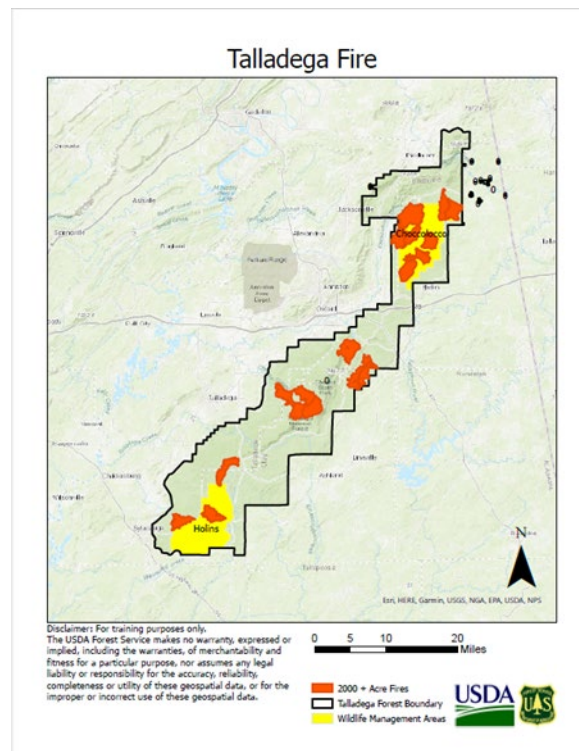


EXERCISE 2

Visualize, Layout & Share



Introduction

This lesson is designed to expose some of the processes for visualizing your data in ArcGIS Pro by managing and labeling features. Experience working hands on with the new Layout will also be covered. Some options for sharing GIS work will be covered.

Objectives

- Manage and label features
- Design a Layout
- Share your work

Required Data

- Course data downloaded and unzipped



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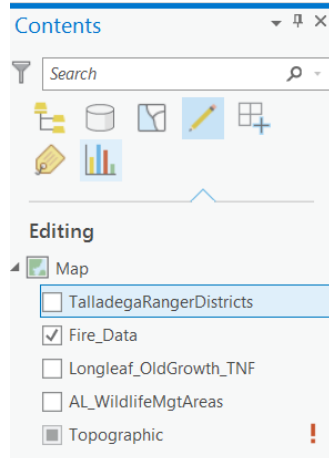


Part 1: Prepare & View Data

ArcGIS Pro always has editing activated unlike ArcMap where you had to start and stop an editing session. For detailed information about editing in ArcGIS Pro [click here](#) and [here](#).

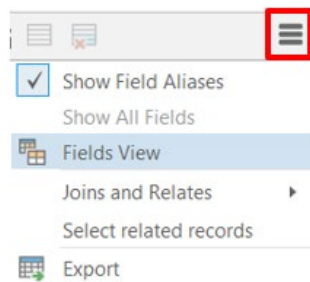
A. Manage the editing workspace

1. Open File Explorer and navigate to `\ArcGISProforArcMapUsers_Student\Exercise2\Visualize` and open the **Visualize** project.
2. On the **Edit** tab (Manage Edits group) click **Status**  to display the Editing Status dialog box.
3. **Review** the editing permission for the layers in your workspace by expanding the arrows then click **Close**.
4. In the Contents pane, click the **List By Editing** tab . **Uncheck all layers except Fire_Data.**



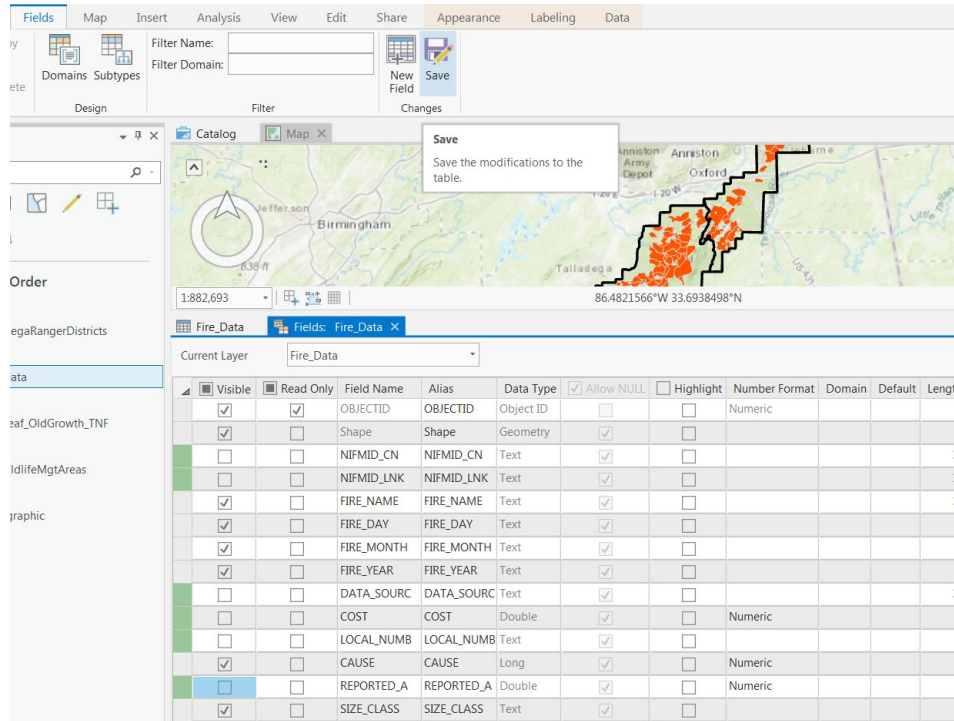
B. Prepare Attribute Table

1. Right click the **Fire_Data** layer on the Contents pane and click **attribute table** to open it. This exercise does not need all these fields visible or populated.
2. From the option dropdown menu at the top right of the attribute table, select **Fields View**.



