

EXERCISE 2

Editing with Topology



Introduction

Topology helps you manage your data and ensure data integrity. ArcMap has two types of Topology. Map topology allows you to edit features with coincident boundaries at the same time and preserve the feature relationships. Geodatabase topology allows you to set rules for your data, check for features that do not comply with the rules, and use the specialized tools to fix the errors.

Objectives

- Learn to use the Topology to edit features within a dataset that have coincident boundaries as well as features within different datasets that have coincident boundaries.

Prerequisites

- Completion of ArcMap Quick Start and ArcMap Editing Webinars or equivalent experience.
- Install Esri ArcMap 10.7 or higher on local computer or have access to and experience using Citrix.
- Download and unzip the data and exercises.



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In this exercise we will use Topology to help edit several datasets. In geodatabases, topology is the arrangement that defines how point, line, and polygon features share coincident geometry. First we will use Map Topology to align the common boundaries of several different layers using the tools on the Topology toolbar. Next we will create a Geodatabase Topology layer and set the data relationship rules within and between two layers. Then we will use the Geodatabase Topology Error Inspector window to locate the errors, and the specialized tools to fix the errors.

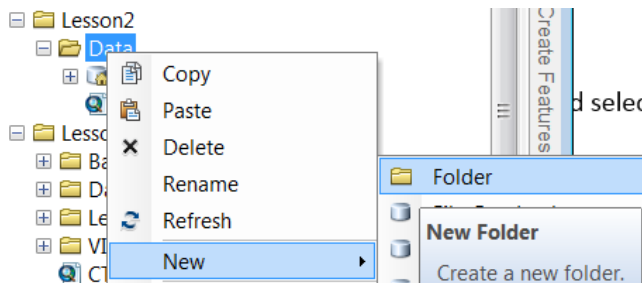
A. Prepare the Map Document

1. **Launch a blank ArcMap** either locally or in Citrix.

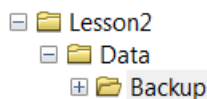


2. In Catalog, right click on the **../AdvancedEditing/Lesson2/Data** folder and **select New Folder**.

Always back up your original data before starting an editing session. This will give you data to return to if you make an editing error, or if there is a system corruption and you need to restore a layer. Better to lose a few edits, than lose the entire dataset.

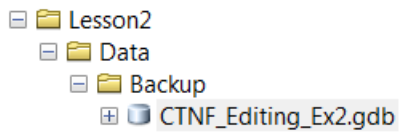


3. **Name the new folder Backup.**



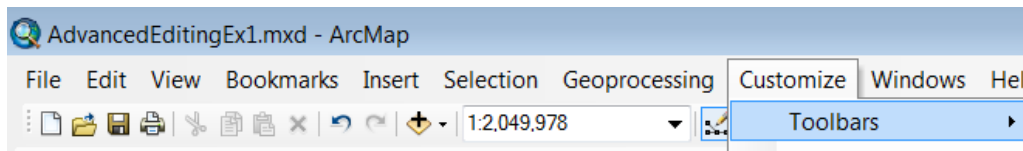
4. **Right click on the CTNF_Editing_Ex2.gdb and select Copy. Right click on the Backup folder and select Paste.**

You are now safe to start editing.

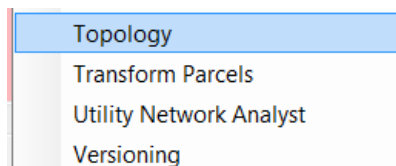


5. Click **File | Open** and select the following map document:
../AdvancedEditing/Lesson2/Data/CTNF_Topology_Ex2.mxd

6. Click the **Customize** menu and choose **Toolbars**.

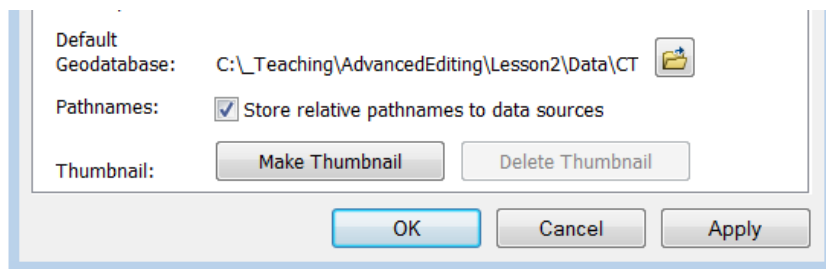


7. Select the **Topology toolbar**, and dock as desired.



8. Set the default geodatabase for your map document. Click **File | Map Properties**.
Set your ArcMap Properties go to **File | Map Document Properties** to open the window.

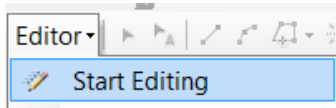
9. In the Map Properties window, click “Store relative pathnames to data sources” and set the default geodatabase to: **../AdvancedEditing/Lesson2/Data/CTNF_Editing_Ex2.gdb**.
Click OK.




10. **Save** the map. 

B. Set the Map Topology

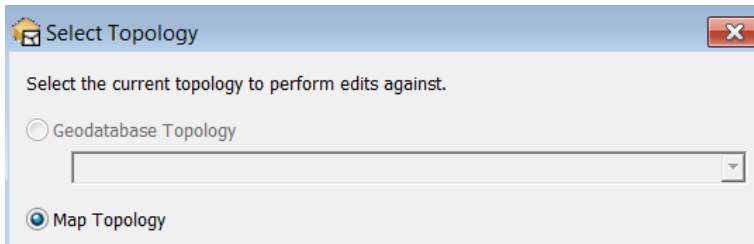
1. Start an edit session.



2. The topology toolbar should now show some active tools. **Click the Select Topology button**  to open the window.



3. In the Select Topology Window **click the Map Topology button**.



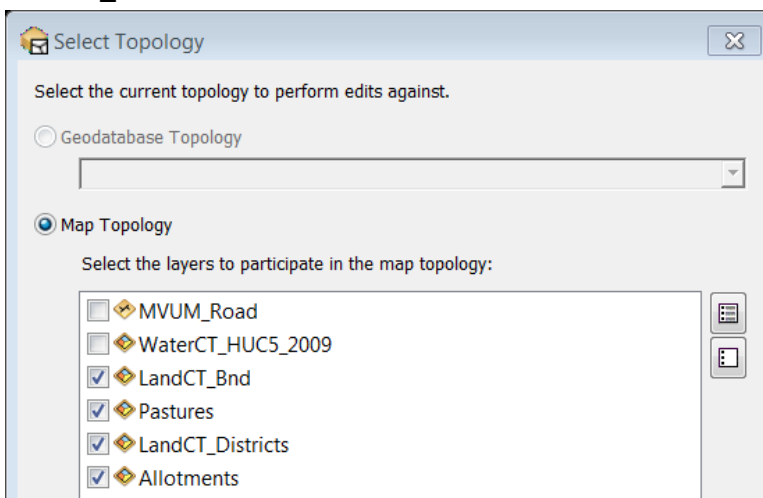
4. **Select the following layers** to include in the Map Topology:

LandCT_Bnd

Allotments

Pastures

LandCT_Districts.



5. Click **OK**.



C. Edit Using Map Topology - Modify Edge Tool

For this exercise scenario we will say that the GIS Specialist and Range Management Specialist have decided to modify the Allotments and Pastures data to match the LandCT_Bnd and LandCT_Districts where appropriate. Having the data modified correctly will make the outputs more accurate as allotments will not show up in the wrong Districts.

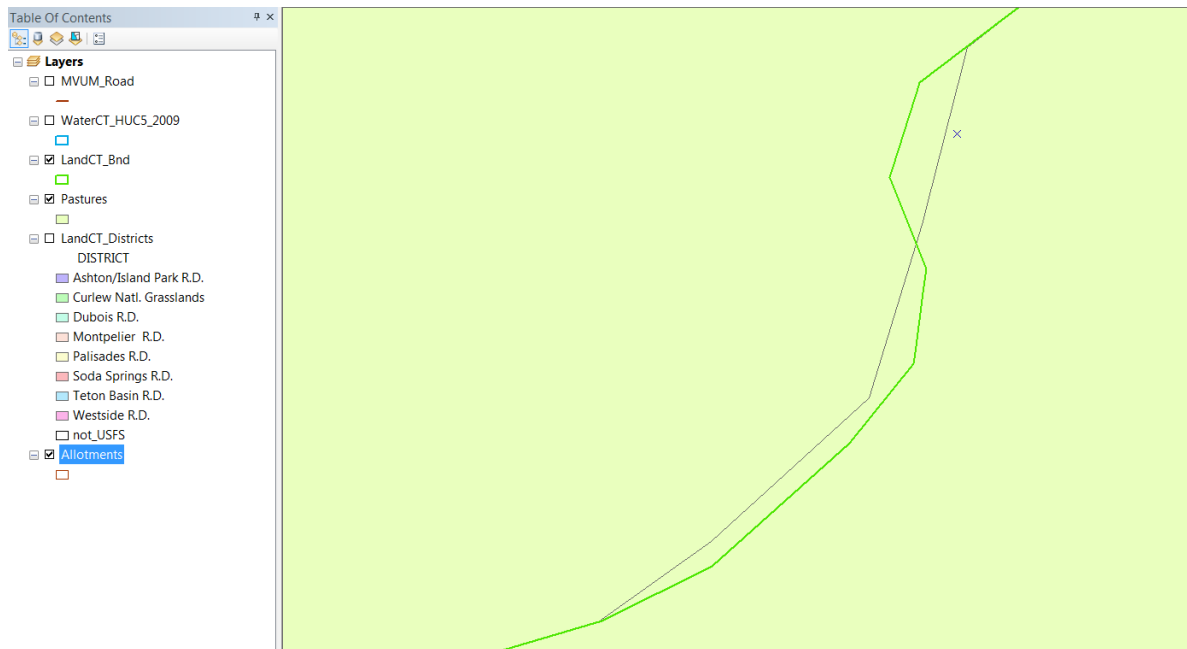
WARNING: Always work with your GIS Specialist that is the appropriate data steward for each data layer before making any edits. Some datasets are maintained at a National level through a governance process and should not be edited unless the proper protocols are followed. This exercise is simply to show you the mechanics of editing coincident data.

1. **Turn on the three layers to be modified** (Allotments, Pastures, LandCT_Bnd). Only checked features in the TOC are edited when you use the topology tools with a map topology.
2. **Move the Pastures layer up directly below the LandCT_Bnd** layer so that you can see and compare with the Pastures boundaries.


We will now use the topology tools to edit both the Pastures and the Allotments data at the same time to align with the LandCT_Bnd and LandCT_Districts data. The topology tools move both features in the Pastures and Allotments datasets, thus preventing gaps and overlap errors like we demonstrated in Lesson 1.

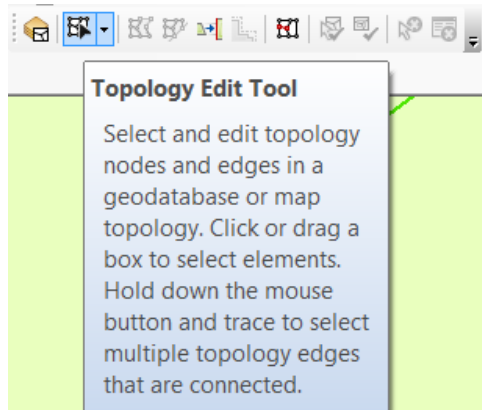
3. Click on **Bookmark | Zoom to Edit - Modify Edge Tool**. Notice how parts of the Forest boundary layers run along the Allotments and Pastures layer, but are **not exactly coincident**.



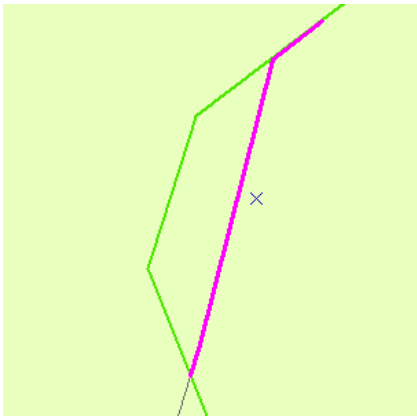


Unfortunately, this is a common occurrence in Forest Service GIS data, as many datasets were created separate from each other, or the data alignment digitizing tools like Snapping or Trace were not used. Consequently, the datasets do not line up with each other.

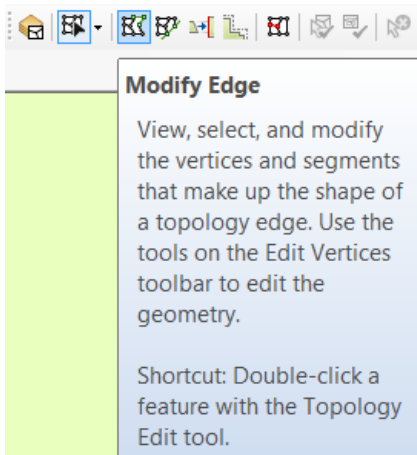
4. Click on the **Topology Edit Tool**  to select a segment to edit.
Some tools need to have the feature selected before they become available on the toolbar. You can either click directly on the desired feature, draw a box on or around multiple features, or use the dropdown and select the trace option to choose the feature.




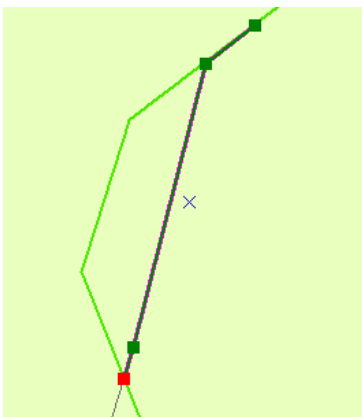
5. **Zoom in as needed. Select a segment from the Pastures/Allotment layer to edit.** It will be highlighted with a solid pink line.



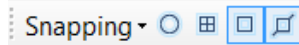
6. Click the **Modify Edge Tool**. 



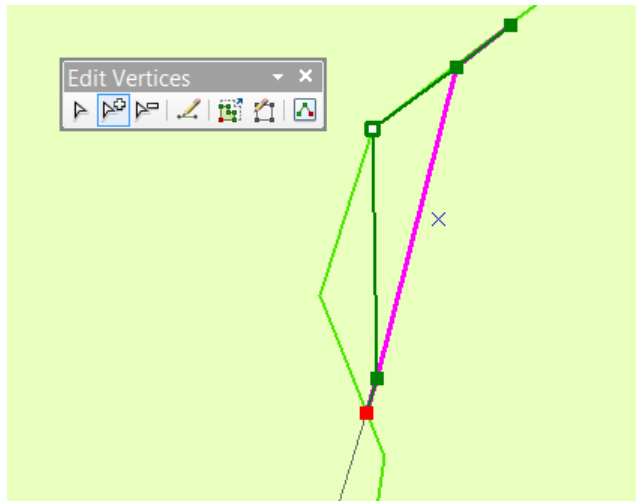
7. Use the **Zoom In tool**  to zoom to area shown below. Click on the selected segment to show the vertices and edges to edit.



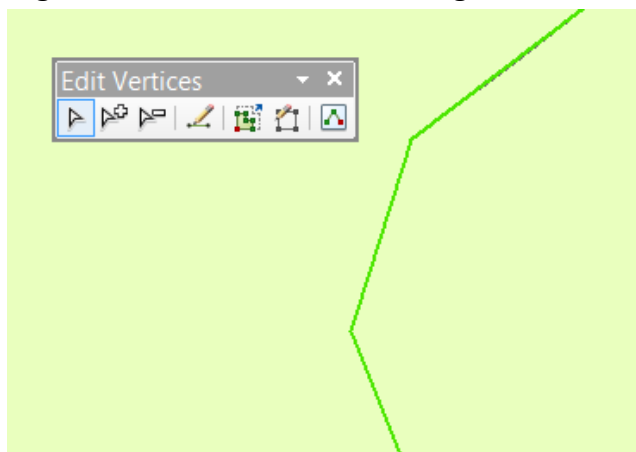
8. Be sure that **Snapping** is on, and that the **Vertex** and **Edge** tools are selected.




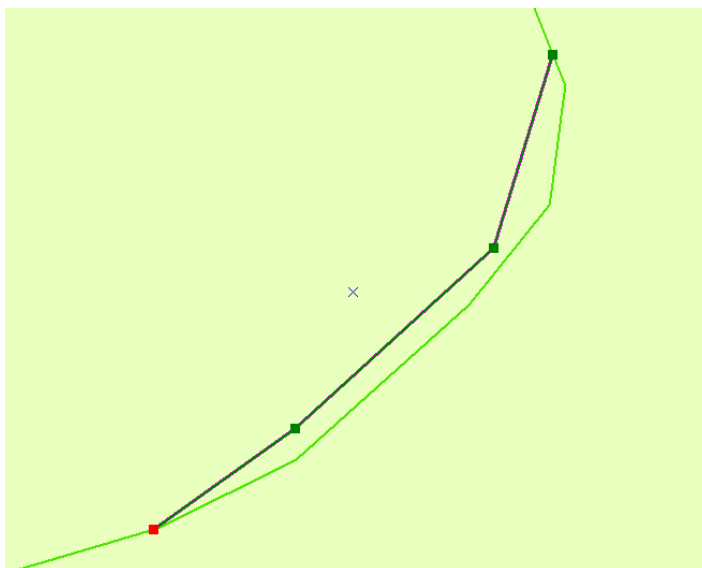
9. Use the tools on the **Edit Vertices** toolbar to align the boundaries. Click on **Add Vertex** tool, and snap the new vertex to the boundary vertex.



