

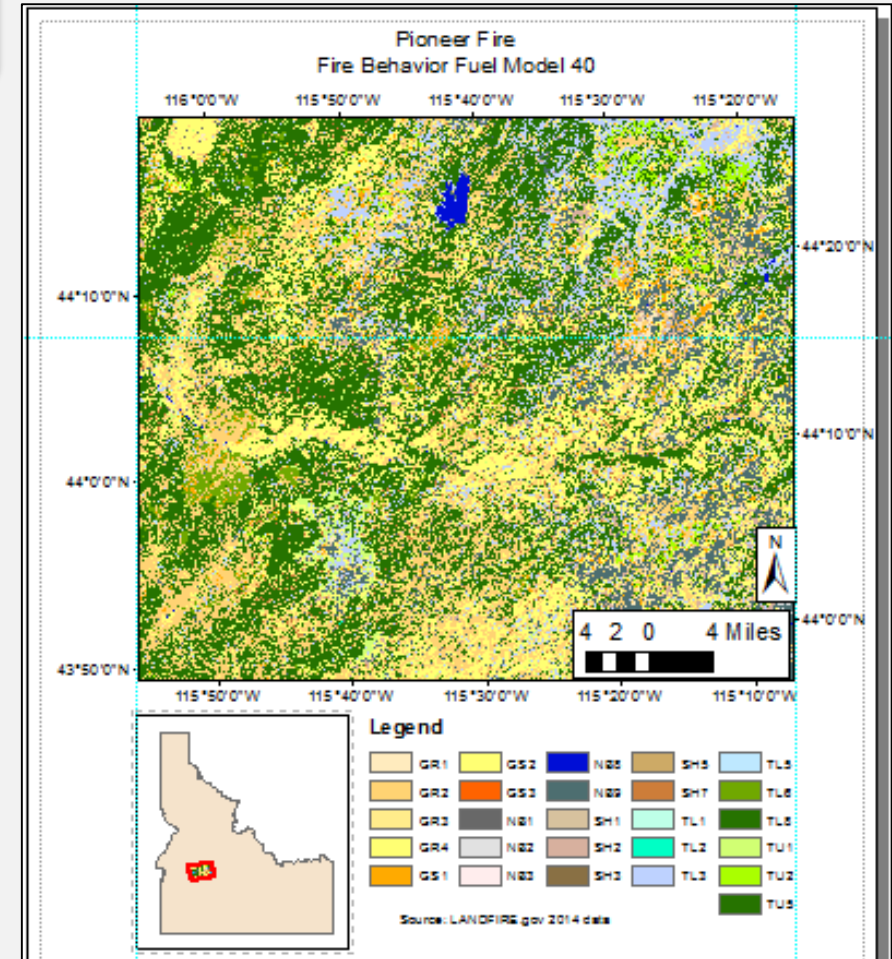
Software: ArcMap 10x
Updated: April 2017 by Heather Heward

Overview

Creating a quality map can have a significant impact on the way your information is received. Take the time to include all necessary map elements and organize them in a logical and visually appealing way.

There are many tools available for map making, *some* of which are covered here. View the recommended videos for other design suggestions.

- Overview of Major Steps:**
1. Working in layout view
 2. Adding and organizing map elements