3. **Deselect the following fields** to make them not visible:
 - i. NIFMID_CN
 - ii. NIFMID_LNK
 - iii. DATA_SOURC

- iv. COST
- v. LOCAL_NUMB
- vi. REPORTED_A



4. Close the Fields tab and click **Yes** to save all changes.
5. Inspect the updated attribute table.

Part 2: Label Features, Add Geometry, Export Selection

For the remainder of this exercise you will prepare your data for displaying in a layout and finally share as a web map. The goal is to display all fires that that burned an area greater than 2,000 acres so we must prepare the data by calculating the acres for each fire.

A. Prepare the Data

1. In the **Map** ribbon (Navigate group), click the **Full Extent** button.
2. In the Geoprocessing pane search bar, type **Add Geometry**.
3. **Open** the **Add Geometry Attributes** tool by single clicking it.
4. **Hover** the cursor over the **red asterisk** next to the **Geometry Properties** field for an explanation of the field's options.

Geometry Properties (Required)

Determines the geometry or shape properties that will be calculated into new attribute fields.

- Area—Adds an attribute to store the area of each polygon feature.
- Geodesic area—Adds an attribute to store the geodesic area of each polygon feature.
- Centroid coordinates—Adds attributes to store the centroid coordinates of each feature.
- Central point coordinates—Adds attributes to store the coordinates of a central point inside or on each feature.
- Extent coordinates—Adds attributes to store the extent coordinates of each feature.

Geometry Properties

Length Unit

Area Unit

Coordinate System

5. Enter the following parameters:

- For input Features = **Fire_Data**
- Geometry Properties = **Area**
- Length Unit = **leave blank**
- Area Unit = **Acres**
- Coordinate System = **Fire_Data**

Geoprocessing

← Add Geometry Attributes

Parameters | Environments

Input Features

Fire_Data

Geometry Properties

Area

Length Unit

Area Unit

Acres

Coordinate System

NAD_1983_UTM_Zone_16N

6. Click **Run**. A new field is added to the Fire_Data attribute field. Scroll to the right to view the new field named **POLY_AREA**.

Field:	Selection:		
COMMENTS	Shape_Length	Shape_Area	POLY_AREA
	1349.007636	43644.848644	10.784867
	440.830627	8427.366046	2.082446
	207.072561	2441.655693	0.603346
	183.492336	1920.47815	0.47456
	224.787413	2214.389282	0.547187
	584.351223	22237.719317	5.495055
	345.418271	7503.655485	1.854192
	570.056632	21623.484604	5.343275
	1219.824532	79804.535312	19.720113
	588.809886	20440.45967	5.050943
	397.584525	9636.775829	2.381297

B. Export Table Selection to New Feature Layer

1. In the **Map tab** (Selection group), click **Select by Attributes**.
2. In the Select Layer by Attribute window, set the Input Rows to **Fire_Data**.
3. Leave the Selection type as **New Selection**.
4. In the Where Clause section, use the menus to create the following clause: **POLY_AREA is greater than or equal to 2000**.

Select By Attributes

Input Rows

Fire_Data

Selection type

New selection

Expression

Load

Save

Remove

Where

POLY_AREA

is greater than or equal to

2000

+

Add Clause

SQL

5. Click the SQL button on the upper right side of the Where Clause section to view the SQL syntax.

SQL

POLY_AREA >= 2000

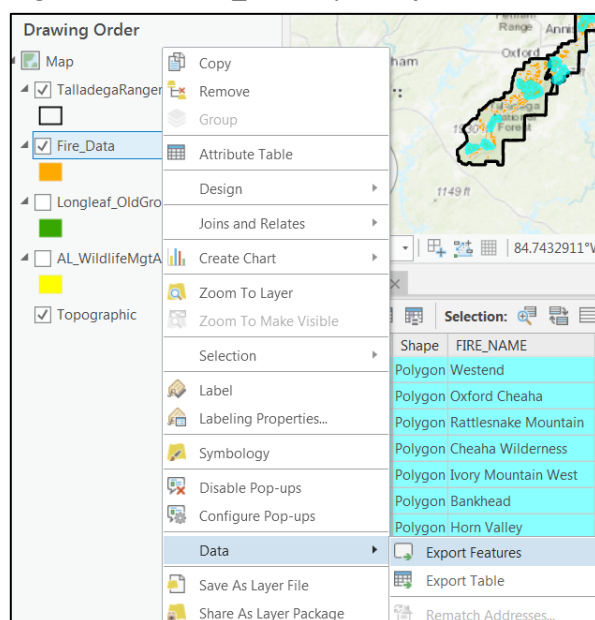
6. Click **OK**.
 - i. 19 fire polygons should be selected.

