clear the selection** with the Clear button.



19. **Save** your edits.

Part 7: Polygon Edits – Reshape a Polygon

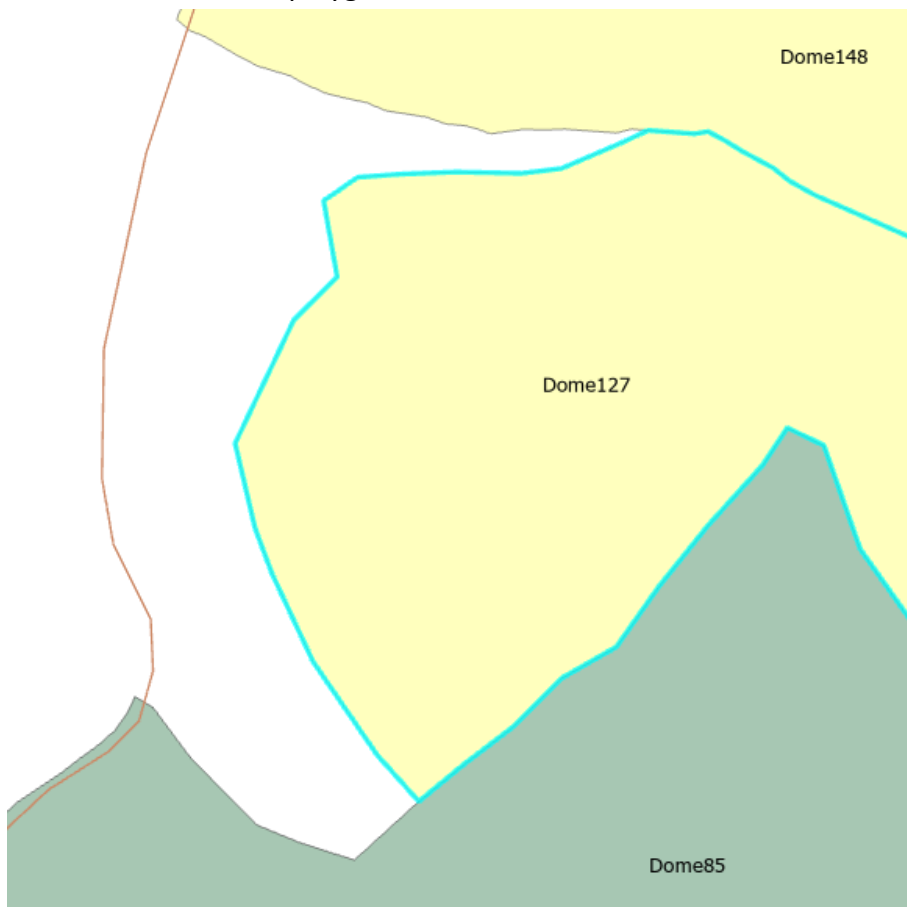
This scenario involves reshaping a polygon so that it expands to a road. Called “Reshape Feature,” this edit task requires you to select the feature to be reshaped. We will select a polygon from DomeProposedTimberSale.

1. Click on the **Reshape Polygon Bookmark**.

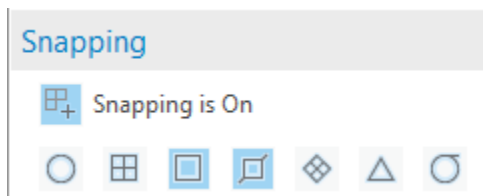


Reshape Polygon

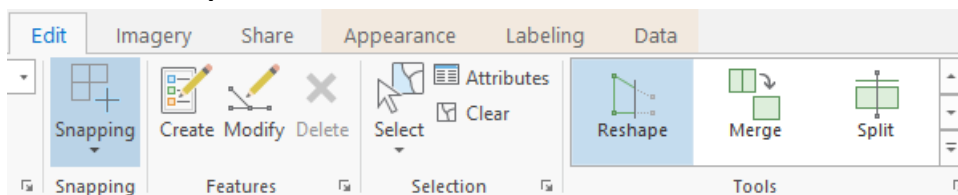
2. Select the **Dome 127** polygon.