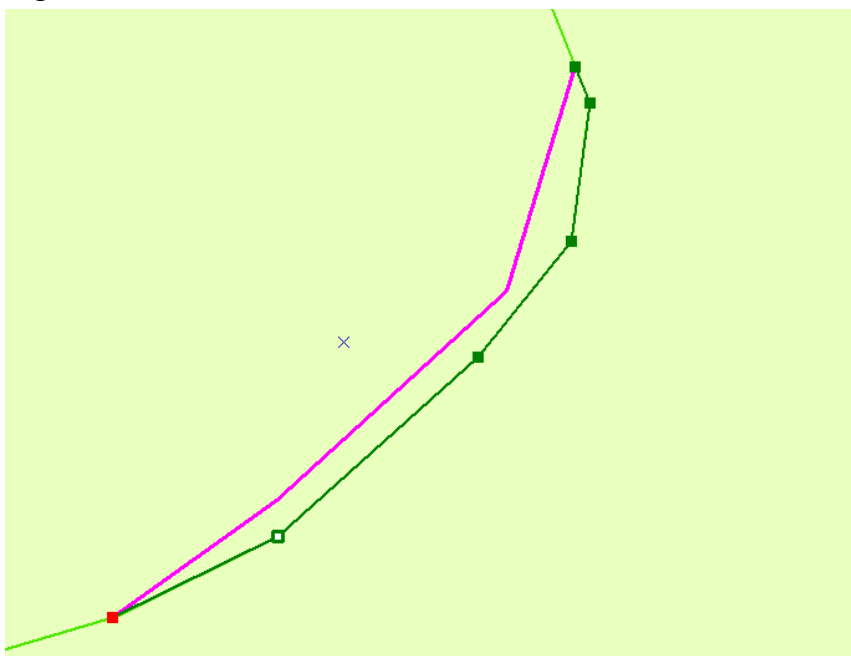
10. Add and move vertices as needed to match a vertex to each of the vertices on the Land_CT_BND layer. **Align the Pastures/Allotment segment to the Land_CT_Bnd segment. We will continue editing on the next page.**



11. If needed, click Bookmarks | Zoom to Edit - Modify Edge Tool. With the **Topology Edit Tool**  **double click to select** the next segment to fix in the Bookmark extent.

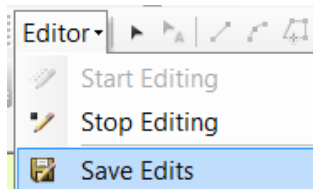


12. Use the Modify Edge Tool to select each vertex and **align the Pasture/Allotment segment with the Land_CT_Bnd segment**. As needed, click the **Add or Delete Vertex button** on the Edit Vertices toolbar and drag vertex to snap to the Land_CT_Bnd segment as needed.



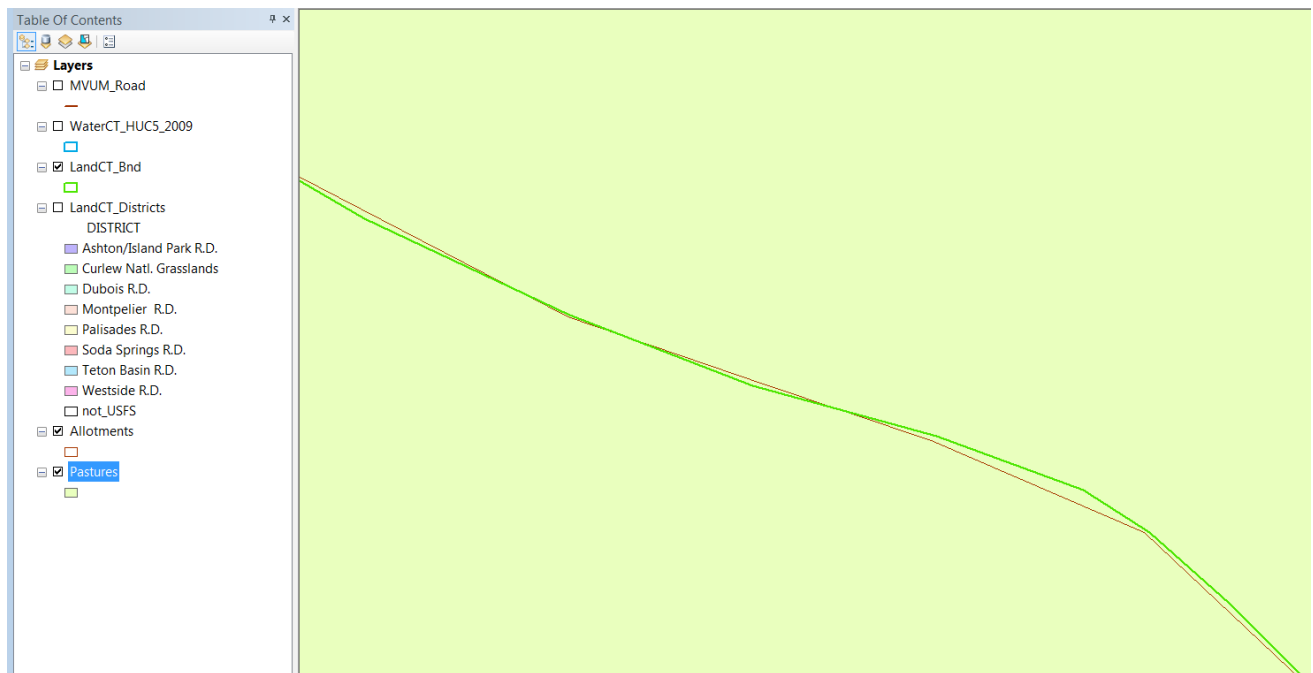
13. Click Finish Sketch . 

14. Click **Save Edits** and the sketch should become the newly aligned feature.

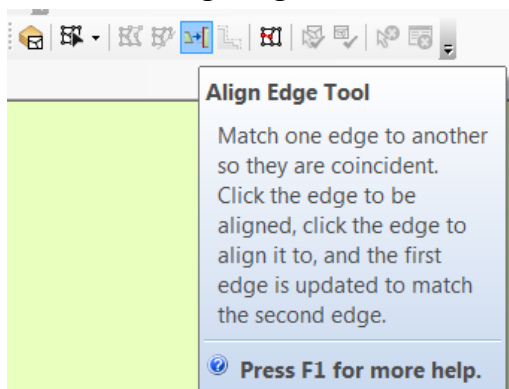


D. Edit Using Map Topology – Align Edge Tool

1. Click on **Bookmarks | Zoom to Edit - Align Edge Tool** to see a close-up of the misaligned boundaries.



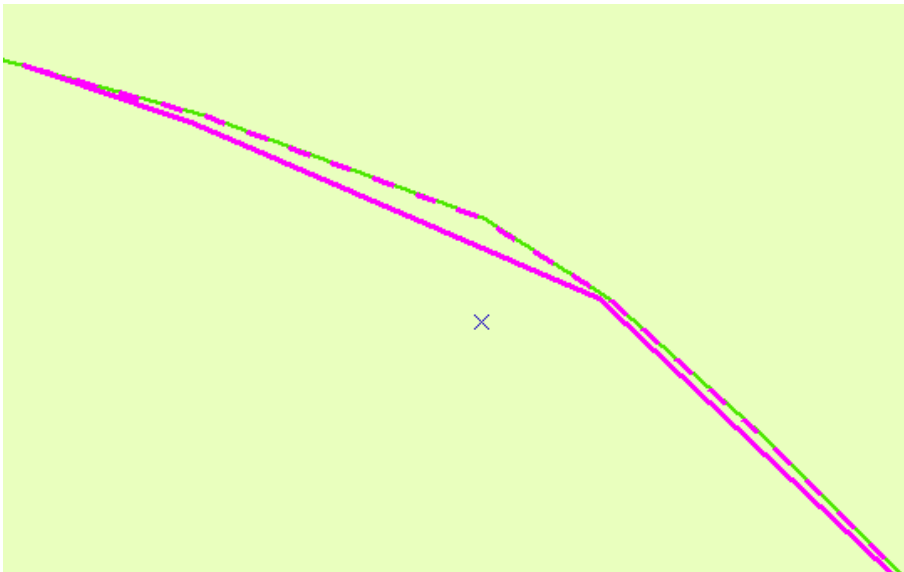
2. Click on the **Align Edge Tool**  to activate it.



3. **Hover over a segment of the Pastures/Allotment layer** to make sure it is the one you want to edit, pink dashes will highlight the selected feature. **Click to select the segment** and it will turn solid pink (you may want to zoom in even more to see the changes more clearly).



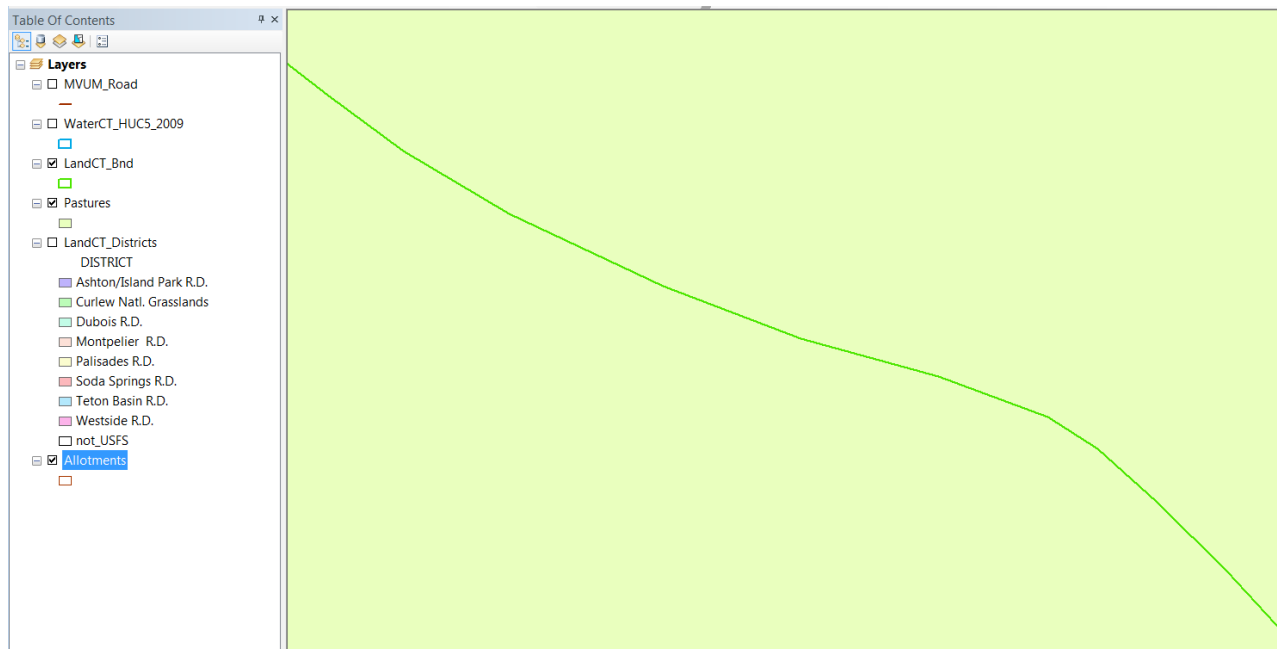
4. **Next hover over the segment of the Land_CT_Bnd layer that you want to align the Pastures segment, it will then be highlighted with a dashed pink line.**



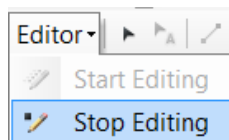
5. **Click the Land_CT_Bnd segment, the selected Pastures segment (as well as the Allotments layer below) will jump and align to it.**



6. **Use the Align Edge Tool to complete the edits until all layers are aligned in the Bookmarked extent.**

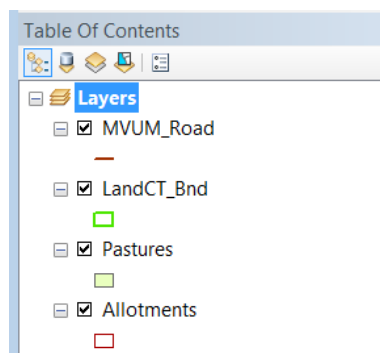


7. Click **Stop Editing and Save Edits**.

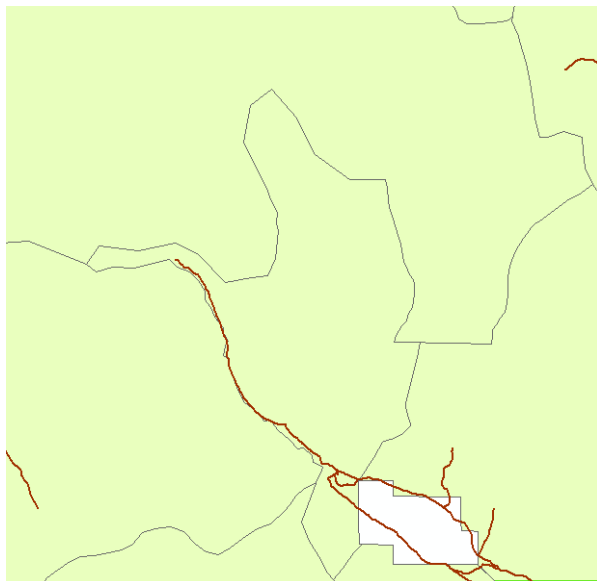


E. Edit Using Map Topology – Reshape Edge Tool

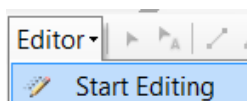
1. Click to turn on the **MVUM_Roads** in the TOC.




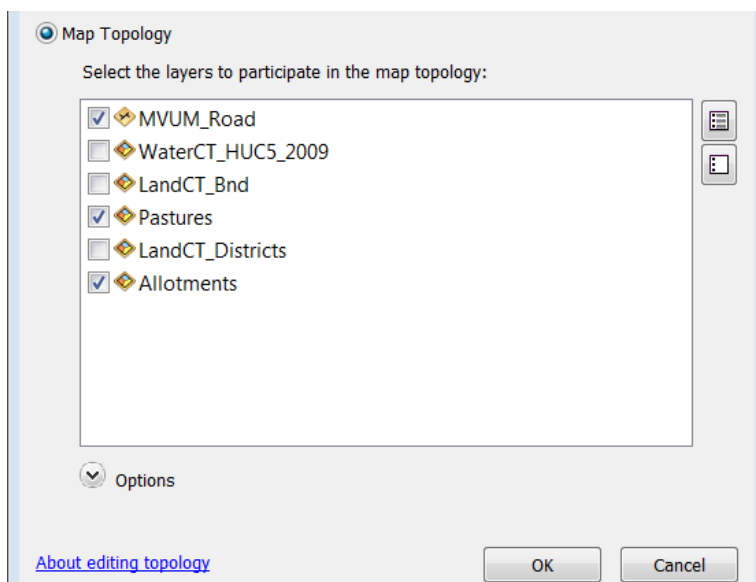
2. Click **Bookmarks | Zoom to Edit - Reshape Edge Tool** to zoom in to another misaligned area.




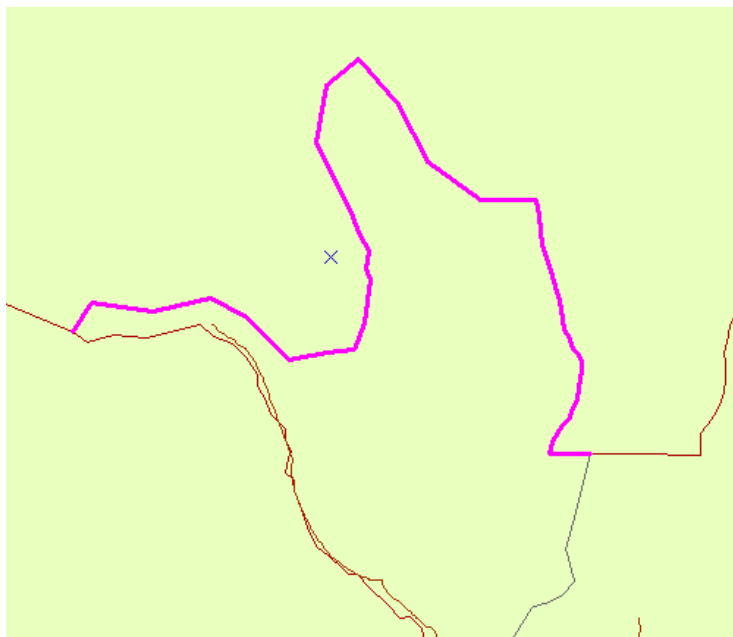
3. Click **Start Editing** on the Editor Toolbar.




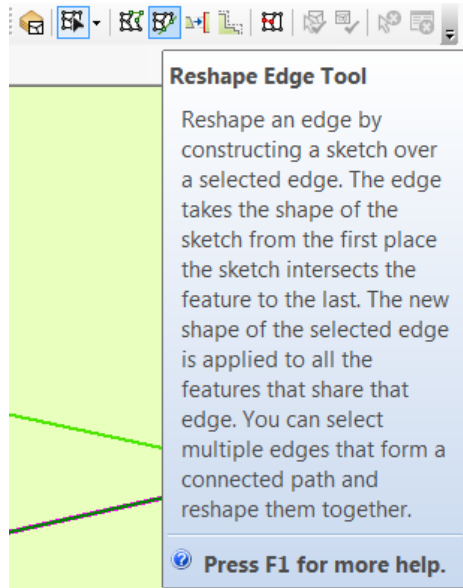
4. Click the **Select Topology** button  on the Topology Toolbar. Keep **Map Topology** selected, but **change the layers to MVUM_Road, Pastures, and Allotments**. Click **OK**.