Fire_Data

OBJECTID	Shape	FIRE_NAME	FIRE_DAY	FIRE_MONTH
637	Polygon	Westend	10	03
614	Polygon	Oxford Cheaha	11	03
589	Polygon	Rattlesnake Mountain	14	03
423	Polygon	Cheaha Wilderness	04	12
203	Polygon	Ivory Mountain West	26	02
447	Polygon	Bankhead	11	02
250	Polygon	Horn Valley	04	03
86	Polygon	Raven Rock #1	06	03
247	Polygon	Lake Chinnabee South	14	02
618	Polygon	Ridge Road	25	01
342	Polygon	500 R	23	02

19 of 859 selected Filters:

7. Right click the **Fire_Data** layer, expand the **Data** option and select **Export Features**.



8. In the **Export Features** window, set the Output Name to **Fire_Data_2000ac**.

Export Features


Parameters Environments

Input Features
Fire_Data

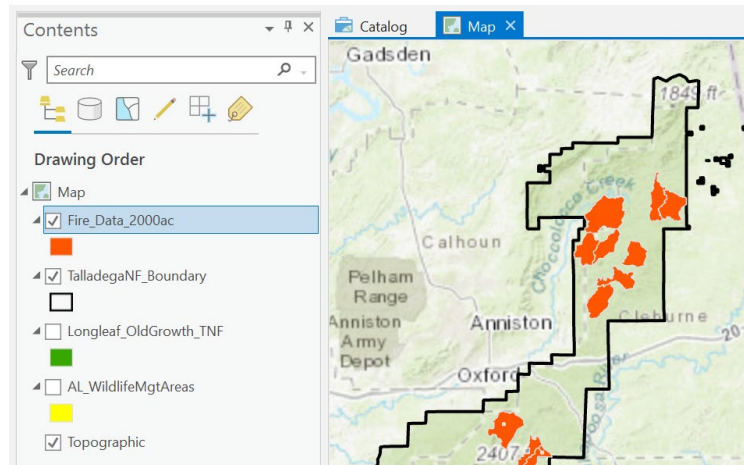
Output Location
Visualize.gdb

Output Name
Fire_Data_2000ac

9. Click **OK**. The new layer is added to the Contents pane.

10. In the Contents pane, click the **List by Drawing Order** tab .

11. Right-click the **Fire_Data** layer then click **Remove**.

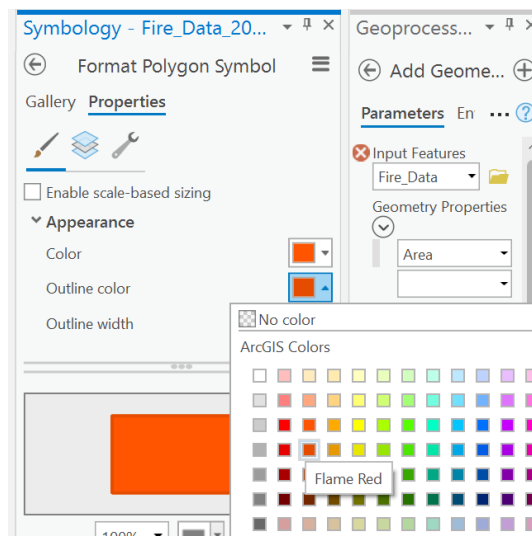


12. Click the **color patch** for **Fire_Data_2000ac** to open the **Symbology** pane.

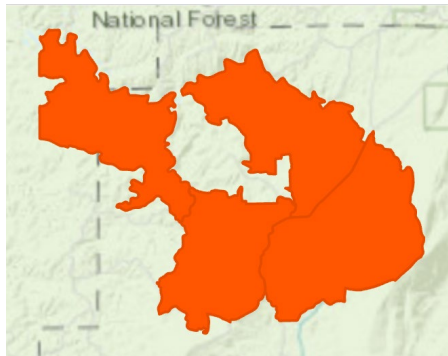
i. Click the **Properties** tab.

ii. Click the **Outline Color** menu then **select Seville Orange**.

iii. Set the **Outline width** to **2 pt**. This will help distinguish the different fire boundaries.



iv. Click **Apply**.



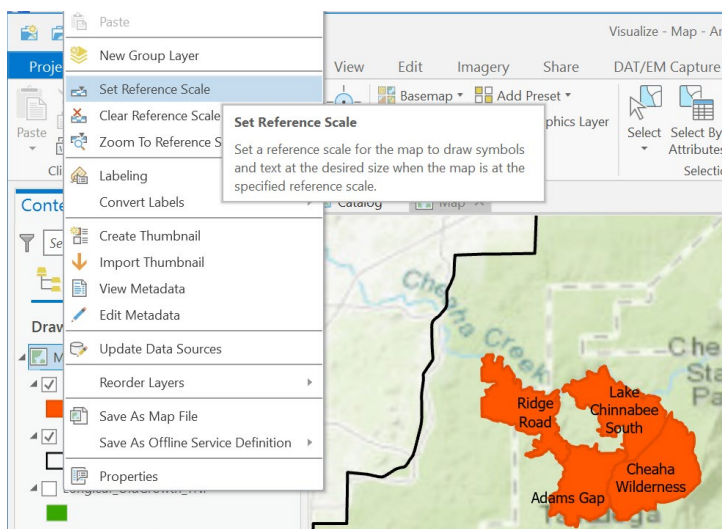
13. **Save** your project.