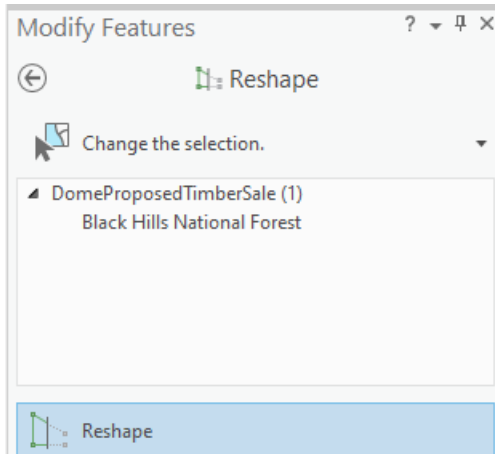
3. If needed, turn on the **Vertex and Edge Snapping** tools.



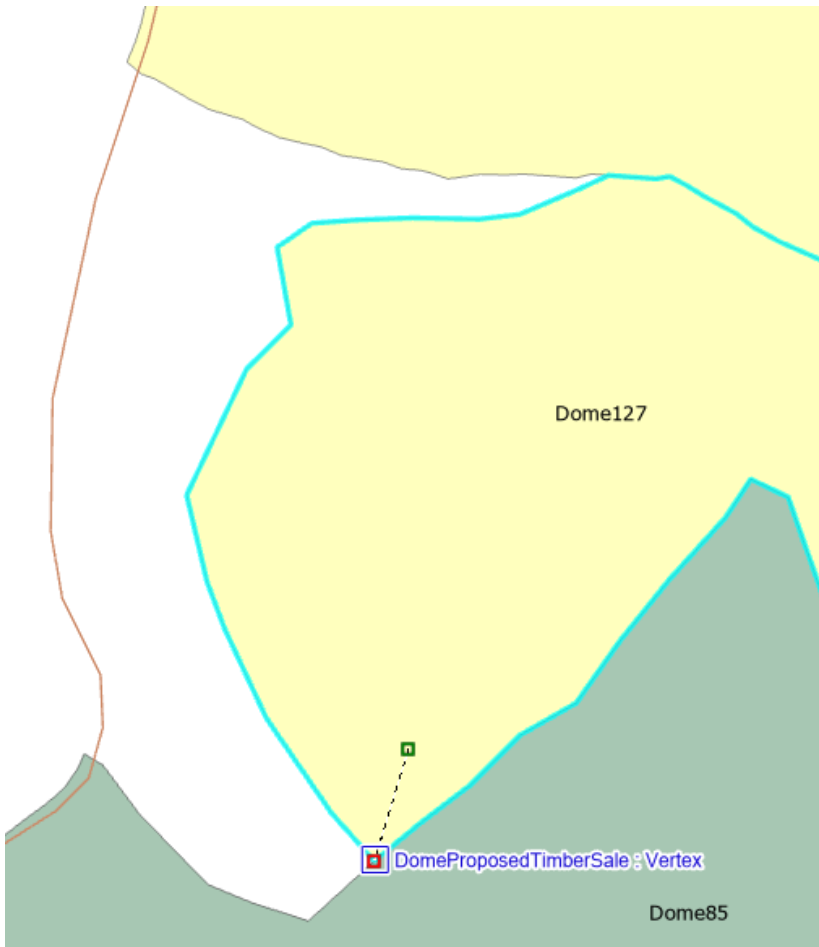
4. Click the **Reshape** tool in the Tools section of the Edit ribbon.