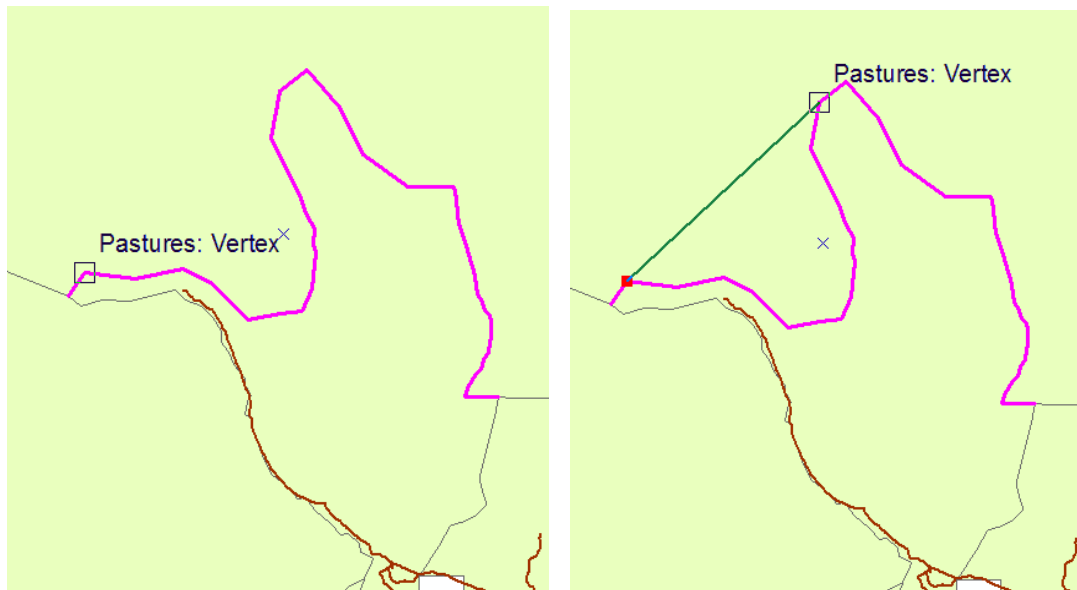
5. **Make sure that all three Topology layers are turned on in the TOC .**
6. Click on the **Topology Edit Tool**  **to select the Pastures/Allotments segment to edit.** Single click the polygon as shown in the screengrab below.



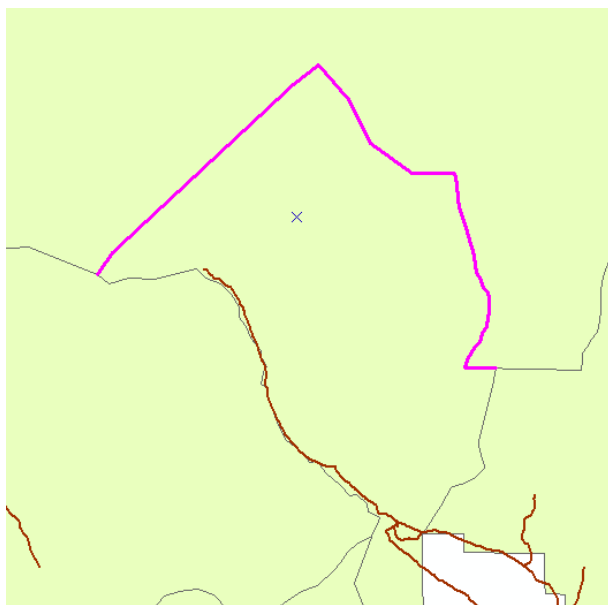
7. Click the **Reshape Edge tool**.  This tool will let you align just a portion of the selected feature.



8. **Start the new line by snapping to the vertex on the segment you want to edit, near the northwest end, then hover over the vertex across the curve.**



9. **Double click on the second vertex to reshape the polygon** in both the Pastures and Allotments layers at the same time.




10. Click on **Save Edits**.

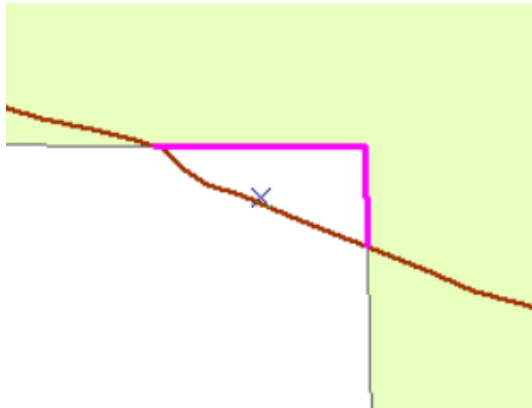
11. Click on the **Align to Road** Bookmark.




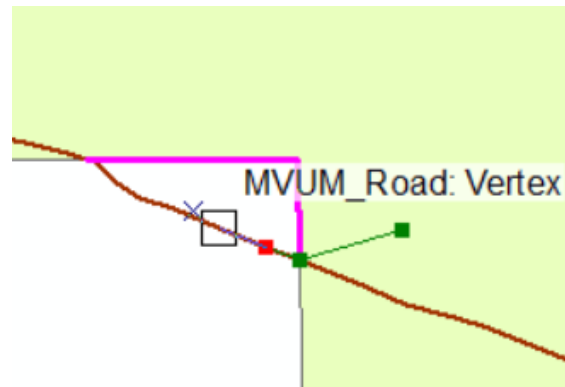
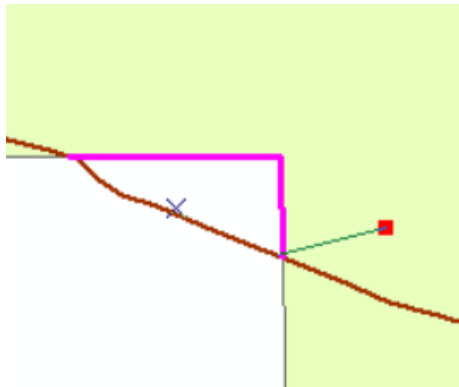
12. Make sure that you have **Vertex Snapping** activated on the Snapping toolbar.



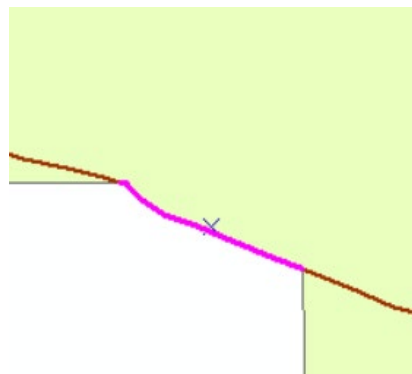
13. Using the Topology Edit Tool  select the Pasture/Allotment boundary as shown below.



14. Use the Reshape Edge Tool  to start digitizing inside the Pastures/Allotment layer, digitize along the road by snapping to each vertex.



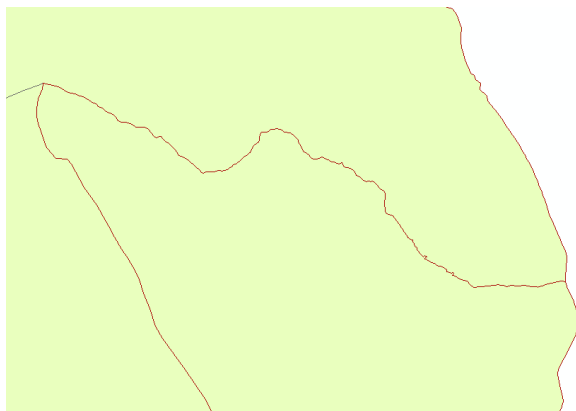
15. When you get back inside the Pastures/Allotment polygon double click to end and the polygon will jump to the road.




16. Click **Save Edits**.

F. Edit Using Map Topology – Generalized Edge

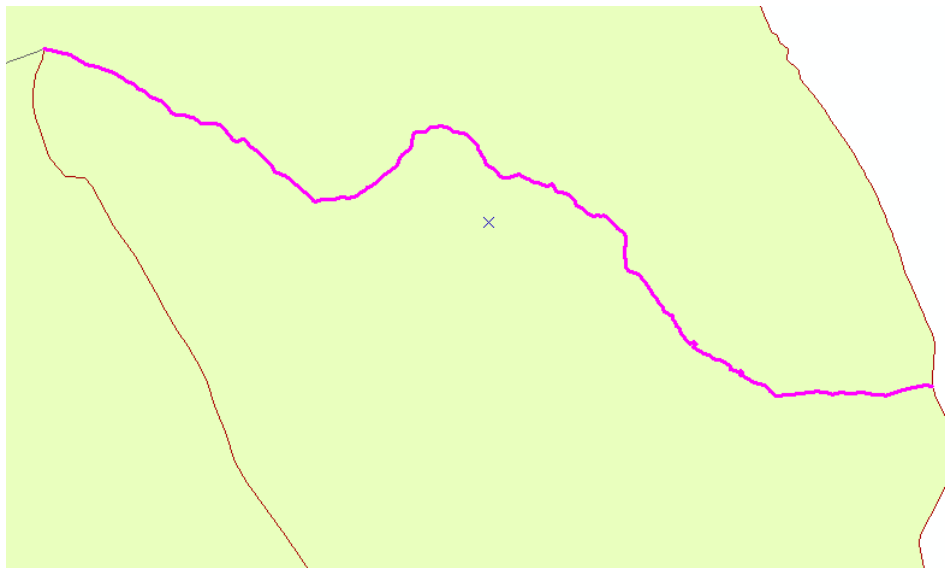
1. Click on **Bookmarks | Allotment Boundary**.




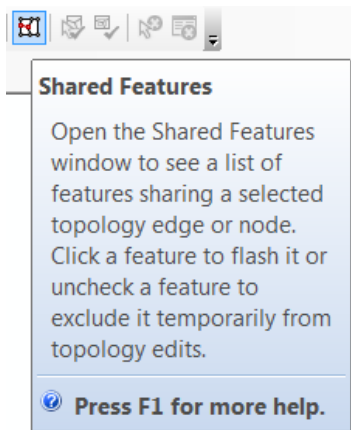
2. Using the **Topology Edit Tool**  click the segment of the Allotment/Pasture boundary, that has a generally east/west direction, to select it.

Notice how this perimeter is much more “squiggly” than the vertical perimeters,

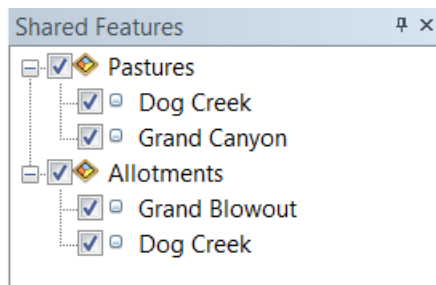
meaning it probably has many more vertices.



3. Click the **Shared Features tool**  on the Topology Editing toolbar to see which Allotments and Pastures this boundary represents.



4. The Shared Boundary window will display showing the names of the Allotments and Pastures that share the boundary line. **Click X to close out** of the Shared Boundary window.

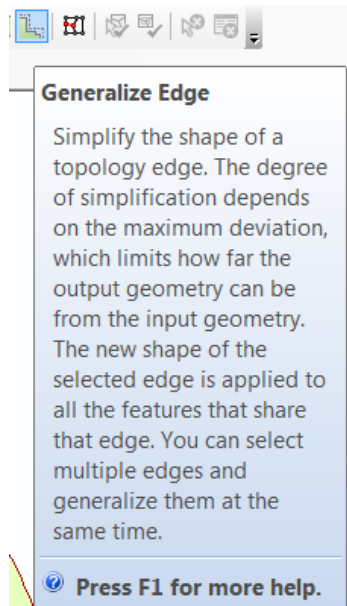


For this scenario, the Range Management Specialist says that the squiggles in this line are simply an artifact of the digitizing style and do not represent real features on the ground. Since this large number of vertices are not spatially necessary, we are going to use the Generalize tool on the Topology Toolbar to make this line more consistent with the other boundaries.

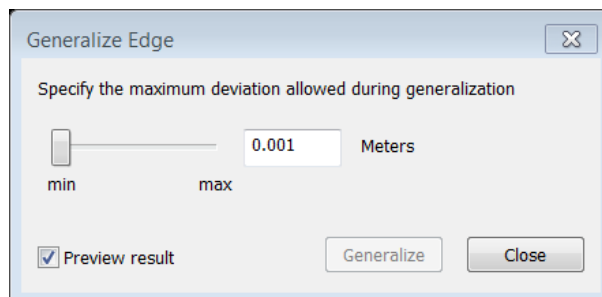
5. Click the **Bookmarks | Zoom to Edit – Generalize Tool** in order to see the generalizations clearer.



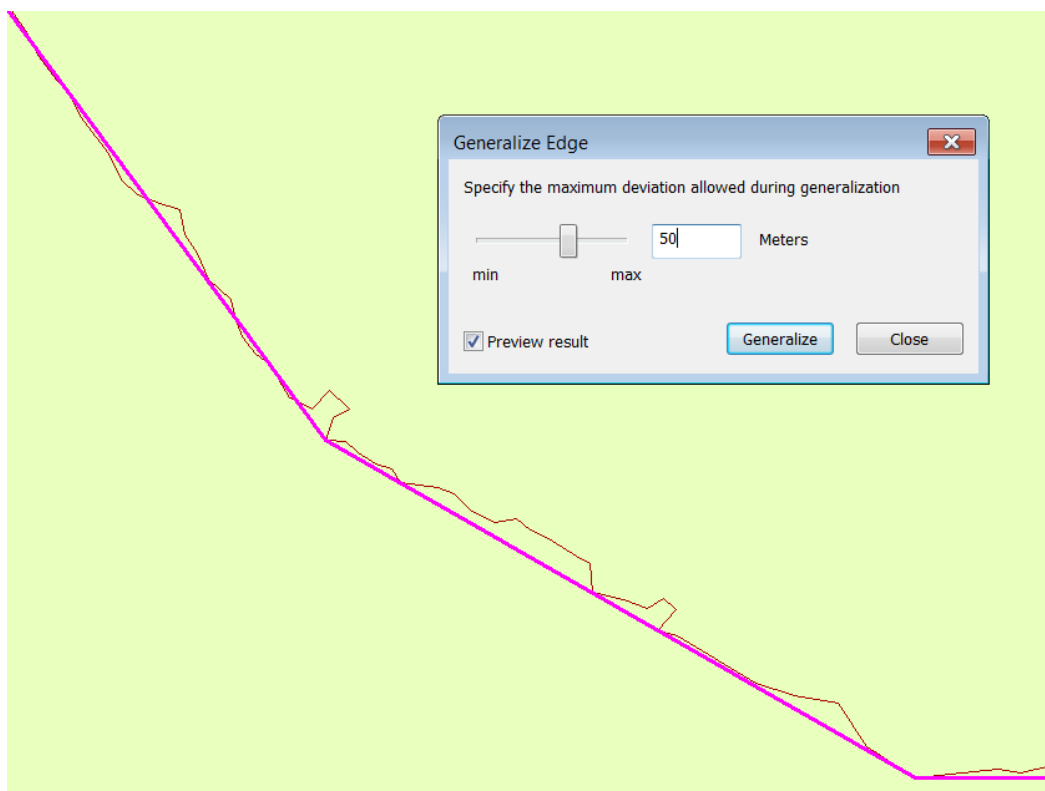
- Click the **Generalize Edge tool**  on the Topology Toolbar.



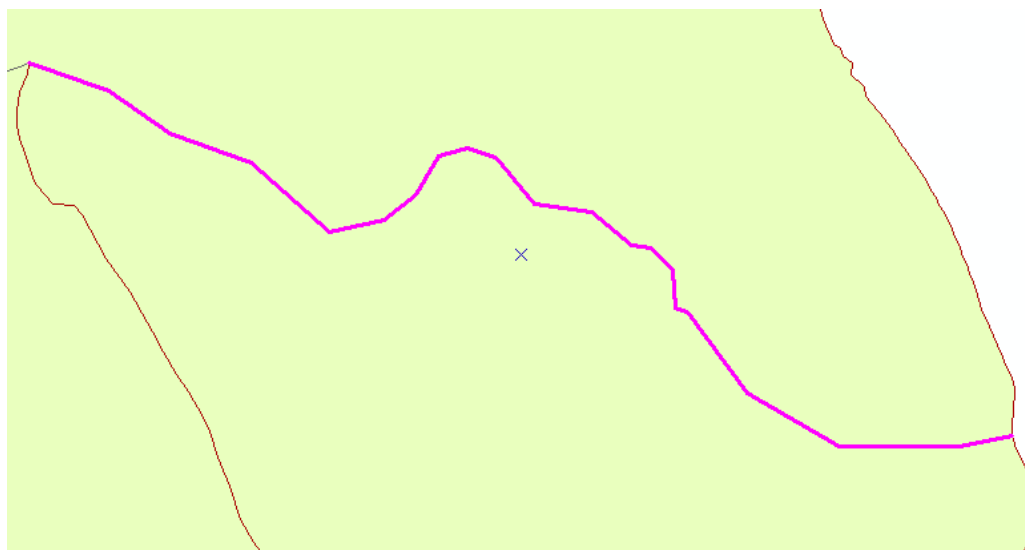
- This opens the Generalize Edge window where you can select the maximum deviation allowed during generalization. If you **click Preview Results** you can see what it will look like in the Data Frame.