C. Label Fire Data

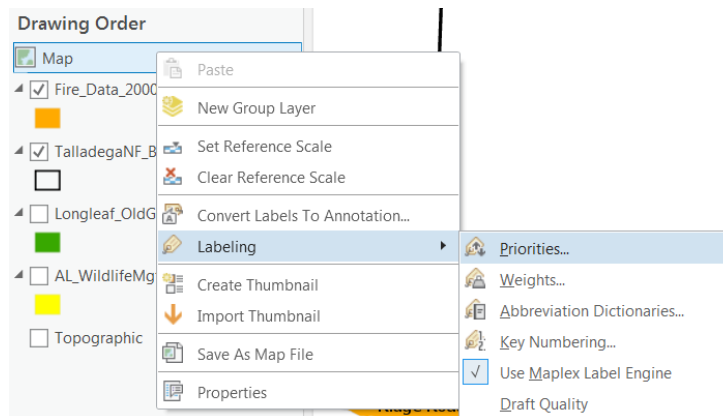
In ArcGIS Pro, labeling refers specifically to the process of automatically generating and placing descriptive text for features in maps and scenes. Label positions are generated automatically. Labels are not selectable. You cannot edit the display properties of individual labels. For more information on labeling [click here](#).

1. In the Contents pane, **right click the layer Fire_Data_2000ac** and **select Label** from the context menu.
2. **Zoom in to the map to 1:200,000 or type 1:200,000 into the map scale** on the map view.
3. **Right click the map title** and select **Set Reference scale**.

By default, labels do not scale as you zoom in or out on your map; that is, they stay the same size on the page regardless of the map scale unless you set a reference scale. The reference scale is now set and can be clear by selecting Clear Reference Scale.



4. **Right click map title** and **hover over Labeling** and **select Priorities**.

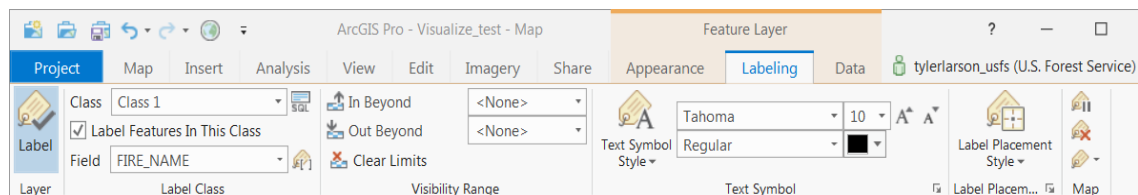


5. Move **fire_Data_2000ac** to the top and click **Apply** then **OK**.

Label priority controls the order that labels will be placed on the map. Labels with a higher priority will be placed before labels with a lower priority.

Different label settings are found in the map title properties window under the label tab, from the Map tab in the Labeling group but the main options will be available from the Labeling tab in the Feature Layer contextual tabs and the Label Class pane.

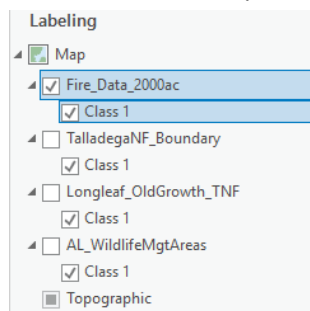
6. Select the **Fire_Data_2000ac** layer in the Contents pane.
7. On the ribbon, under the **Feature Layer** context menu, click the **labeling** tab to display the **labeling tools**. Most of these options are found in the Label Class pane as well




8. **Right click** the layer **Fire_Data_2000ac** and **select Label Properties** which opens the Label Class pane.

Note: By default, labels are grouped in a [label class](#). All labels in a class have the same properties—the same text symbol, the same placement settings, and so on. A layer can have more than one label class. Additional label classes allow you to define different properties for subsets of labels within a layer. You create new label classes from the Menu button on the Label Class pane.

9. From the **Contents** pane **switch to list by Labeling**. Here you see your label classes.



10. Right-click the Fire_Data_2000ac layer then click **Labeling Properties**.
11. In the Label Class pane click the **Visibility range** tab  and set the visibility range as follows:

▼ **Visibility range**

Do not show layers when zoomed

In beyond (maximum scale)

1:24,000

Out beyond (minimum scale)


1:500,000

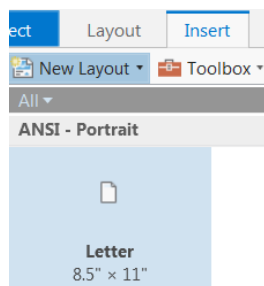
12. Click the **Full Extent** button. All labels should no longer be visible as they are beyond the minimum scale.
13. **Zoom in and out** to see the labels appear and disappear.
14. In the Contents pane, right-click the Map the click **Properties**.
 - i. Change the map name to **Talladega Fire**.