5. Click **Reshape** in the Modify Features pane.

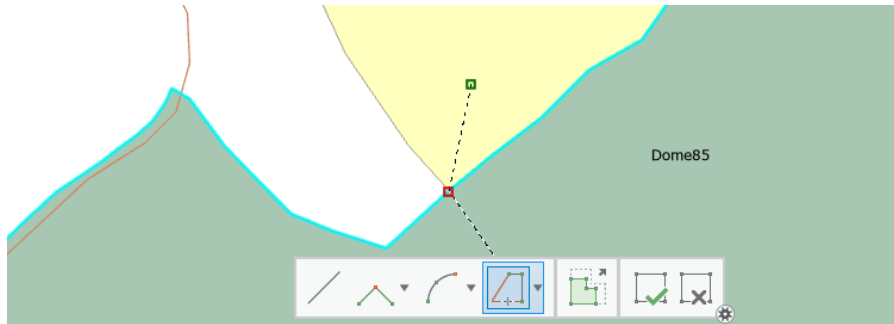


6. Click inside the **Dome127** polygon, to start the Reshape tool, then snap another vertex along the Dome85 boundary.

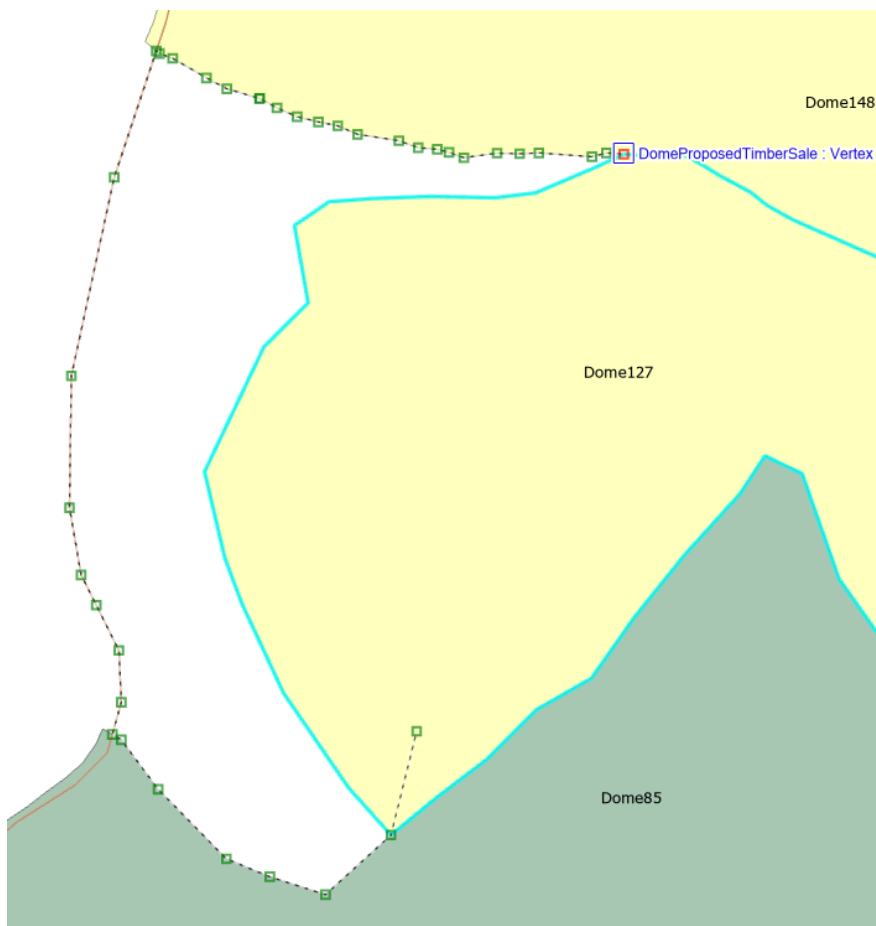


You can change tools in between mouse clicks. In this case we will be switching to the trace tool which is located on the Editing toolbar that appears at the bottom of the map while you are editing spatial features.