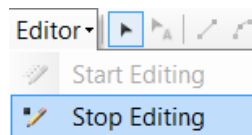
- You may preview different distances, but we are going to **set the max to 50 meters** to smooth the shared boundary as shown by the pink line. **Click the Generalize button** to alter the boundary lines for both the Allotments and the Pastures layers.



9. **Zoom out to the Allotment Boundary Bookmark** to see the end result.



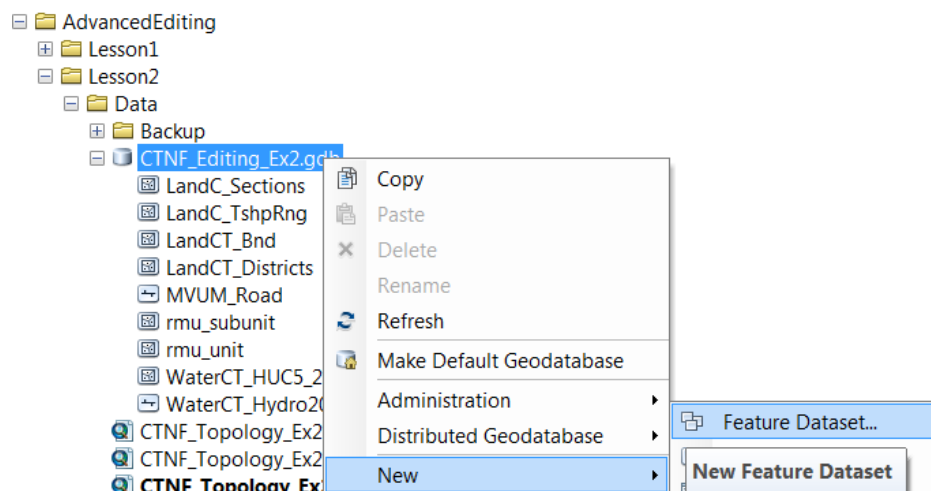
- Click **Stop Editing**, click **Yes** to save edits.



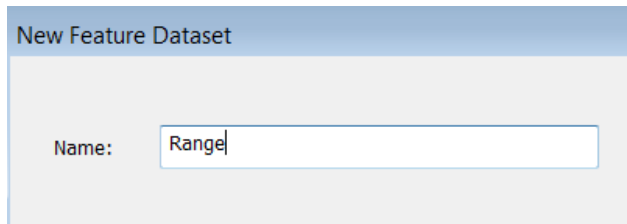
G. OPTIONAL - Create a Geodatabase Topology

There are many topology rules you can implement in your geodatabase, depending on the spatial relationships that are most important for your organization to maintain. You should carefully plan the spatial relationships you will enforce on your features. Some topology rules govern the relationships of features within a given feature class, while others govern the relationships between features in two different feature classes. For a poster of the available topology rules and examples of them, see the [ArcGIS Geodatabase Topology Rules](#) PDF.

- Open the Catalog window. Right click and select New | Feature Dataset** within the `../AdvancedEditing/Lesson2/Data/ CTNF_Editing_Ex2.gdb`



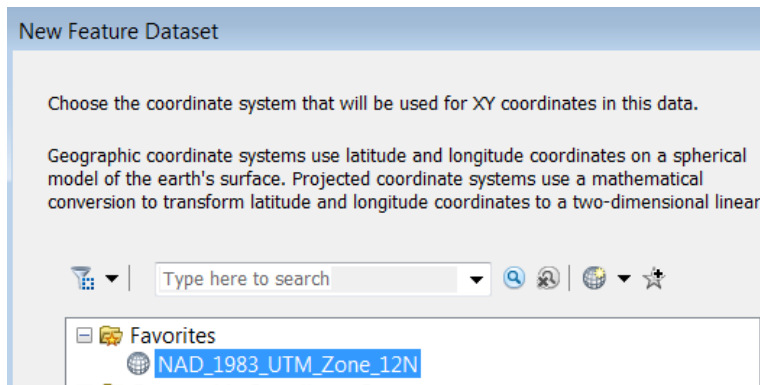
2. **Name the Feature Dataset “Range”** and click **Next**.



New Feature Dataset

Name:

3. **Make sure the spatial reference is the same as the data frame and the layers, click NAD_1983_UTM_Zone_12N. Click Next.**



New Feature Dataset

Choose the coordinate system that will be used for XY coordinates in this data.

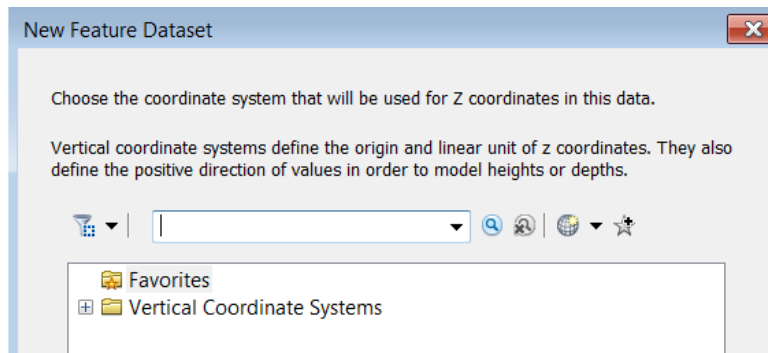
Geographic coordinate systems use latitude and longitude coordinates on a spherical model of the earth's surface. Projected coordinate systems use a mathematical conversion to transform latitude and longitude coordinates to a two-dimensional linear

Type here to search

Favorites

NAD_1983_UTM_Zone_12N

4. **Click Next** leaving the vertical coordinate system page blank.



New Feature Dataset

Choose the coordinate system that will be used for Z coordinates in this data.

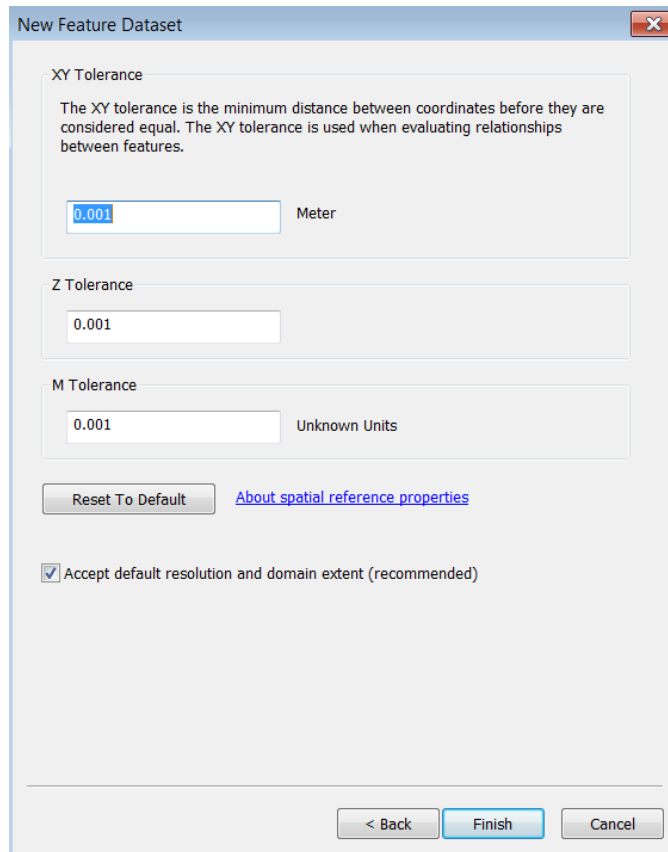
Vertical coordinate systems define the origin and linear unit of z coordinates. They also define the positive direction of values in order to model heights or depths.

Type here to search

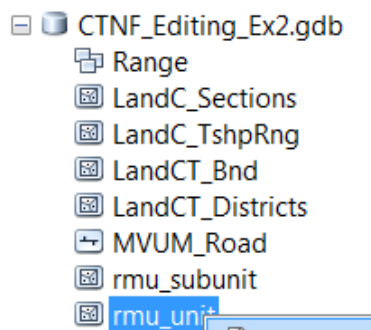
Favorites

Vertical Coordinate Systems

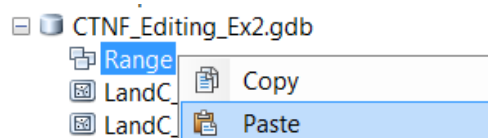
5. **Accept the XY Tolerance defaults** by clicking **Finish** to create the new Feature Dataset.



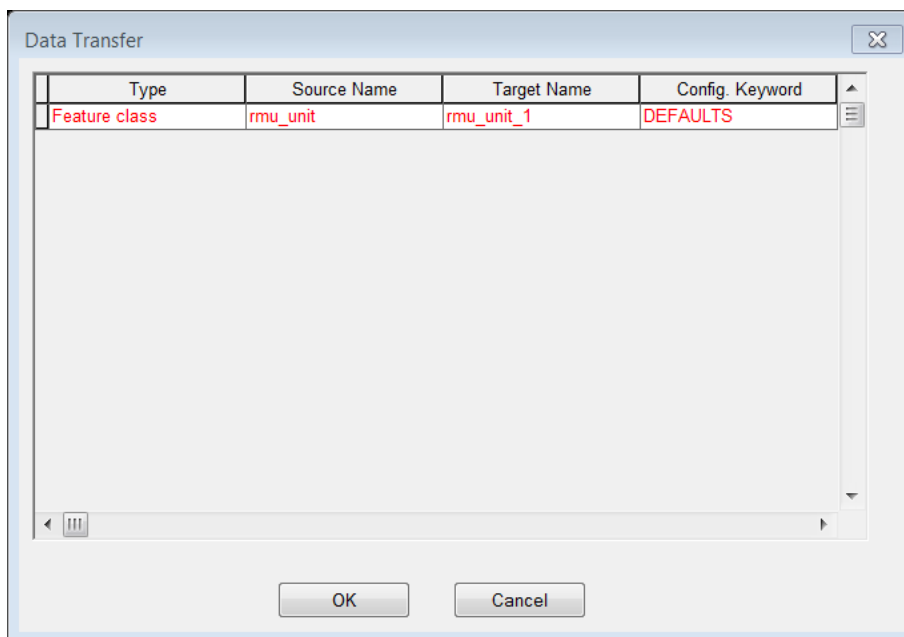
6. In Catalog, **right click on rmu_unit** (Allotments) feature class and select **Copy**.



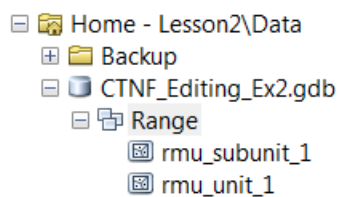
7. In Catalog, **right click on the Range** Feature Dataset and select **Paste**.



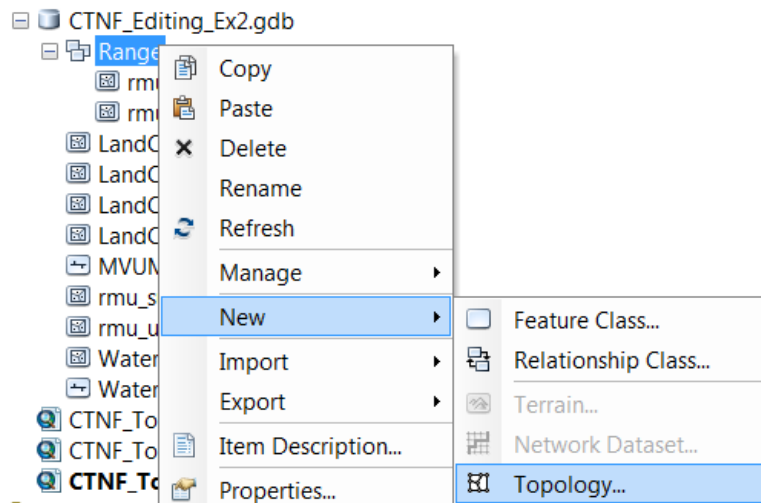
8. The dialog window will pop up with red warning text saying that it will named the target layer **rmu_unit_1** since there cannot be two feature classes in the same geodatabase with the same name. **Click OK.**



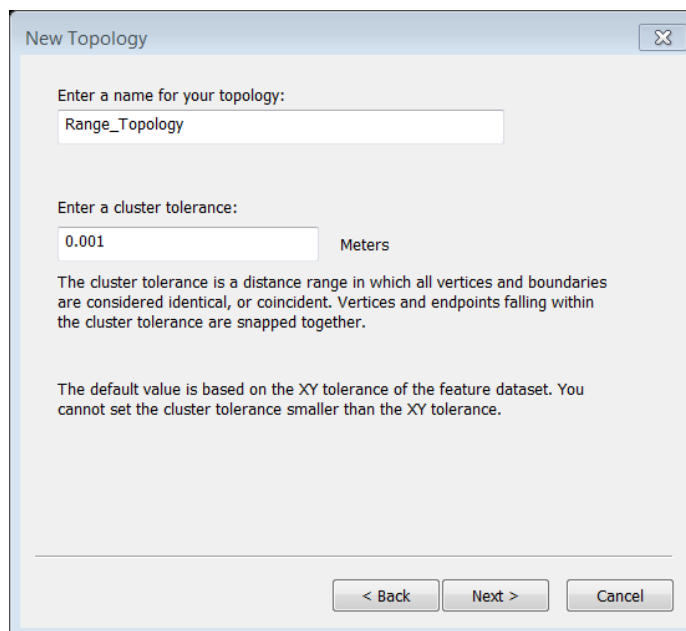
9. Follow the same steps to **Copy and Paste the rmu_subunit** feature class into the Range feature dataset.



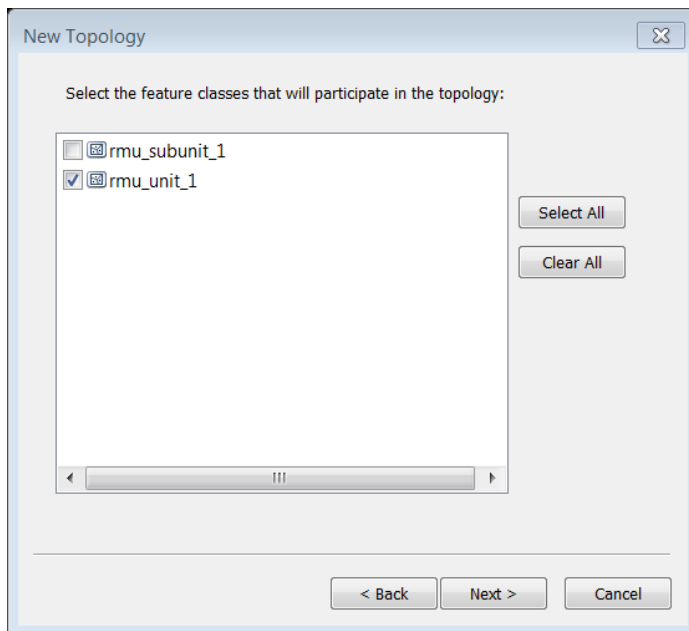
10. **Right click** on the Feature Dataset and select **New | Topology**.



11. **Click Next** in the first window explaining Topology, and **accept the default name and cluster tolerance** in the second New Topology window. **Click Next**.



12. Select **rmu_unit_1** as the feature class to participate in the topology. Click **Next**.



New Topology

Select the feature classes that will participate in the topology:

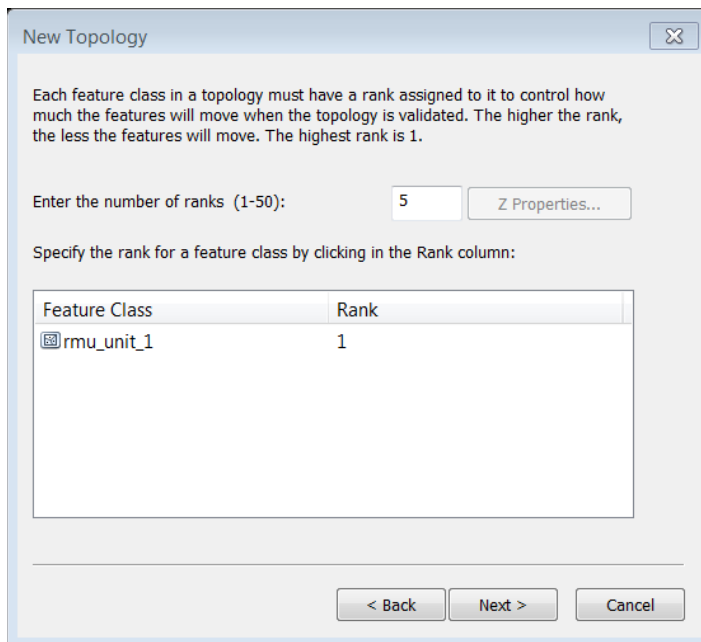
- ☐ rmu_subunit_1
- ☒ rmu_unit_1

Select All

Clear All

< Back Next > Cancel

13. Since there is only one feature class you can ignore the ranking window and click **Next**.



New Topology

Each feature class in a topology must have a rank assigned to it to control how much the features will move when the topology is validated. The higher the rank, the less the features will move. The highest rank is 1.