Part 3: Prepare Map for Publication

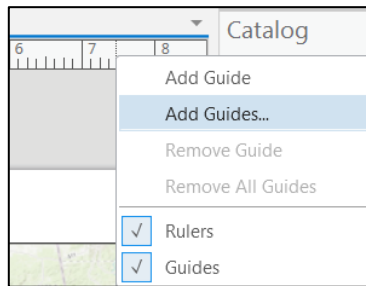
[Detailed information about layouts.](#)

A. Add a Layout to your project

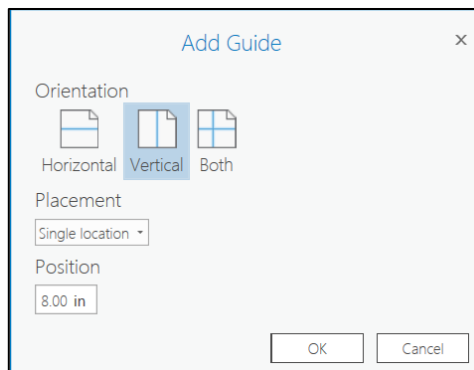
1. On the **Insert** ribbon (Project group) click **New Layout** . You can pick a page size from the gallery, create a custom page size, select a page size from a printer or open a layout file.
2. **Select Letter 8.5" x 11"**. To change the page size or orientation after creation, go to the Layout tab and use the controls in the Page Setup group.



3. Right click **Layout** in the contents tab and **select Properties**.
4. From the **General tab**, **change the name** from Layout to **2000 Acre Fires** and click **OK**.
5. **Right click the top ruler** and **click Add Guides....**



6. Add a **vertical** guide at **8.00 in**.



7. Right click at **0.5 inches** on the vertical ruler guide and **select Add Guide** to directly add a guide.

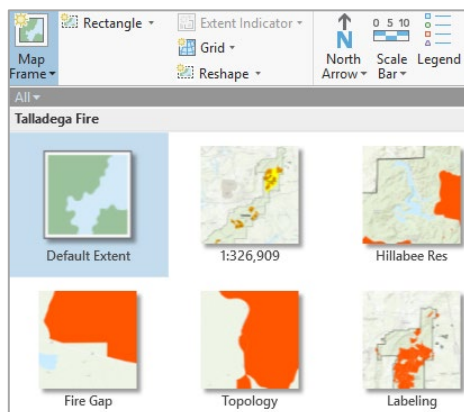
8. **Add another vertical guide at 4.25 and horizontal guides at 9, 2 and 0.5 inches.**

9. **Hover your mouse over the horizontal 9.0 inch guide on the ruler to display a blue triangle. Drag the guide to 10 inches.**

To remove a guide right-click it and select Remove Guide.

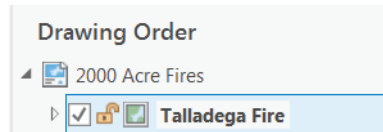
B. Insert a Map Frame

1. On the **Insert** ribbon (Map Frames group) click the **Map Frame** menu then in the **Talladega Fire** section select **Default Extent**. Notice you can select different extents and bookmarks from different map views.

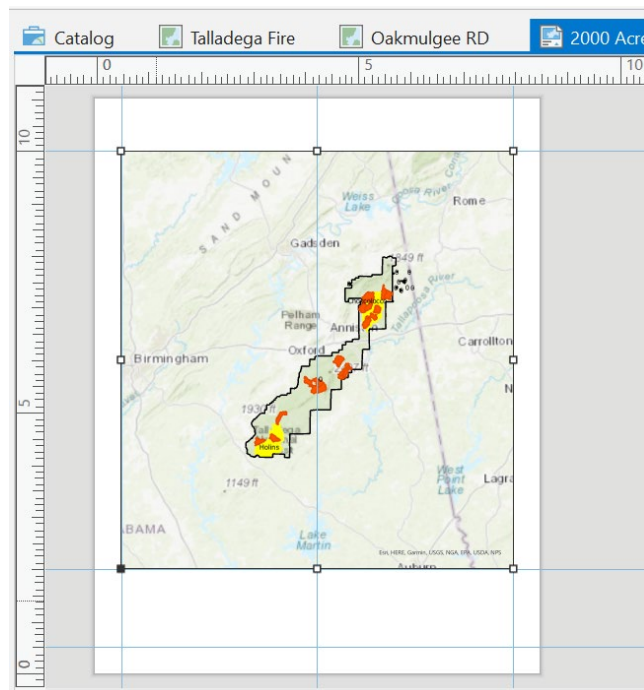


2. **Draw** a box or **single click** in the layout to insert the map.

3. Click on the **Map Frame** from the **Contents** pane. Click again to rename it **Talladega Fire**.



4. From the **Layout** tab click **Select** (not the Select drop down) from the **Elements** group.
5. **Select the map frame** and using the selection handles **resize the map** frame by snapping it to the guides at **horizontal guides at 10 & 2 inches** and **vertical guides at 0.5 & 8 inches**. Resizing the map frame can change the scale and extent of the map, so you'll need to make adjustments.



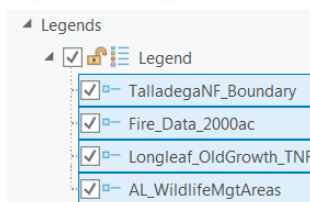
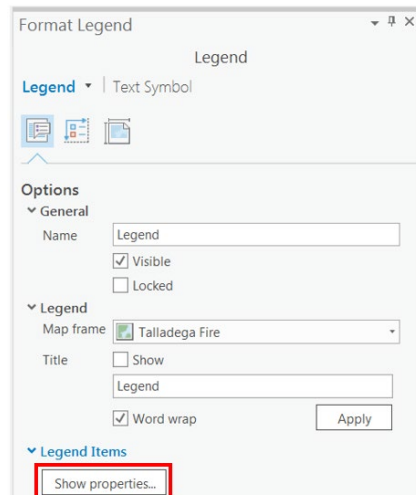
6. To work with the map as a map, rather than as a layout element, you must activate the map frame. In the **Layout** tab (Map group) click **Activate** . The layout page turns gray. On the ribbon, the layout tools are replaced by map tools you may interact with.
7. Click the **Full Extent** button to fill the map frame.
 - i. You can also pan and zoom the map to an extent that you like exposing only the **TalladegaNF_Boundary** and **AL_WildlifeMgtAreas** features.
8. From the top of the layout view click the arrow or **X** to return to layout. Another way to do this is to click **Close Activation** on the **Layout** ribbon.