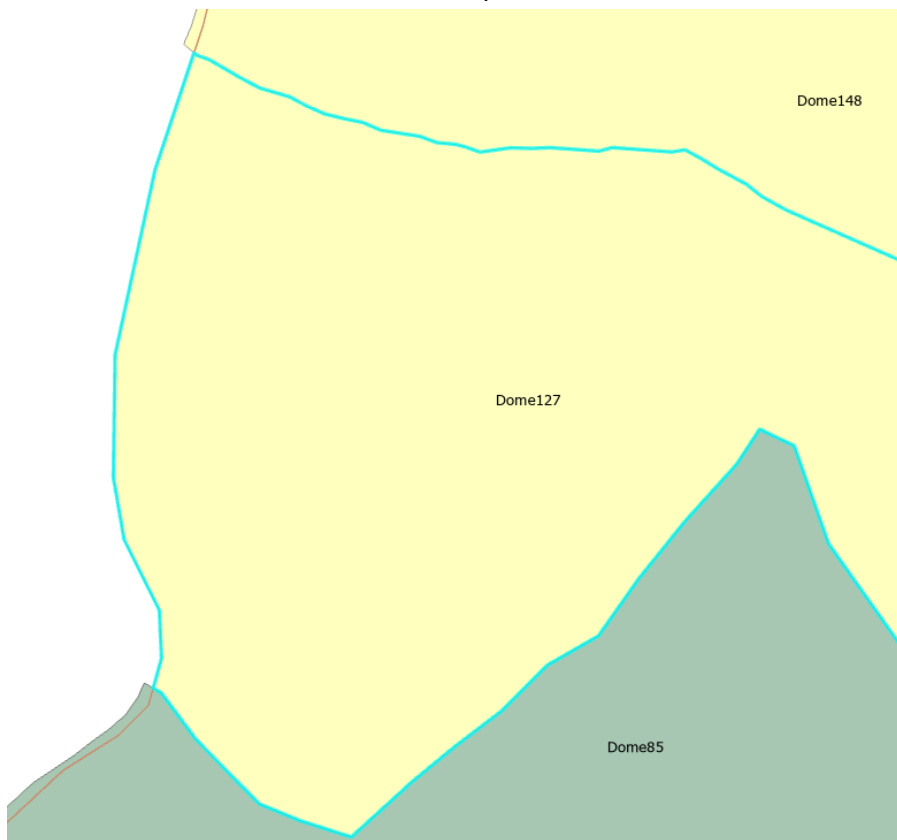
7. Click the Trace tool.



8. **Hold down your mouse button** and follow along the boundary of Dome 85, the Dome Other Roads layer, then Dome 148 as shown below. **Click when you get to the last vertex where Dome 127 and Dome148 connect.**



9. Double-click inside Dome127 to complete.



IMPORTANT: To avoid gaps with the existing polygon boundary, start and end your sketch inside of the polygon. When you finish the sketch, the Reshape Features tool will remove any overshoots and complete the polygon.

Part 8: Polygon Edits – Auto Complete Tool

Lastly, we are going to create a new Timber Sale polygon adjacent to another polygon with the Auto Complete Polygon tool. Using the Auto Complete Polygon is similar to the Create Features Polygon tool in that you use the cursor to create the new polygon. With the Polygon tool you have to digitize the entire shape of the new object, but the Auto-Complete tool finishes the graphic for you by matching the new polygon boundary to an existing polygon boundary.

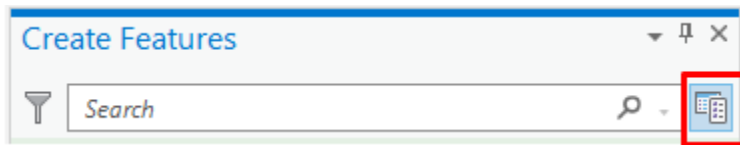
1. Click the **Auto-Complete Polygon** bookmark from the Map tab and the Bookmarks dropdown button.