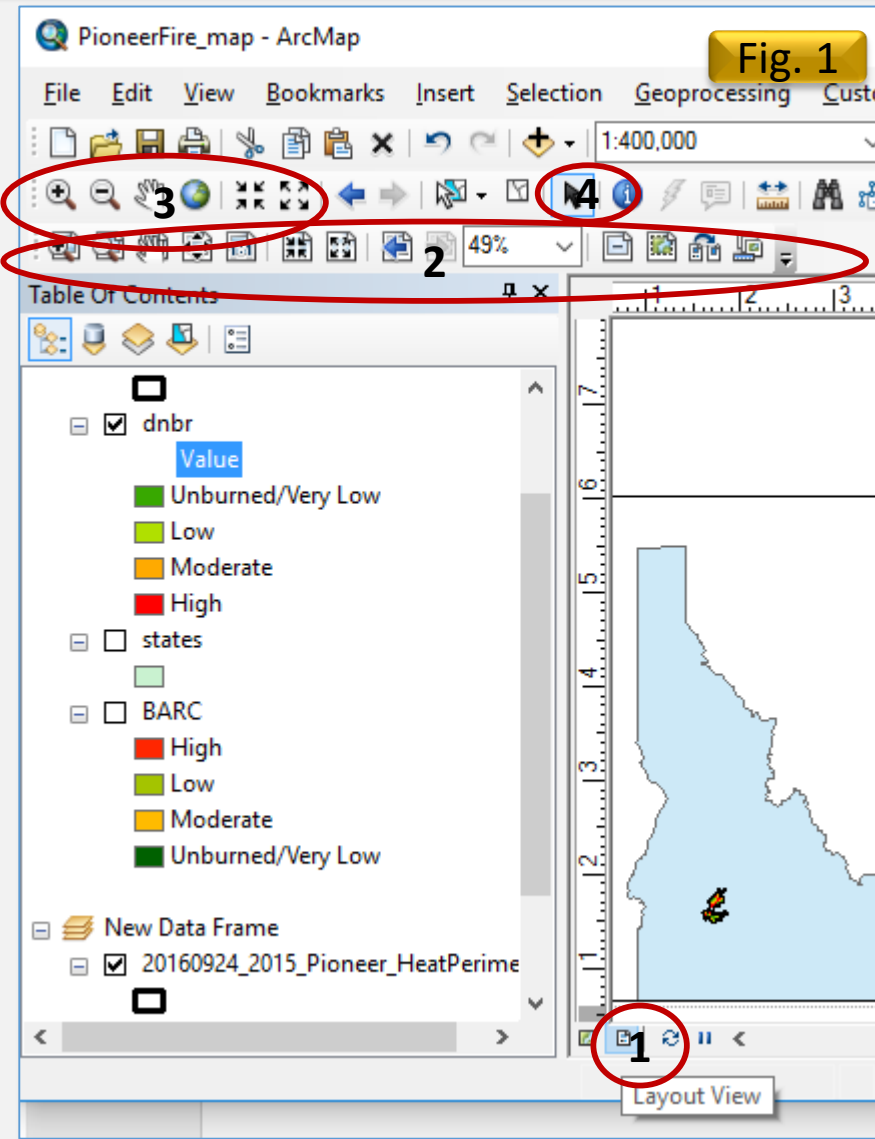
Step 1: Working in Layout View

1.1 Navigating in Layout View

- a. Click on **Layout View** in the lower-left of your view screen (figure 1 (1)). This activates the layout toolbar (2)
- b. Navigating in the layout view
 - a. In the Tools toolbar use the features to the left (3) to move the feature **IN** the data frame. Use the black arrow (4) to move the whole data frame on the layout page.
 - b. The layout toolbar (2) is used to move the **entire** Layout View around

1.2 Adding a new data frame

- a. Select **Insert >> Data Frame**
- b. In the layout view you can also copy and paste the active data frame.
- c. With the black arrow (4) as the active tool you can click on the data frame to make it active.
- d. To add data to a new data frame you can drag layers from other data frames or add from file.



Step 2: Creating a Balanced Map

There are subtle differences between an unbalanced (figure 1) balanced (figure 2) map. Notice the following → location and size of map elements, location of features IN data frames, size of margins etc.