C. Insert Map Surrounds (Map Elements, Text, Graphics etc.)

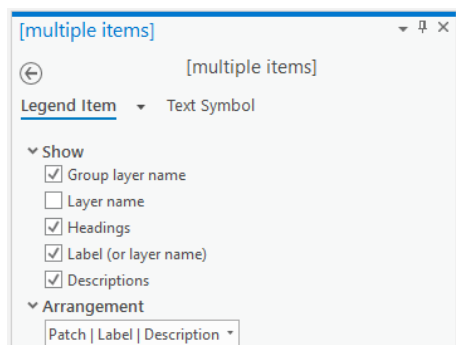
1. **Highlight the Talladega Fire map frame** layer in the **Contents** pane.
2. From the **Insert** tab click on **Legend** from the **Map Surrounds** group.

The mouse pointer turns into **crosshairs**. Using the crosshairs **draw a box** in the **lower right quadrant** of the layout.

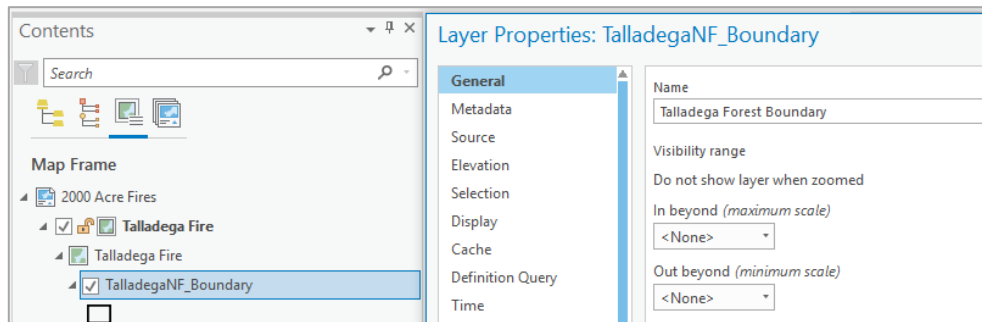
3. **Snap** to **horizontal** guide .5 inch and **vertical** 4.25 inches.
4. **Right click** on the **legend** and **select Properties**. The Format Legend pane opens. Additionally, there is a contextual tab on the ribbon titled Legend with a format tab. Map surrounds and elements can be formatted from these two locations.
5. In the **Format Legend** pane click **Show properties**. All legend items are now selected.



6. The pane is now titled multiple items where additional options are displayed. **Toggle** the **Layer name** check box on and off to see changes. **Toggle off**.



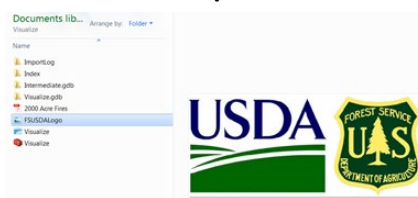
7. Close the Format Legend pane.
8. **Right click** on **TalladegaNF_Boundary** and **click Properties**.
9. From the **General** tab **edit the name** to **Talladega Forest Boundary** and **click OK**. Notice the name updates in the Legend as well.



- i. Change the name of Fire_Data_200ac to 2,000 + Acre Fires.
 - ii. Change the name of AL_WildlifeMgtAreas to Wildlife Management Areas.
10. Click on the **Insert** tab and from the **Graphics and Text** group select **Picture**.



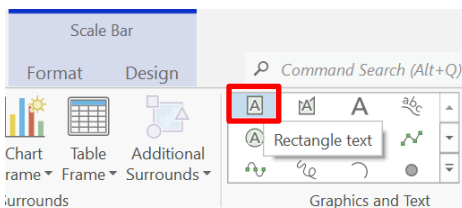
11. Windows explorer opens. Select the photo titled **FSUSDALogo** from the **Visualize** project folder and click **Open**.



12. Using the **crosshairs** draw a **small box** at the **bottom right** of the legend (you might need to move the legend left to make enough space).
13. Adjust the photo to **snap** to the **horizontal** guide **0.5** and **vertical** guide **8.0** while not covering the legend text.