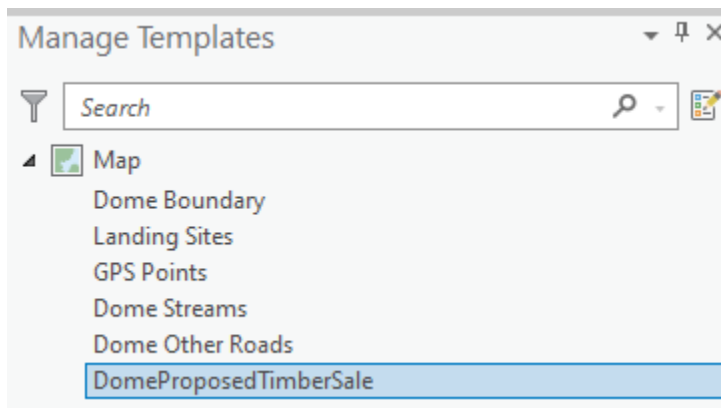
Auto-Complete Po...

Let us say we will need to create many new units for this project because there have been new timber Stand surveys and they want to add some more improvement cuts. We can set up the template for the Dome Proposed Timber Sale so that the first seven fields get attributed automatically, since they will be the same for every Unit.

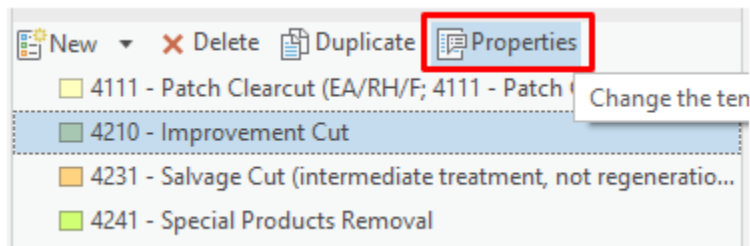
- Open the Create Features pane and right click on the **Manage Templates** button on the right side.



- In the Manage Templates pane **select DomeProposedTimberSale** in the top section.



- In the lower section **select 4210 – Improvement Cut** and then **Properties**.



- The Template Properties window will appear. **Select Attributes** from the menu on the left.

Template Properties: 4210 - Improvement Cut

General
Tools
Attributes

☒ Show Non-Visible Fields

ADMIN_FOREST_CODE	<Null>	<input type="checkbox"/>
ADMIN_REGION_CODE	<Null>	<input type="checkbox"/>
ADMIN_FOREST_NAME	<Null>	<input type="checkbox"/>
PROCLAIMED_FOREST_CODE	<Null>	<input type="checkbox"/>
ADMIN_DISTRICT_NAME	<Null>	<input type="checkbox"/>
ADMIN_DISTRICT_CODE	<Null>	<input type="checkbox"/>
ACTIVITY_UNIT_ORG	<Null>	<input type="checkbox"/>
SALE_NAME	<Null>	<input type="checkbox"/>