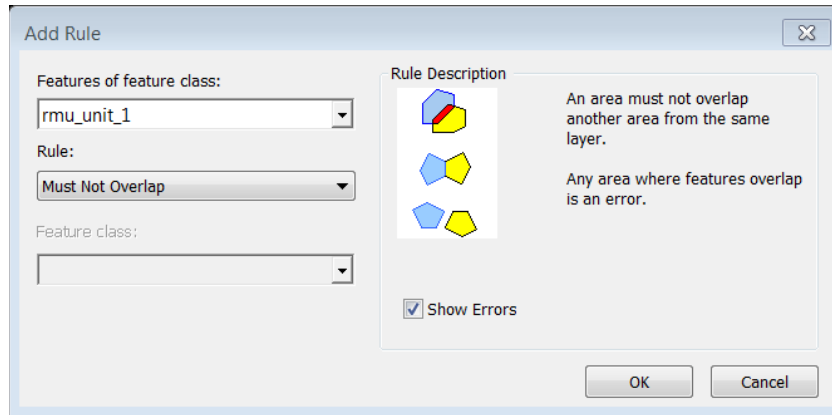
Enter the number of ranks (1-50): Z Properties...

Specify the rank for a feature class by clicking in the Rank column:

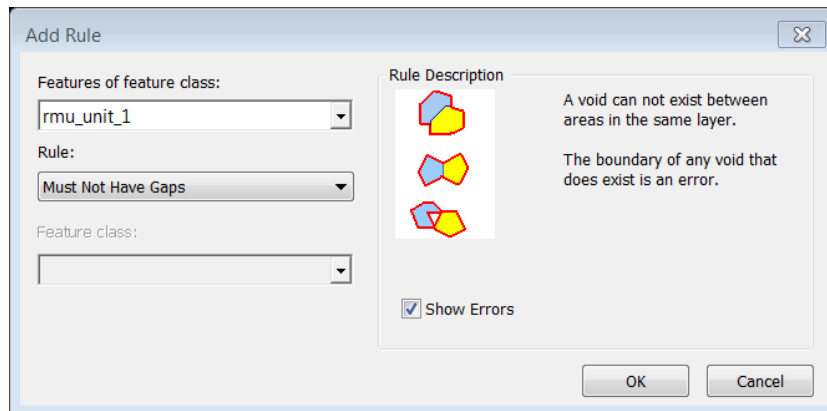
Feature Class	Rank
rmu_unit_1	1

< Back Next > Cancel

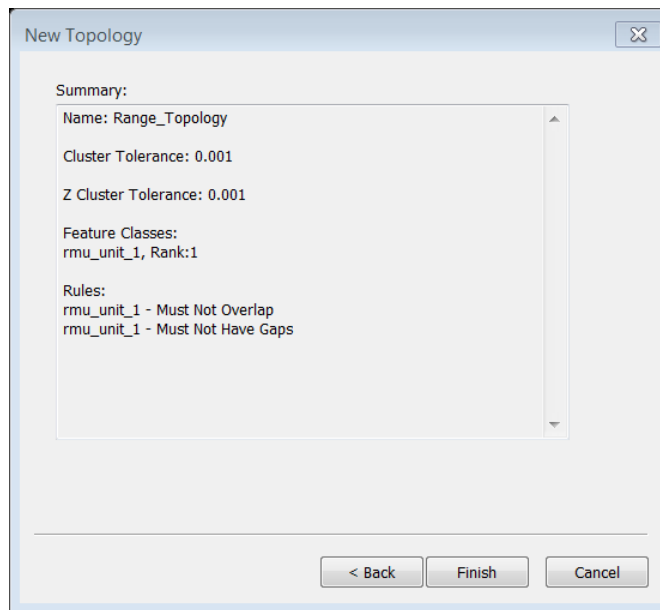
14. Click the **Add Rule** button and select the first default rule that **rmu_unit_1 Must Not Overlap** and click **OK**.



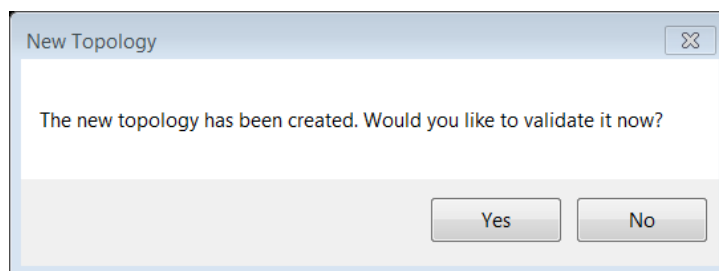
15. Click **Add Rule** again and select **rmu_unit_1 Must Not Have Gaps**. Click **OK**.



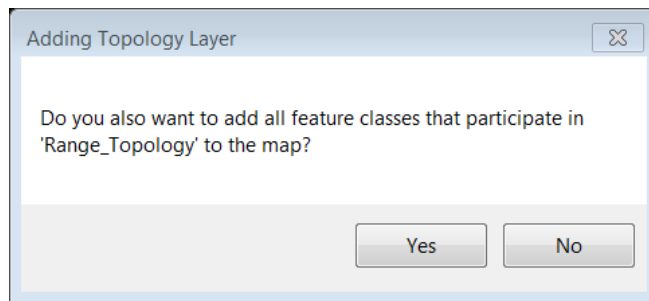
16. Read through the summary to make sure the Topology is correct and **click Finish**.



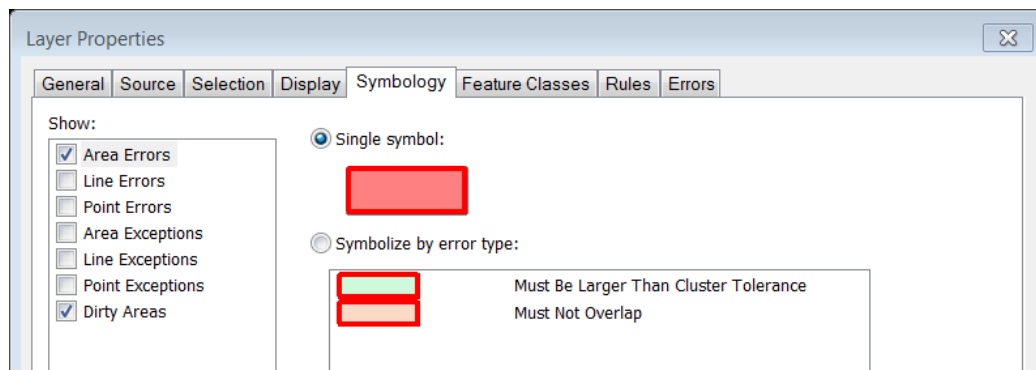
17. When the Topology is created it will ask you if you want to validate it now. **Click No**.



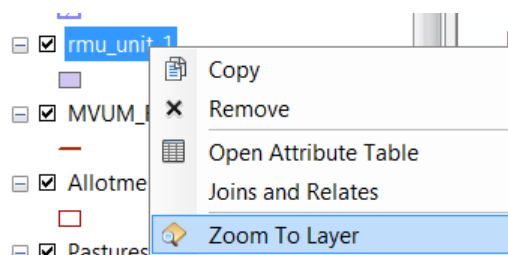
18. From the Catalog window, **drag the Range_Topology to the top of the TOC**. Click **Yes** when it asks you if you want to add the participating feature class.



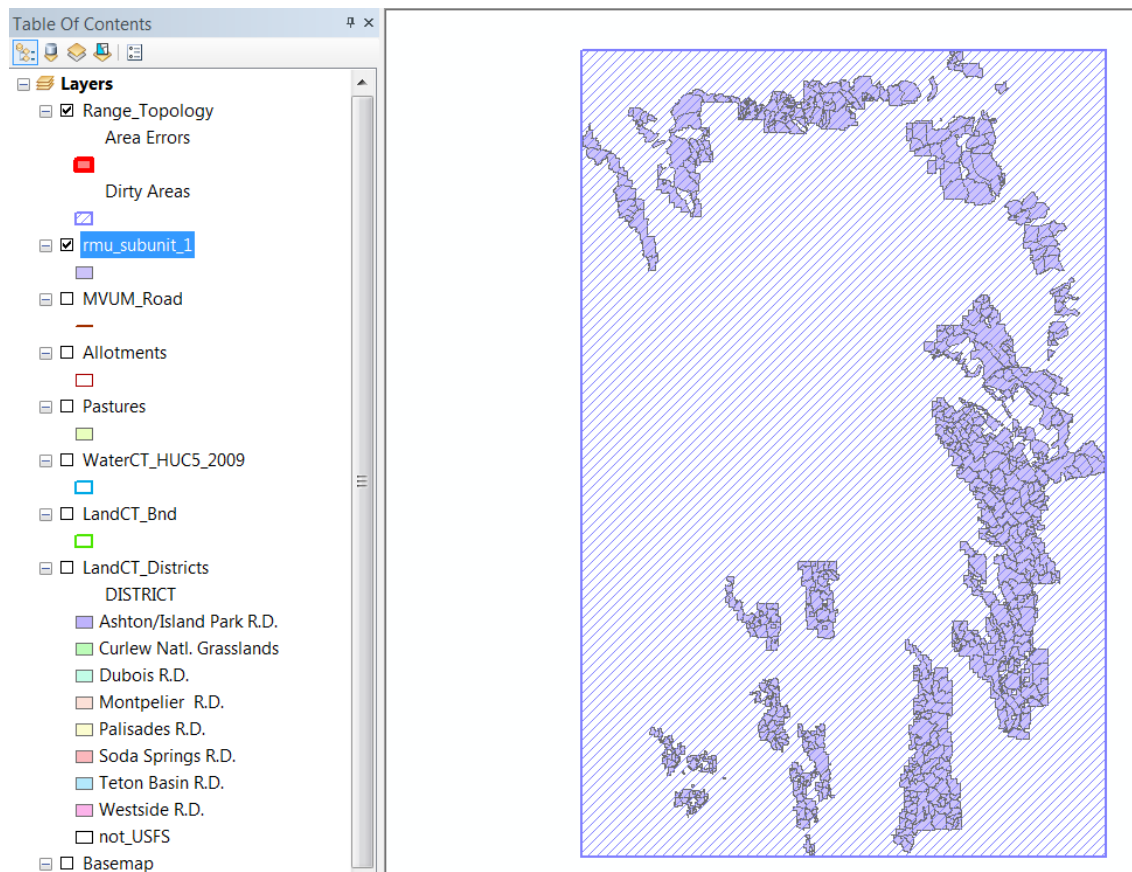
19. Double click to **open the Properties window for the Range Topology**. And Click on the **Symbology** tab. **Turn off the Point and Line symbols and turn on the Dirty Areas symbol. Click OK.**



20. **Turn off all layers except for rmu_unit_1 and Range Topology.** Right click on the **rmu_unit_1** layer and **Zoom to Layer**.

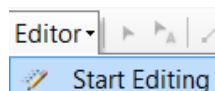


21. Since we did not validate the Topology, the entire layer is symbolized as a Dirty Area.

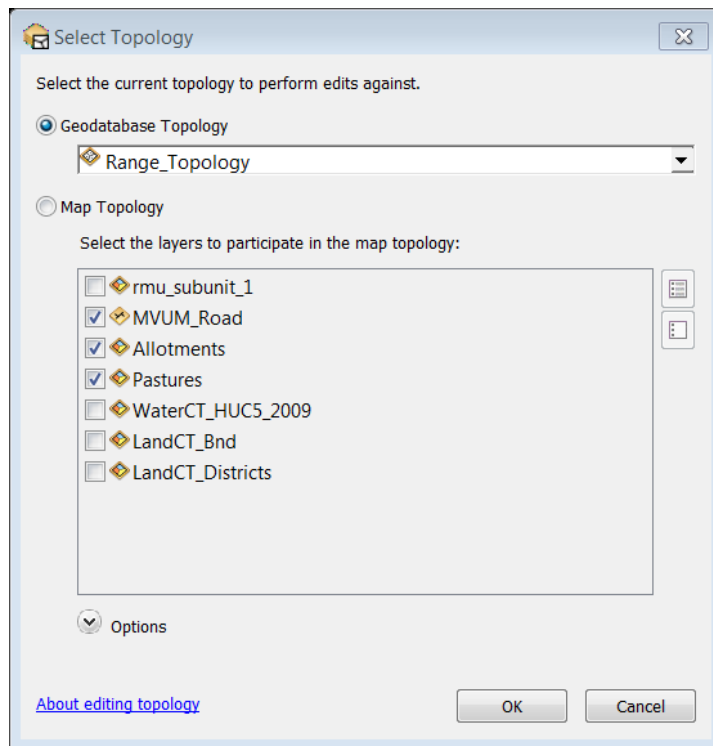


H. OPTIONAL - Check for Topological Errors

1. **Start an editing session.**




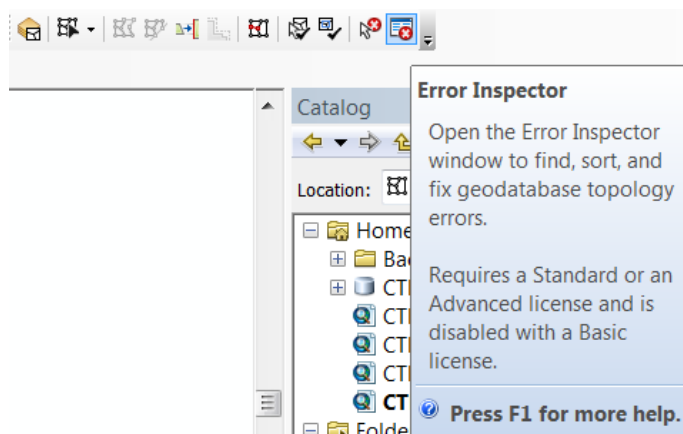
2. **Click the Select Topology** and this time click on the **Geodatabase Topology button**, and since Range Topology is the only Topology layer it will automatically be populated in the window. Click OK.



3. You will notice the last four buttons will become active on the Topology toolbar.

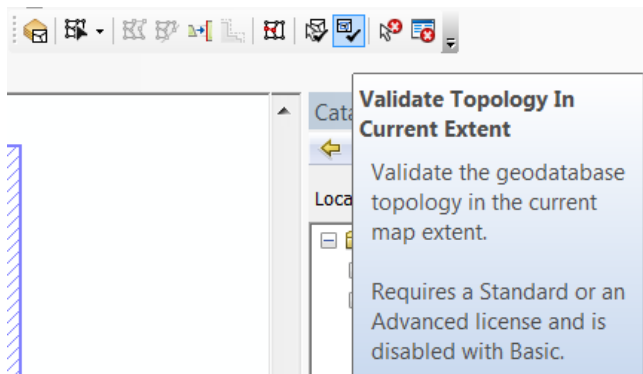


4. Click on the **Error Inspector button**  on the Topology Toolbar. The Error Inspector window will open, and you should dock it on the bottom of the window.

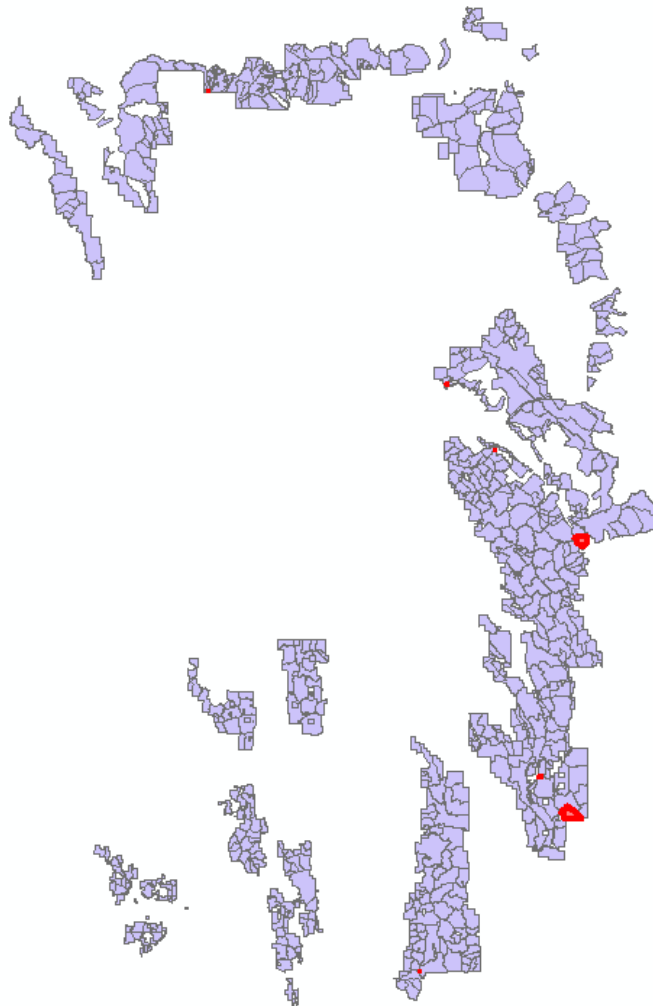


5. If needed, **right click on the `rmu_unit_1` layer and click Zoom to Layer**. Click the

Validate Topology in Current Extent button. 