14. On the **Insert** ribbon (Graphics and Text group) click **Rectangle text**.

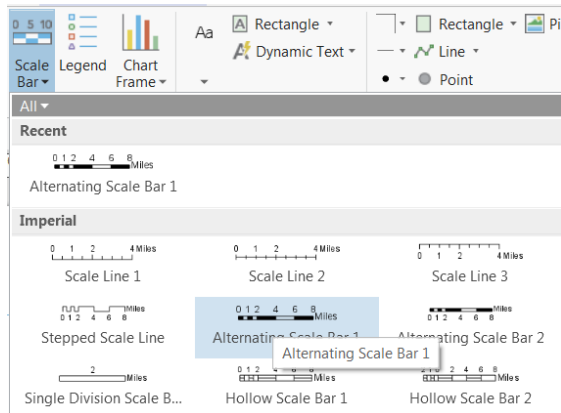


15. **Left click** in the **lower left quadrant** to place the text box.
16. **Expand** the **text box** to **snap** to the **vertical** guides **0.5 & 4.25** inches and the **horizontal** guides **0.5 & 2.0** inches.
17. Copy the following text in the blue box, paste it into the Text section in the Format Text pane, then click Apply (you may also paste it into the layout text box itself).

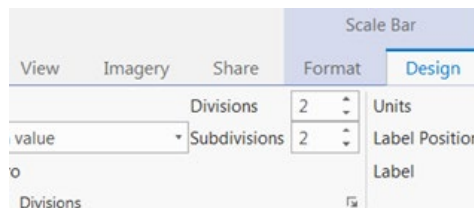
Disclaimer: For training purposes only.

The USDA Forest Service makes no warranty, expressed or implied, including the warranties, of merchantability and fitness for a particular purpose, nor assumes any legal liability or responsibility for the accuracy, reliability, completeness or utility of these geospatial data, or for the improper or incorrect use of these geospatial data.

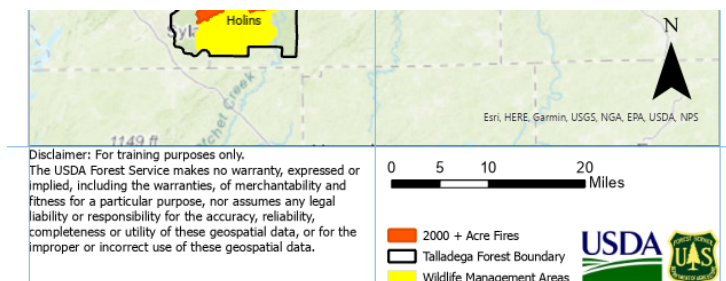
- From the **Insert tab (Map Surrounds group)** click the **Scale Bar** menu and select **Alternating Scale Bar 1** from the **Imperial group** and add it above the Legend.



- From the Scale bar contextual tab set select the **Design** tab.
- From the **Divisions** group reduce the Divisions and Subdivisions to **2** each.



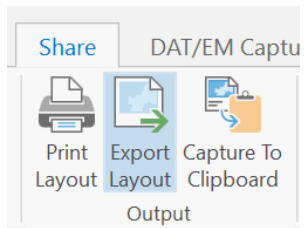
- Stretch the scale bar to be **20** miles in total length.
- Add a **North Arrow** to the bottom right corner of the map frame.



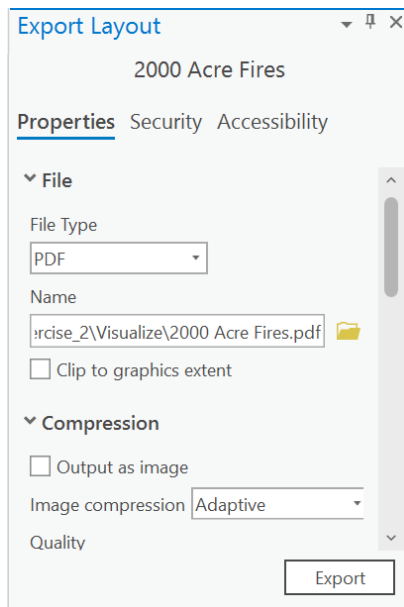
- Add a **title** (e.g., Talladega Fire) above the map frame.

D. Export Map

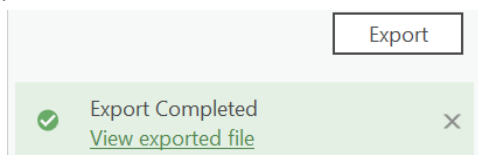
- In the **Contents pane**, click the **Layout title** (2000 Acre Fires) then click on the **Share Tab**.
- Click **Export Layout**.

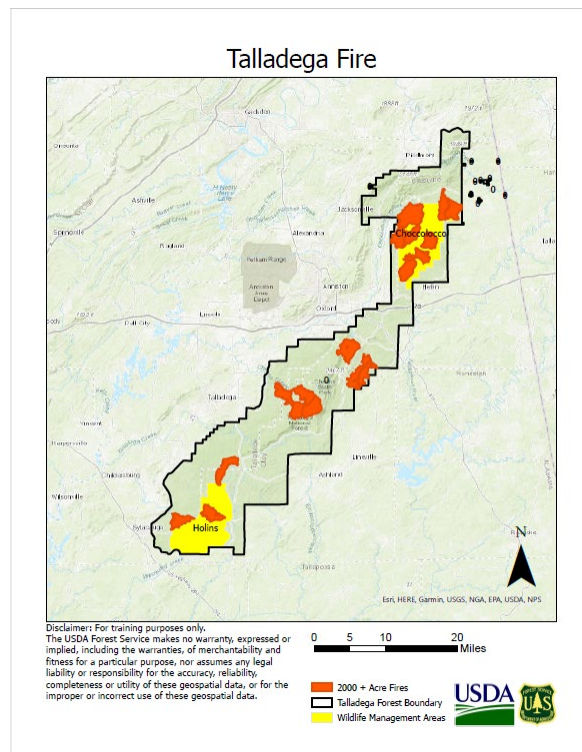


3. Set the **File Type** as a **PDF**.
4. Set the Name field path to your **Visualize project folder** and give it an appropriate name.