6. Fill in the top seven Fields with the information in the screen grab below and then click OK.

Template Properties: 4210 - Improvement Cut

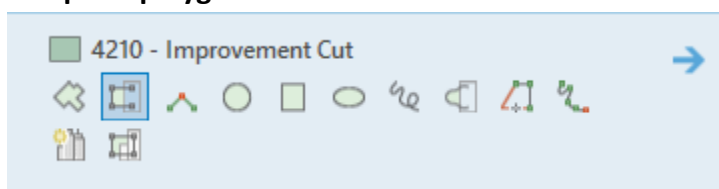
General
Tools
Attributes

☒ Show Non-Visible Fields

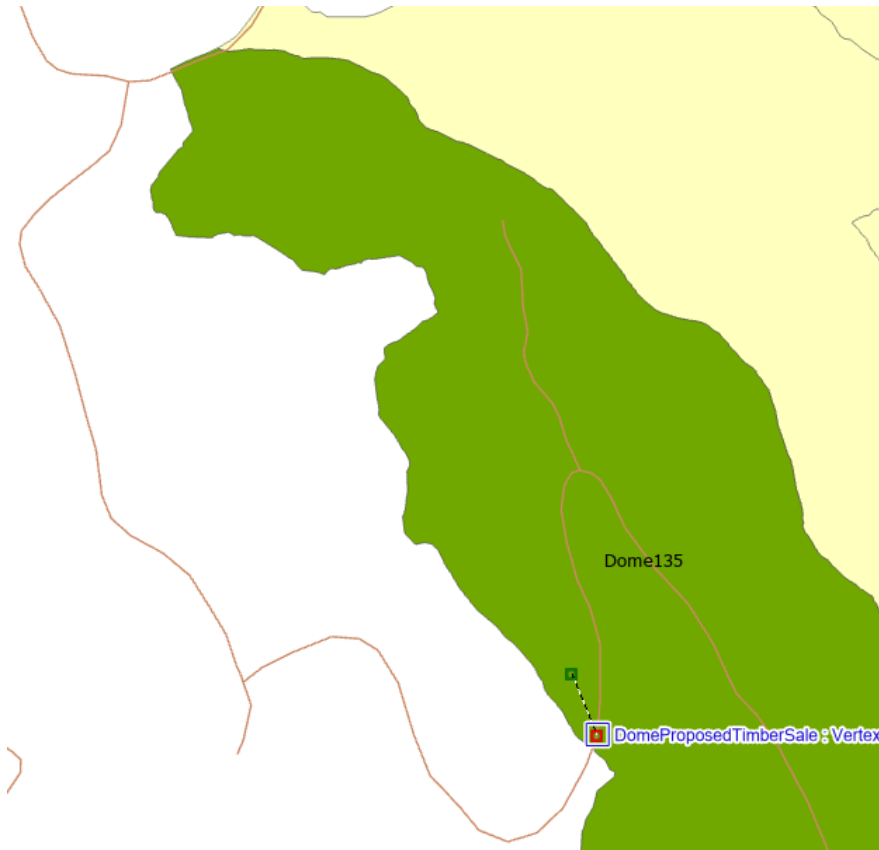
ADMIN_FOREST_CODE	03	<input type="checkbox"/>
ADMIN_REGION_CODE	02	<input type="checkbox"/>
ADMIN_FOREST_NAME	Black Hills National Forest	<input type="checkbox"/>
PROCLAIMED_FOREST_CODE	0203	<input type="checkbox"/>
ADMIN_DISTRICT_NAME	Northern Hills District	<input type="checkbox"/>
ADMIN_DISTRICT_CODE	08	<input type="checkbox"/>
ACTIVITY_UNIT_ORG	020308	<input type="checkbox"/>
SALE_NAME	<Null>	<input type="checkbox"/>
UNIT_ID	<Null>	<input type="checkbox"/>

Now every time a new polygon is created for an Improvement Cut these attributes will automatically be filled in from the Template.

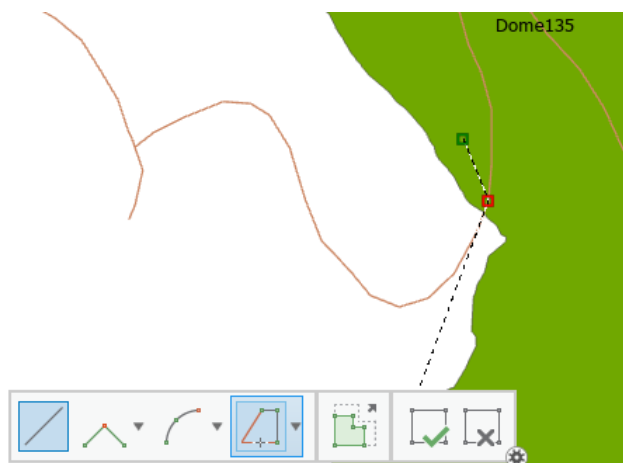
7. Open the Create Features Window and select **Improvement Cut** and then the **Auto-complete polygon tool**.