6. Notice the red areas that show up after the Validation.

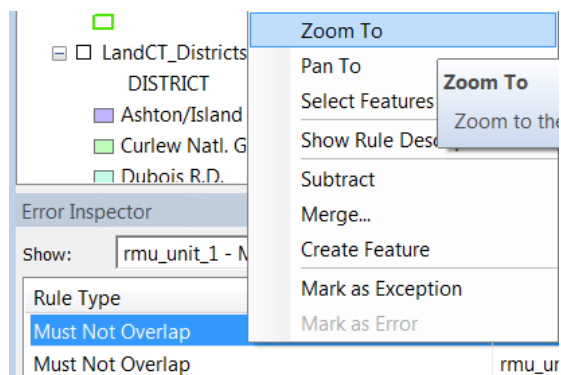


7. Click on the dropdown to show the **rmu_unit_1 – Must Not Overlap** rule, and the **Search Now** button. Eight errors should appear.

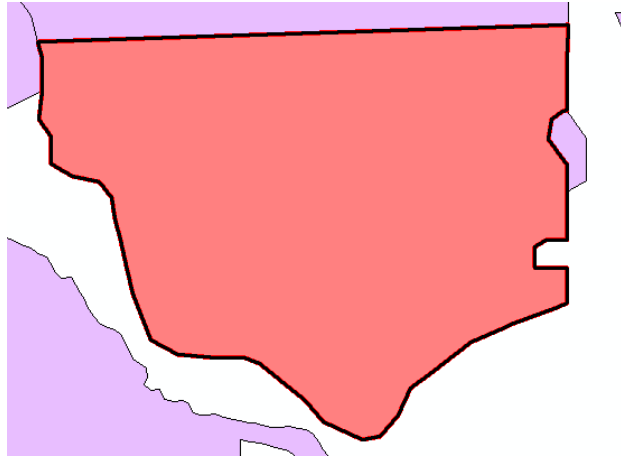
Error Inspector						
Show:	rmu_unit_1 - Must Not Overlap	8 errors	Search Now	<input checked="" type="checkbox"/> Errors	<input type="checkbox"/> Exceptions	
Rule Type	Class 1	Class 2	Shape	Feature 1	Feature 2	Exception
Must Not Overlap	rmu_unit_1		Polygon	231	234	False
Must Not Overlap	rmu_unit_1		Polygon	15	204	False
Must Not Overlap	rmu_unit_1		Polygon	15	188	False
Must Not Overlap	rmu_unit_1		Polygon	15	188	False


I. OPTIONAL - Edit Using Geodatabase Topology - Fix Error with Topological Tools

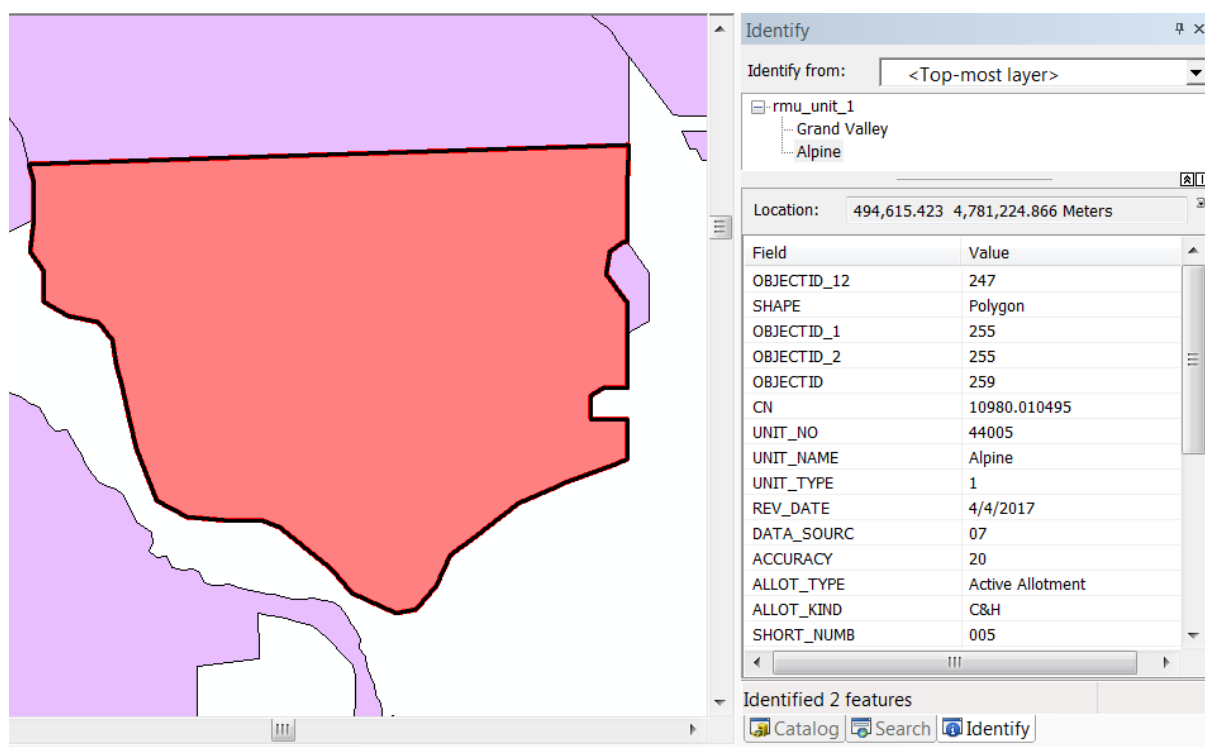
1. Right click on the first error in the table and click **Zoom to Error**.



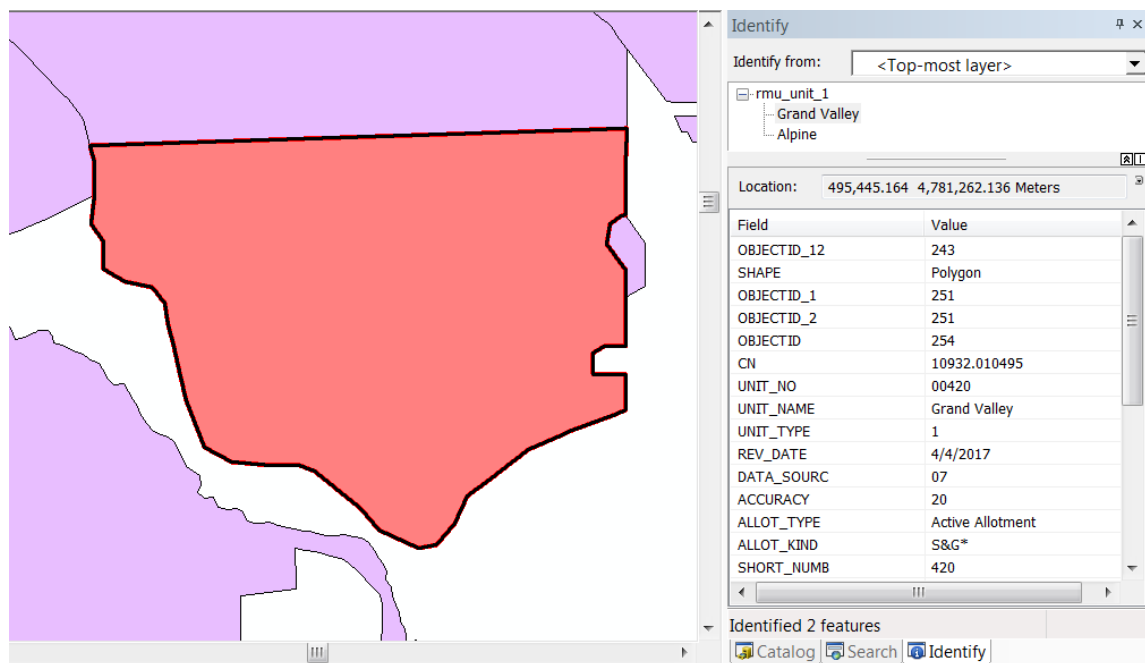
2. If the polygon in the screengrab below doesn't show up, **keep clicking Zoom To on the next line in the table until it appears** in the Data Frame.



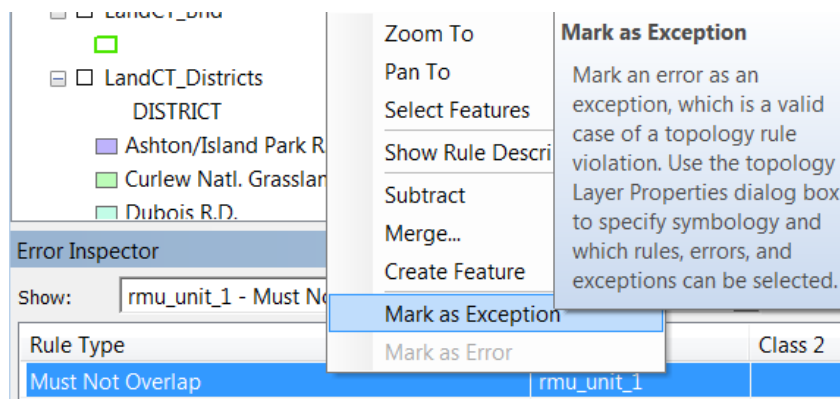
3. To learn more about this error you will have to do some sleuthing. **Click on the Identify button**  **and on the error polygon.** You will see that two allotment names have been selected. **Click on the Alpine Allotment.** Notice that the *ALLOTMENT_KIND* field for the Alpine Allotment is C&H which stands for a Cattle and Horse permit.



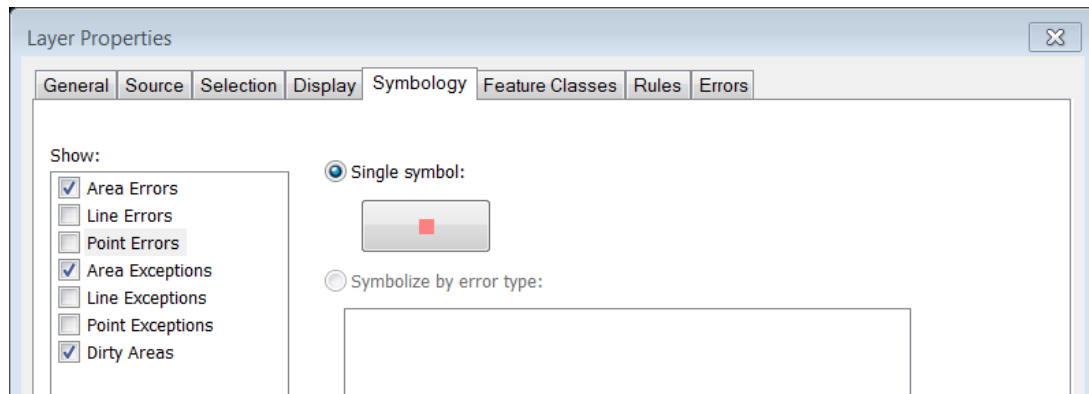
4. **Click on the Grand Valley allotment.** It will flash in green, and it is a bigger polygon than the Alpine allotment. *Notice that the Grand Valley Allotment is an S&G permit, which stand for sheep and goats.*



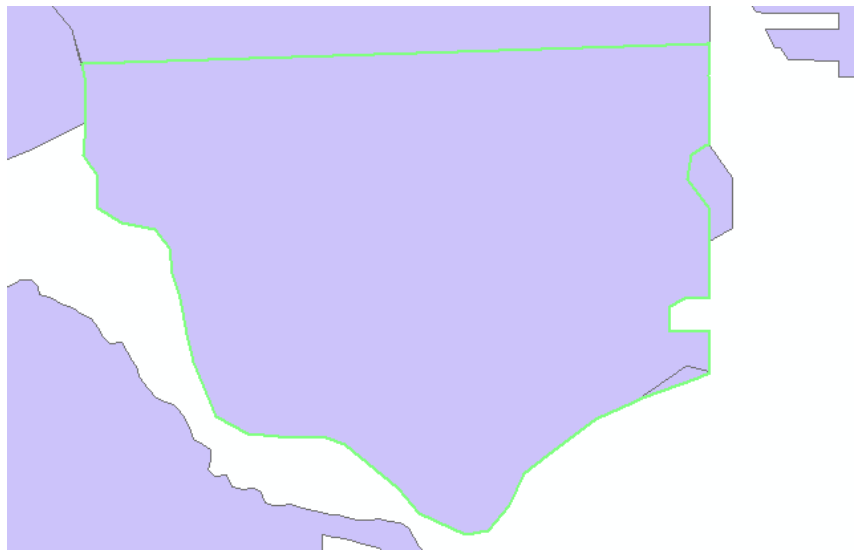
- This overlap looks to be legitimate, because the same area has two types of grazing permits. In this scenario, the Range Management Specialist will confirm and so we will **right click on the row and make this area an exception to the rule**. The error will disappear from the display because we have not set an Exception Symbol yet. *Usually we would not want overlapping polygons as it can cause analysis errors for example, acreages can be double counted.*



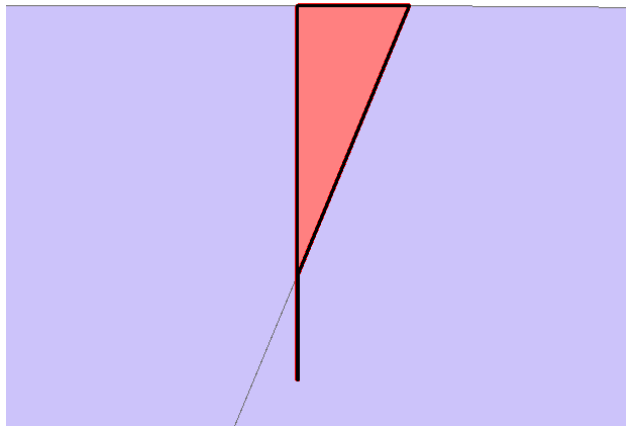
6. **Right click the Range_Topology layer and open the Layer Properties and the Symbology tab. Check the Area Exceptions to show in the TOC. Click OK.**




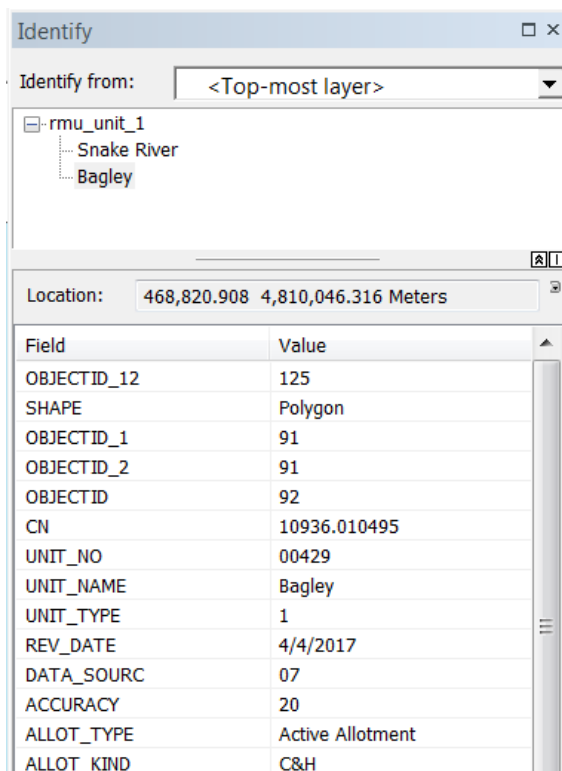
7. The Exception shows up with a green outline.



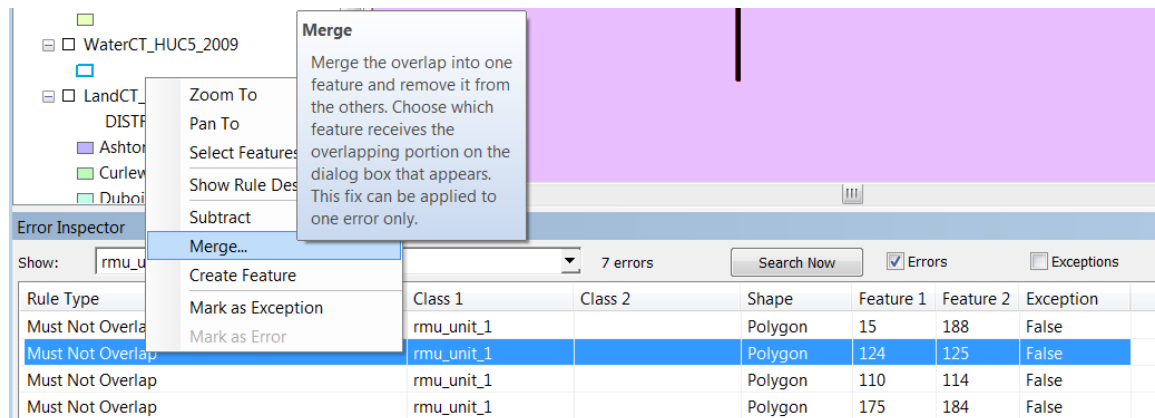
8. **Right click on the next error in the Error Inspector and keep clicking **Zoom To** until you see the error below. This small polygon looks like a digitizing error. Let's look into it.**



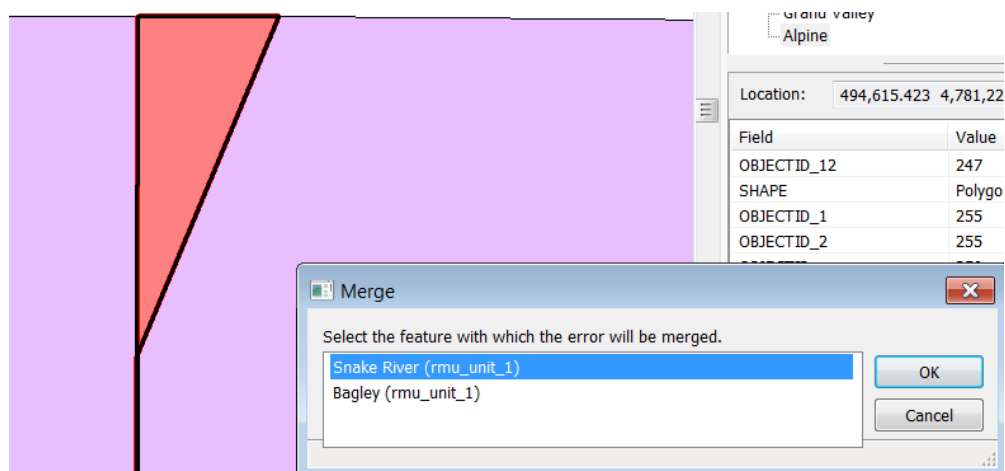
9. Click on the Polygon with the Identify Tool . Notice the two allotment names that show up and how they flash in green when you click between them.