5. Click **Export**.
6. When the export has completed, click **View exported file** at the bottom of the Export Layout pane.





Part 4: Optional: Share a Package

A package is a compressed file containing GIS data. You share a package in the same way as any other file—via email, FTP, the cloud, thumb drives, and so on. You share them between colleagues in a workgroup, between departments in an organization, or with other users via ArcGIS Online and ArcGIS Enterprise. The recipient of your package unpacks it and can immediately begin using its contents. Packages can also be used to archive your work. For detailed information on sharing packages follow [this link](#).

You can create the following packages with ArcGIS Pro:

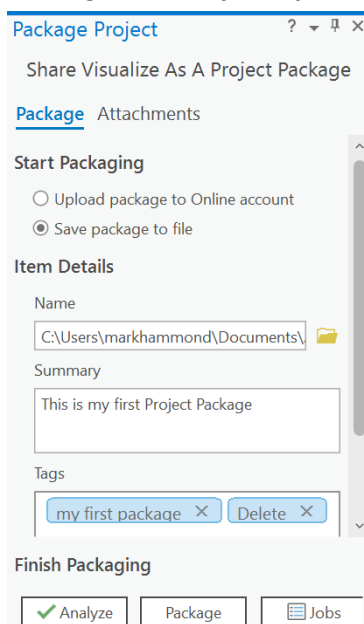
- A [project package](#) (.ppkx) saves and shares a project along with its maps, data, styles, toolboxes, tasks, attachments, geoprocessing history, and connections.
- A [map package](#) (.mpkx) contains a map document (.mapx) and all the data referenced by the layers in it. Essentially, it's a collection of layer packages along with the map document.
- A [layer package](#) (.lpkx) includes both the layer properties and the dataset referenced by the layer. With a layer package, you can save and share everything about the layer—its symbolization, labeling, table properties, and the data.
- A [tile package](#) (.tpk) contains a set of tiles (images) from a map or raster dataset that can be published as a web tile or web elevation layer. Alternatively, the tile package itself can be used as a basemap in ArcGIS applications.

- A [vector tile package](#) (.vtpk) contains a collection of vector tiles and style resources that contain vector representations of data across a range of scales.
- A [scene layer package](#) (.slpk) contains a cache of a multipatch, point, or point cloud dataset.
- A [geoprocessing package](#) (.gpkx) contains both the data and the tools that comprise a geoprocessing workflow. System tools along with custom models and scripts can be packaged.
- A [mobile map package](#) (.mmpk) contains both maps and basemaps and all the data referenced by the layers. Mobile map packages can be used in ArcGIS Pro, Navigator for ArcGIS, and by developers building applications with ArcGIS Runtime. For ArcGIS Runtime, .mmpk files were introduced at version 100.0.0.

A. Share a Project Package

Project packages (.ppkx) make it easy to share complete projects. A project package is a file that contains all maps and the data referenced by its layers, as well as folder connections, toolboxes, geoprocessing history, and attachments. Project packages can be used for sharing projects between colleagues in a work group, across departments in an organization, or with any other ArcGIS users through ArcGIS Online or ArcGIS Enterprise. Project packages can also be used to create an archive of a particular project that contains a snapshot of its current state

1. In the **Share tab** (Package group), click the **Project** button to open the Package Project pane.
2. Specify where to **save** your package, **either** to your **online account** or to a **file** (you can try both).
3. If saving to a file, set the location and name of the package.
4. For Summary enter: **This is my first Project Package**.
5. For Tags enter: **my first package, Delete** (to remind you to delete eventually).



6. If sharing on AGOL, DO NOT click the box to share with the U.S. Forest Service (we do not want to be sharing this with the entire FS).

Share with

☐ Everyone

☐ U.S. Forest Service

▼

*If you check **Share outside of organization**, data is extracted from enterprise databases and UNC path folders and copied into a file geodatabase, styles will be copied, and all connections will be removed.*

* Tags

☐ Share outside of organization ⓘ

☒ Include Toolboxes ⓘ

7. Click on the **Attachments** tab.

Attachments: This option allows you to include other content, such as detailed documentation, reports, and graphs. The following types of files cannot be included: .js, .vbs, .py, .pyc, .pyo, .bat, and .ocx. Also, only signed .dll files and .exe files are allowed.

8. Click **Analyze** to check for any errors or issues. All errors must be resolved. If any issues exist, they appear on the Messages tab. Right-click each message to get more information, read the help for the error or warning, and access suggested fixes.
9. Once the package is **validated** and all **errors are fixed** click **Package** to create your package (this may take a couple of minutes to complete).

Finish Packaging

Successfully created project package on 6/1/2022 10:26:13 AM.

[Manage the package](#)

usfs.maps.arcgis.com/home/item.html?id=baed389d11ca4f1db5f607276ff58177

Home Gallery Map Scene Groups Content Organization

Visualize

Overview Usage Settings

This is my first Project Package

☒ Project Package by markhammond_usfs

Created: Jun 1, 2022 Updated: Jun 1, 2022 Number of Downloads: 0

Congratulations, you have completed the exercise.