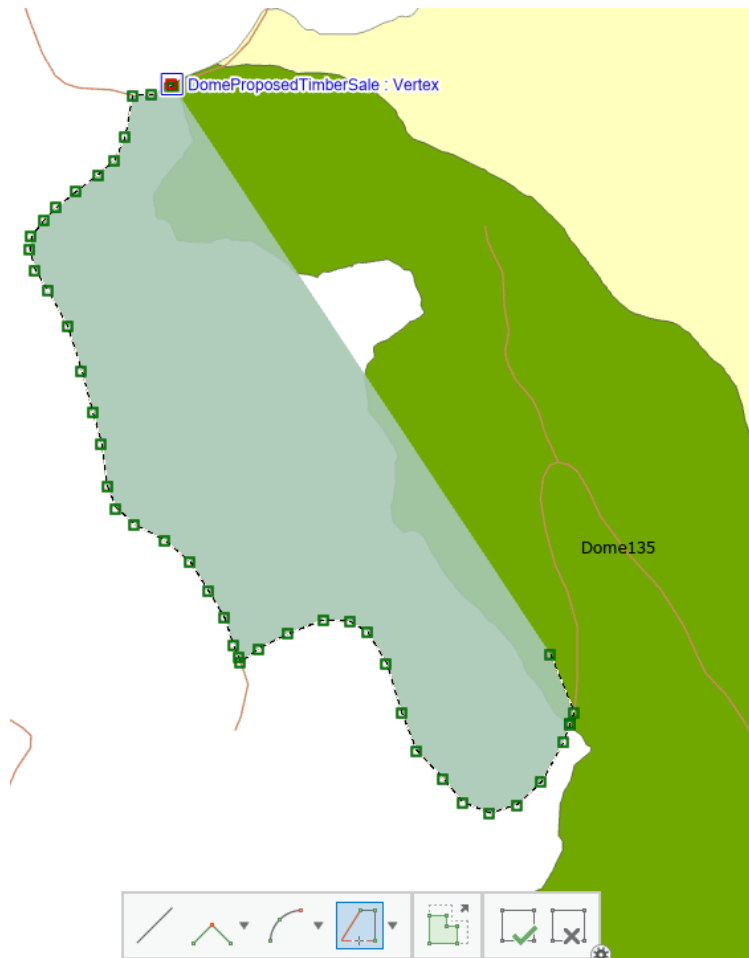
8. Click inside the **Dome135** polygon to begin digitizing then snap to a point along the road still inside Dome135.



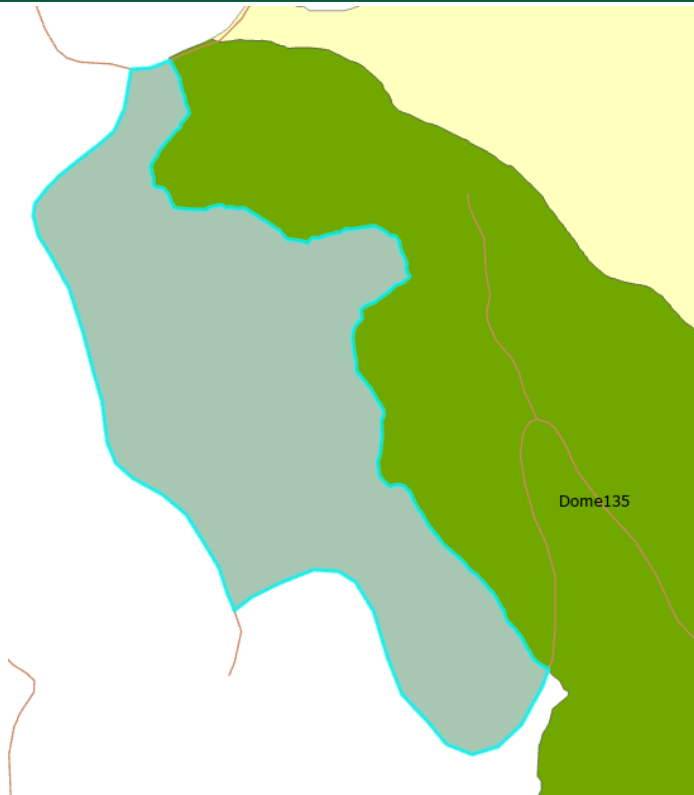
9. Click on the **Trace** tool.