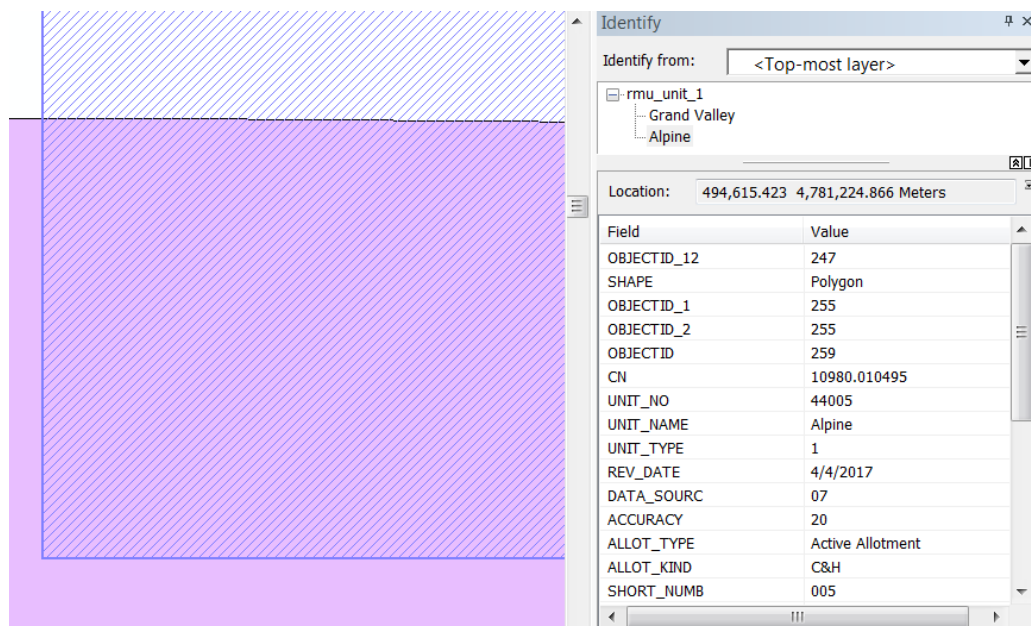
10. This area is supposed to be the Snake River allotment. This error needs to be fixed, so right click on it to see the options. We are going to select the Merge tool to fix the problem.



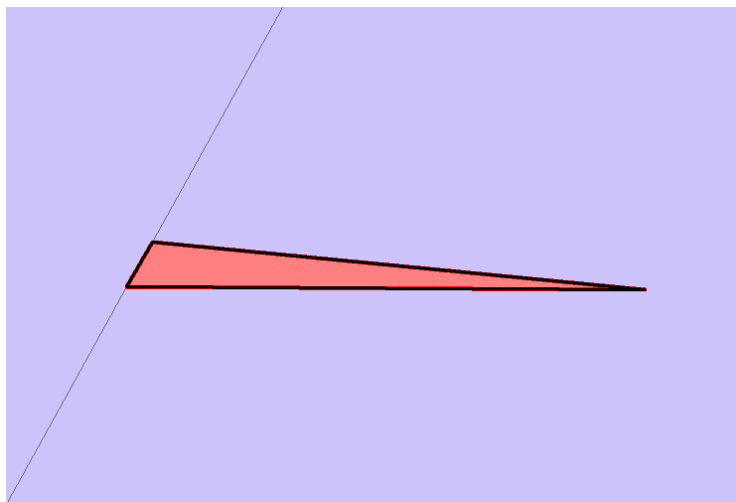
11. A window will pop up and let you click on each option and it will flash green to show you the associated polygon. Select Snake River and click OK.



12. The result is that the sliver will disappear and the symbology will change to Dirty Area.

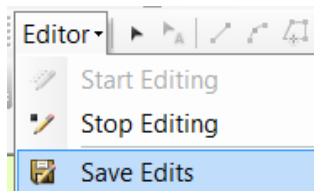


13. **Zoom to rmu_unit_1** full extent, and **click the Validate Topology in Current Extent button** . Click Search Now in the Error Inspector and the result now shows 6 errors. **Right click** the first error in the table and **click Zoom To**, keep trying until you find the error below.



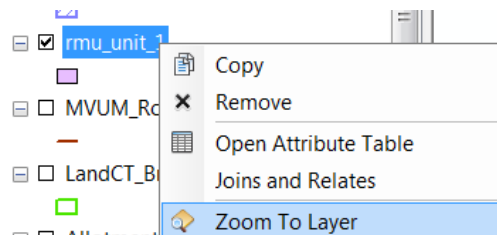
14. This looks like another topology error that needs to be merged. **Click Logan River and OK.**

Click Save Edits.

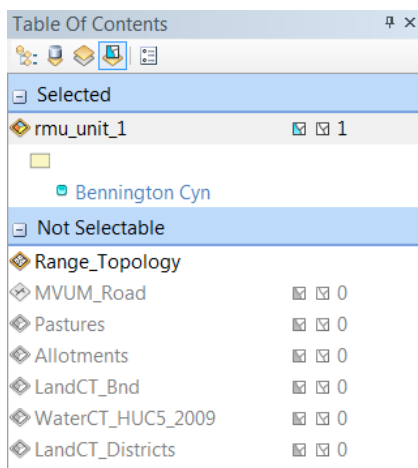


J. OPTIONAL – Edit Using Geodatabase Topology - Check for Must not Have Gaps

1. Zoom to the rmu_unit_1 extent.




2. **Make rmu_unit_1 the only selectable layer.**

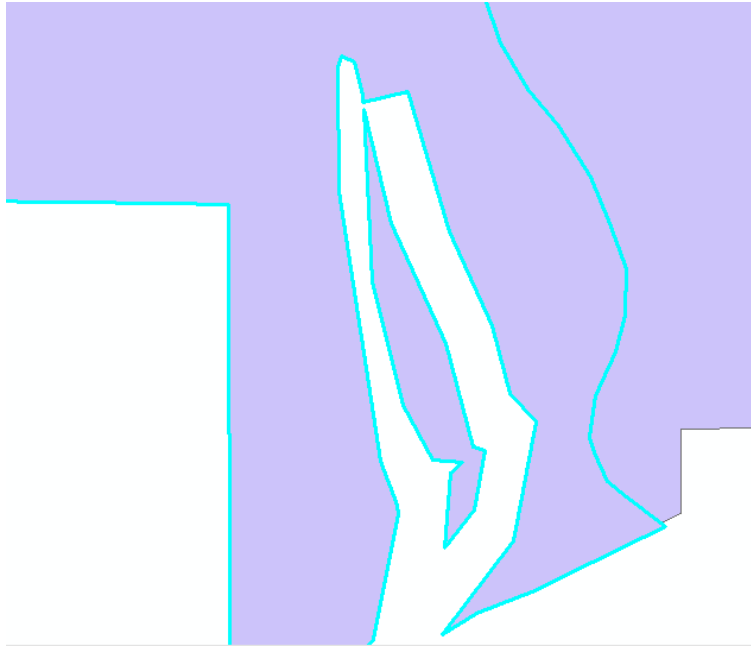



3. In the Error Inspector **click the dropdown to choose rmu_unit_1- Must Not Have Gaps.**

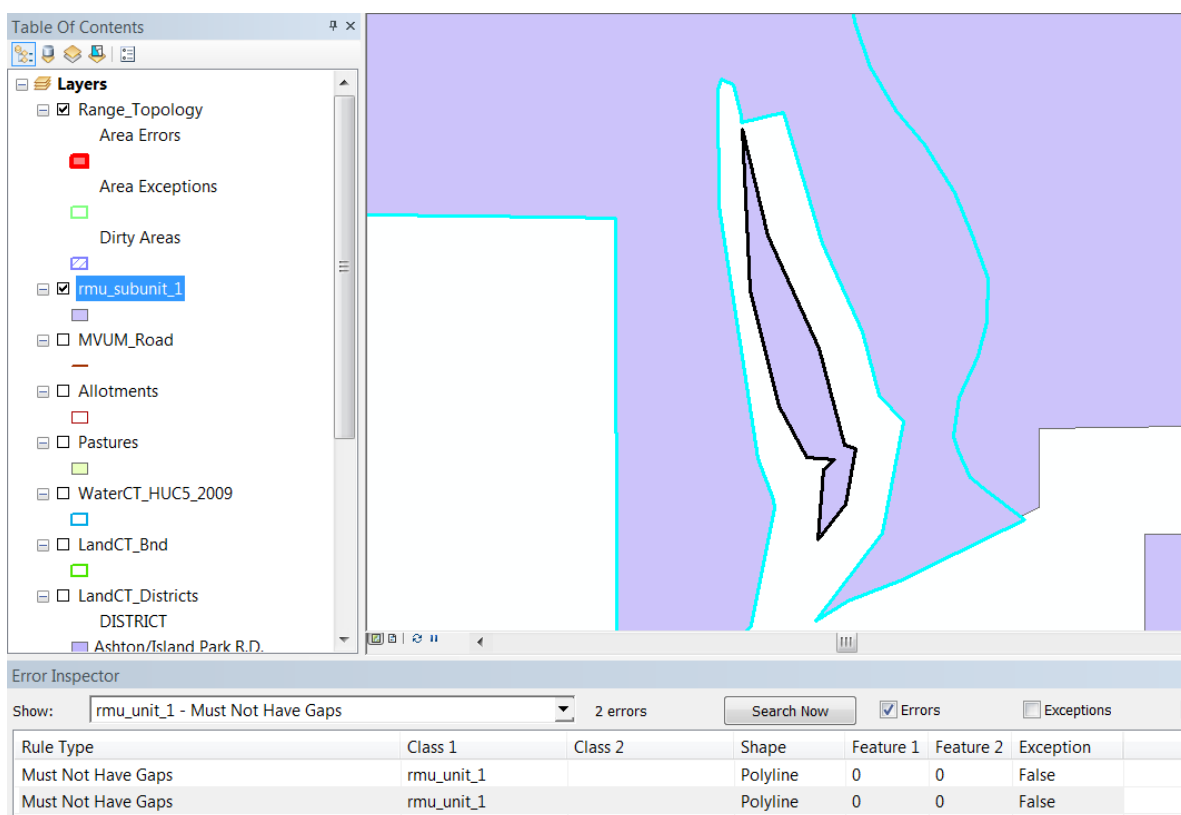
Error Inspector						
Show:	rmu_unit_1 - Must Not Have Gaps	126 errors	Search Now	<input checked="" type="checkbox"/> Errors	<input type="checkbox"/> Exceptions	
Rule Type	Class 1	Class 2	Shape	Feature 1	Feature 2	Exception
Must Not Have Gaps	rmu_unit_1		Polyline	0	0	False
Must Not Have Gaps	rmu_unit_1		Polyline	0	0	False
Must Not Have Gaps	rmu_unit_1		Polyline	0	0	False
Must Not Have Gaps	rmu_unit_1		Polyline	0	0	False

You will see that there are around 126 errors. We will only look at a few of these errors. Many will be exceptions based on the nature of the disjointed land management pattern on the Carabou-Targhee National Forest. Every outer polygon that is not adjacent to another polygon will show up as an error. Also, every internal “doughnut hole” removed from the allotments for reasons like they are privately owned, will show up as an error because the program cannot tell them apart from a sliver error.

4. Click on **Bookmark | Map Topology Error - Must Not Have Gaps** to see a pretty significant error that needs to be fixed. This appears to be a digitizing mistake where the polygon had a fatal error and imploded on itself.
5. Click the **Select Features tool**  on the Tools toolbar and **select the small center polygon**. Notice how both polygons are selected.



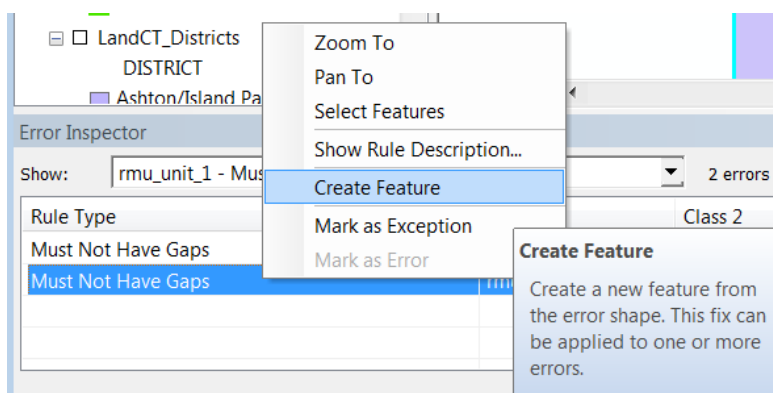
6. Click on the **Validate Topology in Current Extent**  and click **Search Now** in the Error Inspector. Click the records until the middle polygon is symbolized in black, meaning that is the error selected in the Error Inspector.



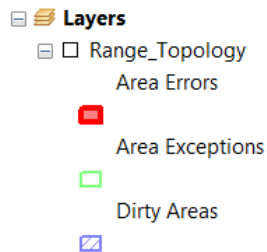
7. **Right click on the row in the Error Inspector** to see what tools are available for fixing the error.

Because this is a gap error, there is not Subtract option, just a Create Feature tool.

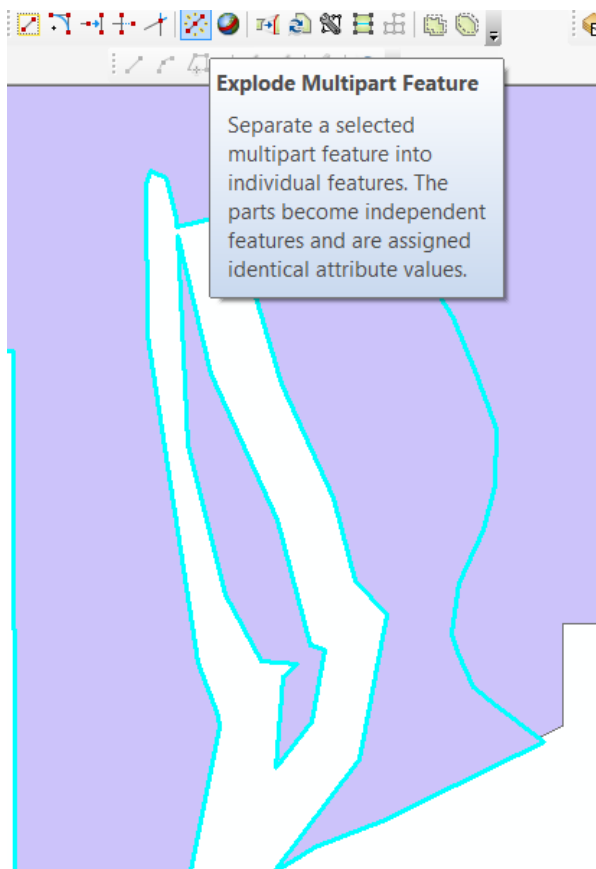
Let's try **Create Features**.




8. As it turns out, creating a feature does not solve this problem. Turn off the Topology layer in the TOC.

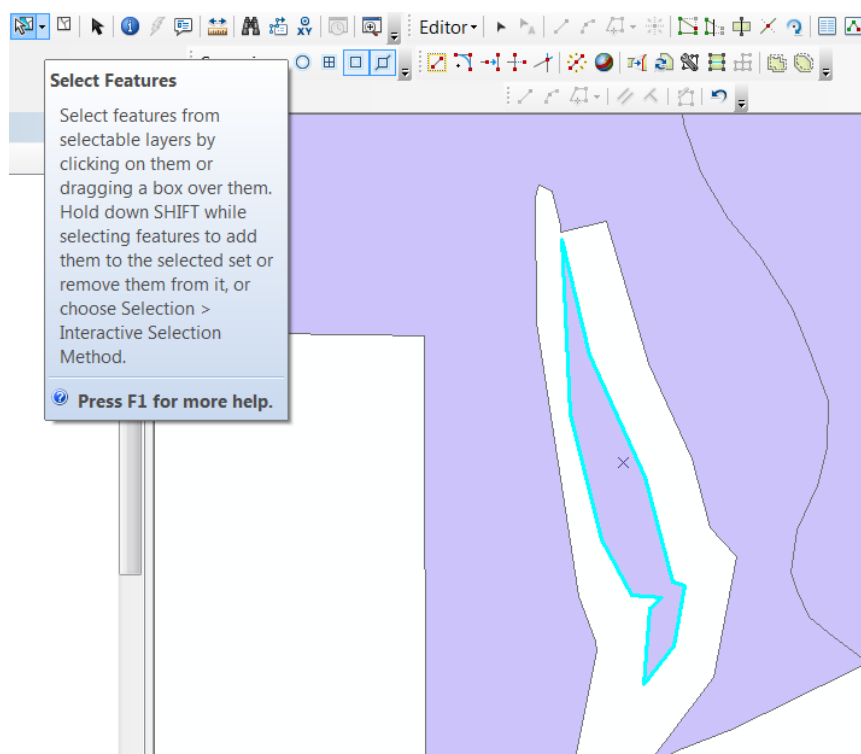


9. Try to select the middle feature only to delete it, but it still selects both. This is a multipart polygon, we cannot delete the inside polygon without deleting the entire thing. In order to fix this error, we need to **select the Explode Multipart Feature tool**.

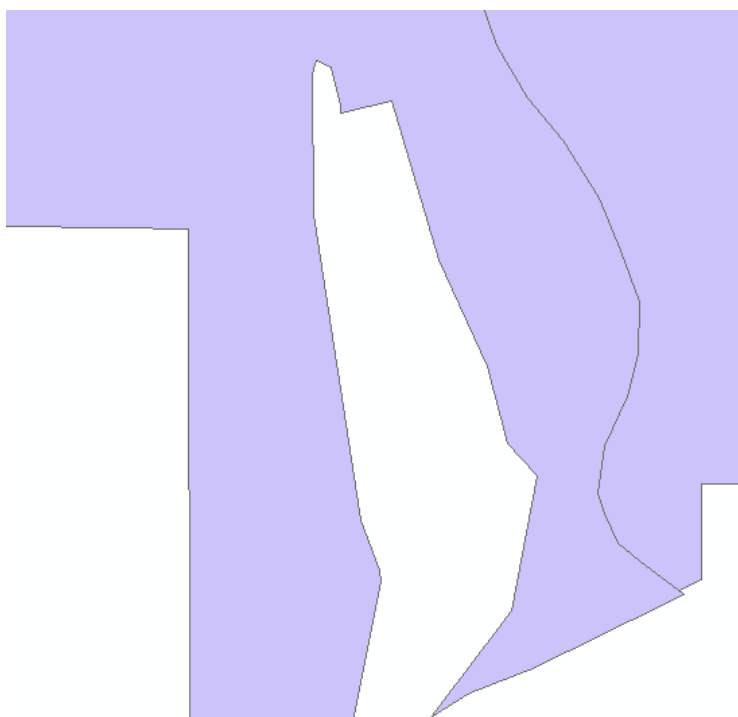



10. Click the **Clear Selected Features tool**  on the Tools toolbar.

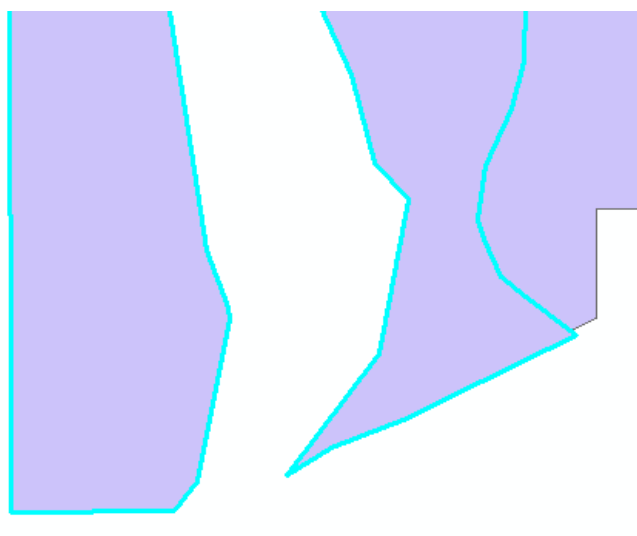
11. Click the **Select Features tool**  on the Tools toolbar and **select the internal polygon**. *Now we can select the internal error by itself and delete it.*



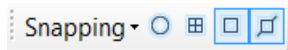
12. Click the **Delete** key on your keyboard.



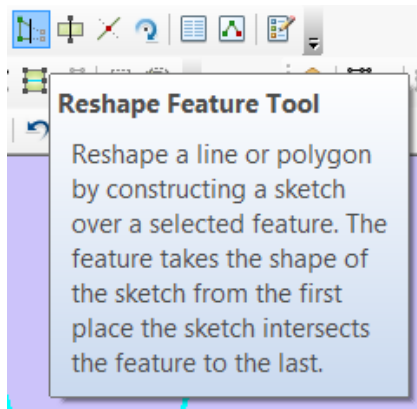
13. Ensure you are still in an Editing session and use the **Select Feature tool**  to **select the larger polygon and pan down to the opening near the south end.**



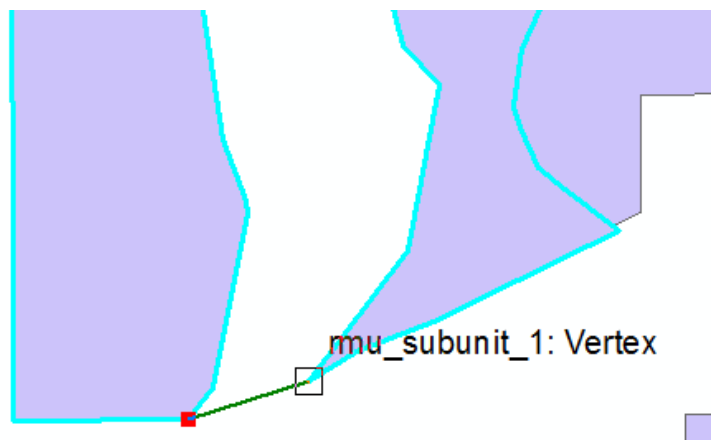
14. Ensure that **Snapping** is on and the Vertex and Edge tools are selected.



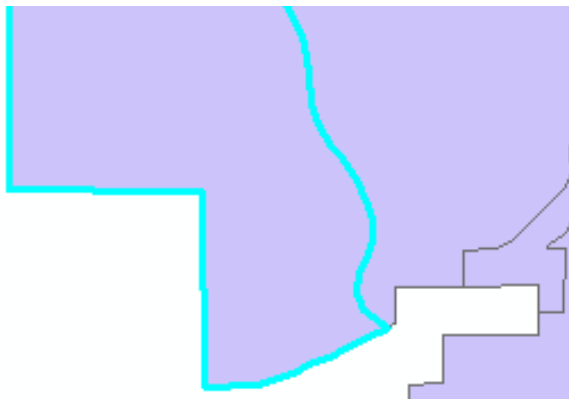
15. Click on the **Reshape Feature tool**  on the **Editing toolbar**.



16. Snap to the edge of the polygon to be edited across the gap and double click your mouse on the other edge to reshape the polygon.

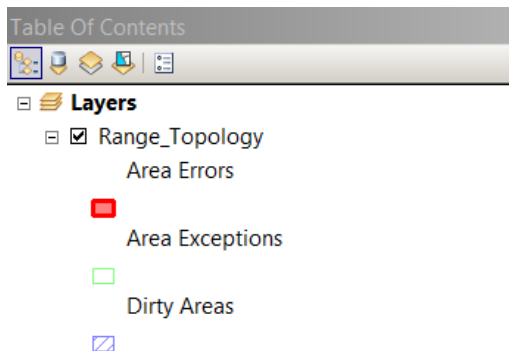


17. Result of Reshape Feature Tool, the allotment is whole again.



K. OPTIONAL - Edit Using Geodatabase Topology – Find and Fix a Sliver Gap

1. Turn on the Range_Topology layer in the TOC.



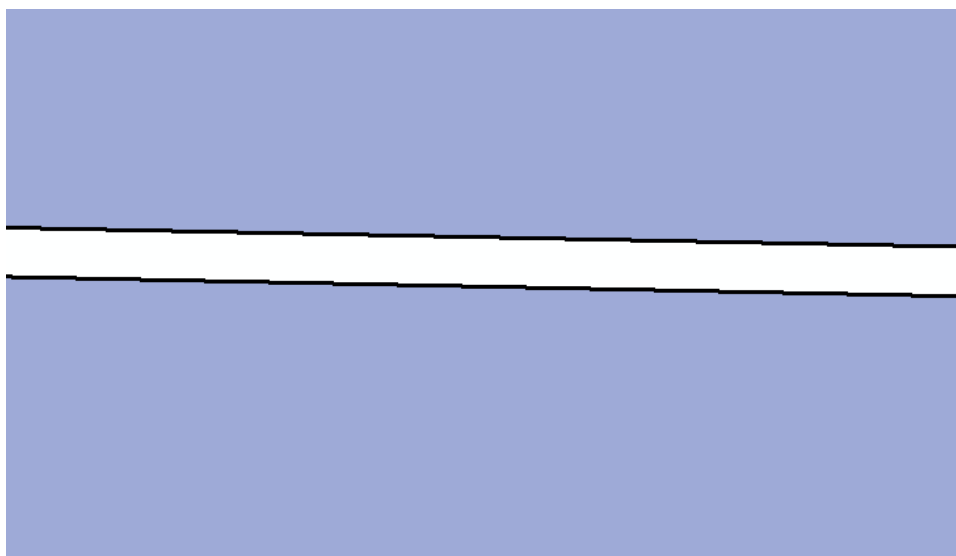
2. Click on Bookmarks | **Map Topology Error - Sliver Gap.**



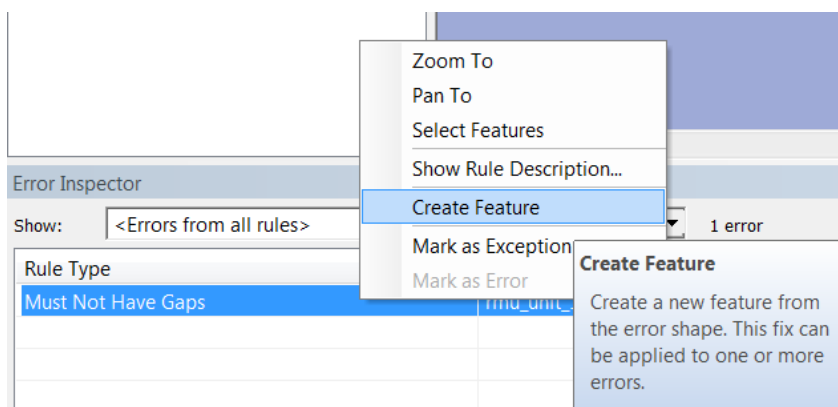
3. Click on **Search Now** button in the Error Inspector to find the sliver in the table since we are zoomed into the extent.



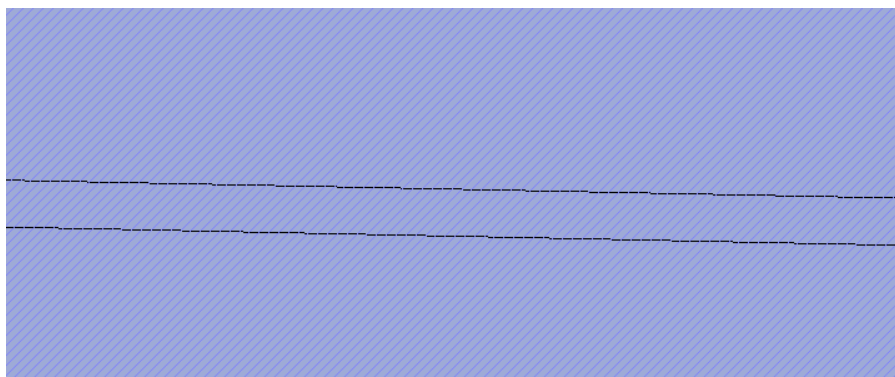
4. Click on Bookmarks | **Extreme Zoom in to Fix Sliver Gap.**



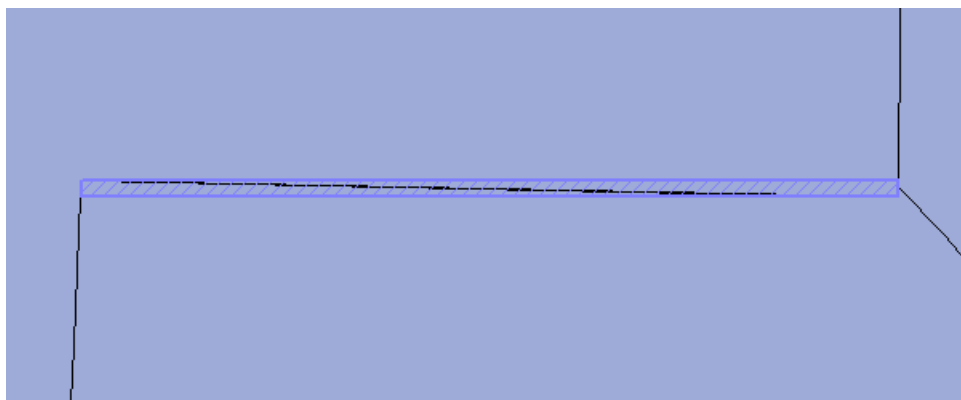
5. **Right click** on the error in the table and select **Create Feature**.



6. The sliver gap is now filled in with a tiny polygon.



7. Click on Bookmarks | **Map Topology Error - Sliver Gap**. Notice that the entire sliver is now a Dirty Area.



8. Click the **Validate Topology in Current Extent tool** . Close the Error Inspector window and Click on the **Go Back to Previous Extent button** .

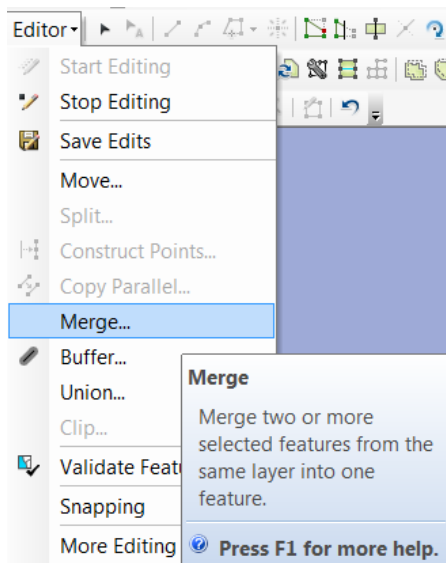
9. Use the **Select Features tool**  to select the Sliver polygon.



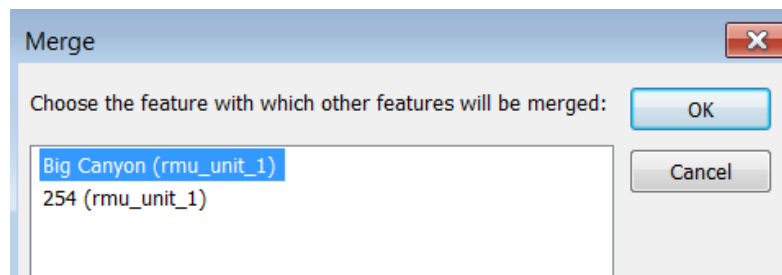
10. Hold down the SHIFT key and use the **Select Features tool**  to select the adjoining polygon to the south.

The sliver in this example is so tiny that it doesn't really matter which polygon we merge it with so that the two polygons are aligned together. There are some circumstances where it does matter which polygon you merge the error into, so you have to be careful.

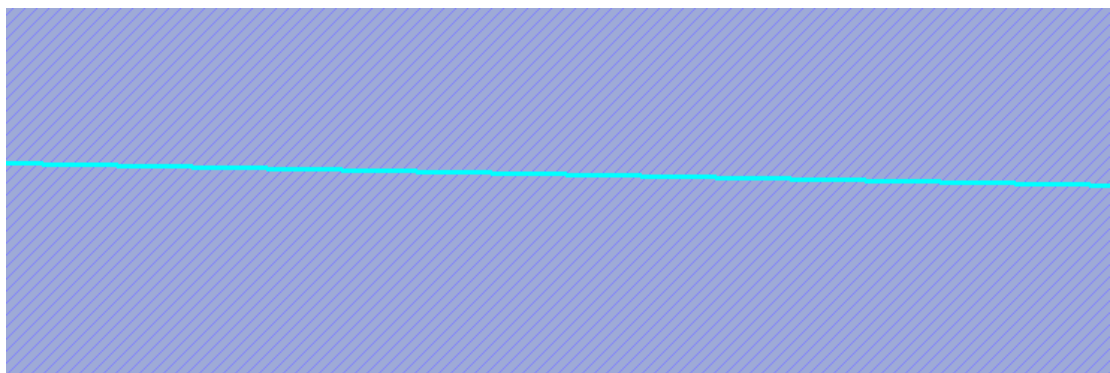
11. Click the **Edit dropdown on the Editor Toolbar** and select **Merge**.



12. Since this example chose to merge the sliver with the southern polygon, we will **choose the Big Canyon attributes for the merged polygon.**



13. Both polygons are aligned after the merge.





14. Click **Save Edits**.

Congratulations you have completed Exercise 2!