10. Hold your left mouse button down and trace along the road and click when you get to the first vertex of Dome135.



11. **Double-click within the Dome135 polygon** to complete. Notice how the tool automatically created a new polygon exactly coincident with Dome135 without you having to digitize along the adjacent boundary.



12. **Open the Attribute table** for Dome Proposed Timber Sale (Right-click in Contents and click Attributes).

13. **Click on the Menu icon** on the right side of the table and **Select Show all Fields**.

DomeProposedTimberSale X			
Field:	Selection:		
OBJECTID *	SHAPE *	SALE_NAME	
188	Polygon		<input checked="" type="checkbox"/> Show Field Aliases
98	Polygon	Dome	Show All Fields
			Reset Field Order

Notice how the first seven fields after the OBJECT-ID and Shape are filled in automatically from the template. All the other fields are blank except for the ACTIVITY_NAME which was populated when we chose it in the Create Features pane.

14. View the new Selected record in the table and scroll across to the **first empty field** called **SALE_NAME**.

Dome Proposed Timber Sale

Field: Add Calculate Selection: Select By Attributes Zoom To Switch Clear Delete Copy

	ADMIN_DISTRICT_CODE	ACTIVITY_UNIT_ORG	SALE_NAME	UNIT_ID	ACTIVITY_CODE
	08	020308	<Null>	<Null>	<Null>
	08	020308	Dome	Dome187	4111
	08	020308	Dome	Dome186	4111

15. Go to your File Explorer and navigate to your ArcProEditing folder. **Open the Excel spreadsheet called Attributes.xlsx.**

16. The spreadsheet has all the values from the timber survey to fill the empty fields in the proper order and the proper type (e.g. number or text). **Hold your mouse down and scroll across to select all the values. Click <Ctrl> C to copy.**

File	Home	Insert	Page Layout	Formulas	Data	Review	View	Help	ArcGIS Maps	Acrobat
Clipboard	Font	Alignment	Styles	Cells	Editing	Share	Upload			
A1	Dome									
1	R02	A	4A	521 V	Ponderosa Pine (SAF 237)	Unroded tractor logging area	262.934			

17. Return to Pro and click your mouse in the first blank field of the new polygon attributes called **SALE_NAME** then press **<Ctrl> V to Paste.**

The data from Excel will fill in all empty the attributes for the new Unit.

18. **Scroll over to check the results,** so that all the fields up to Cubic Ft./Acre have been filled in correctly. The last two fields are software generated and cannot be edited manually.

Dome Proposed Timber Sale					
Selection: Select By Attributes Zoom To Switch Clear Delete Copy					
Size Code	EV_COMMON_NAME	TIMBER_SUITABILITY_DESC	Cubic Ft./Acre	SHAPE_Length	SHAPE_Area
	Ponderosa Pine (SAF 2...	Unroaded tractor logging area	262.934	1741.99905	89569.4646
	Ponderosa Pine (SAF 2...	Roaded tractor logging area	65.60477	85.538329	0.039079
	Ponderosa Pine (SAF 2...	Roaded tractor logging area	38.56385	2350.960861	153437.797479
	Ponderosa Pine (SAF 2...	Unroaded cable logging area	75.21759	1057.11099	63080.667924
	Ponderosa Pine (SAF 2...	Old burns reduced productivity	592.1102	1139.403578	18009.312649

19. Scroll back to the first field which is the **OBJECTID** field and note that the number is **188**.

20. Scroll back to the Unit_ID field and **change the Unit name to Dome188**.

21. **Click Clear** to unselect any selected features.

22. **Save** your Edits.

23. **Save the Project** and Exit ArcGIS Pro

Congratulations! You have successfully completed this exercise.