2.1 Blocking your map

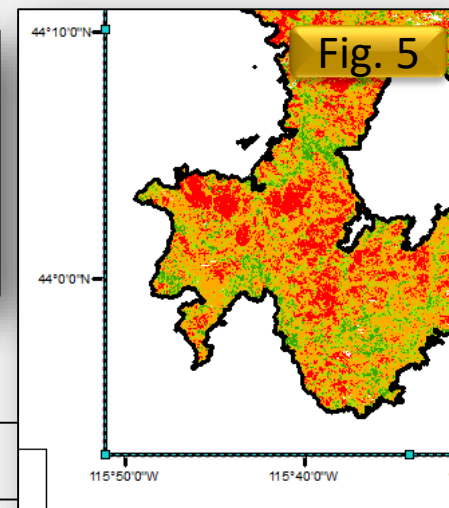
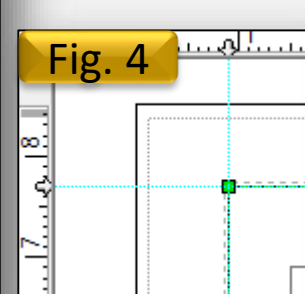
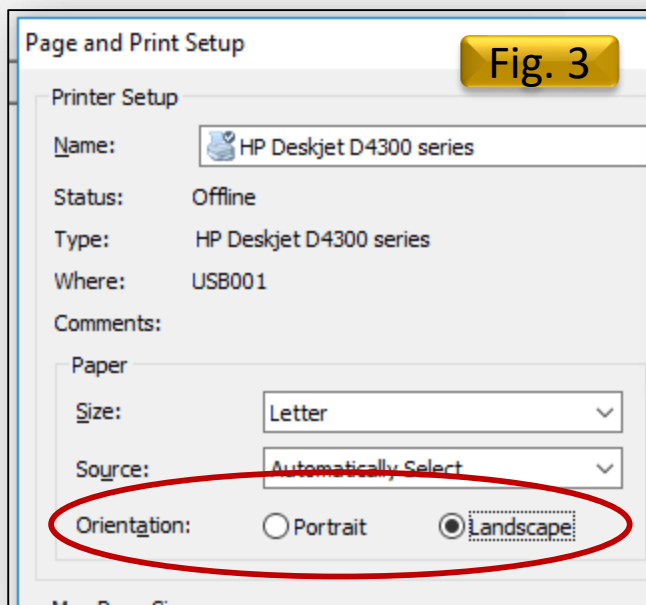
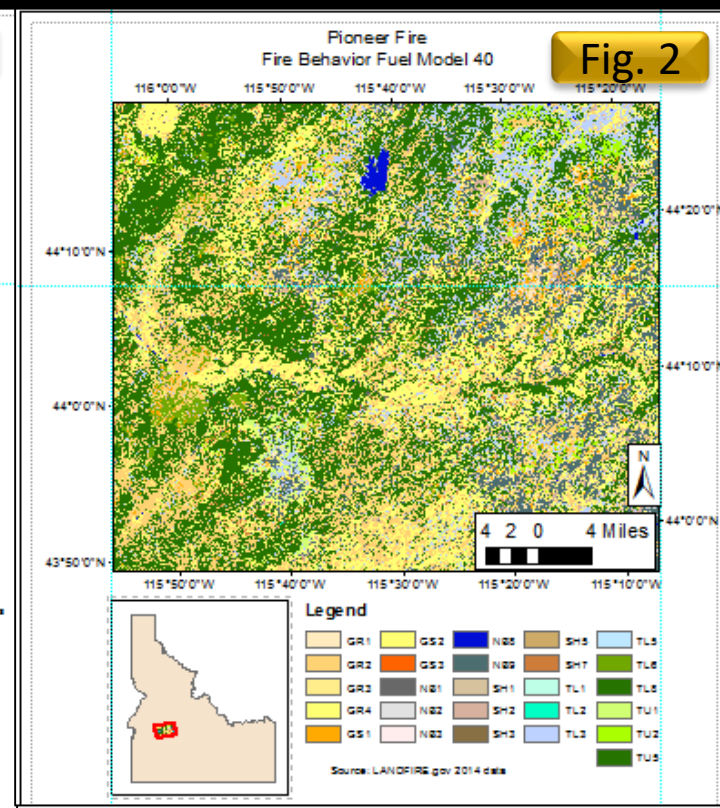
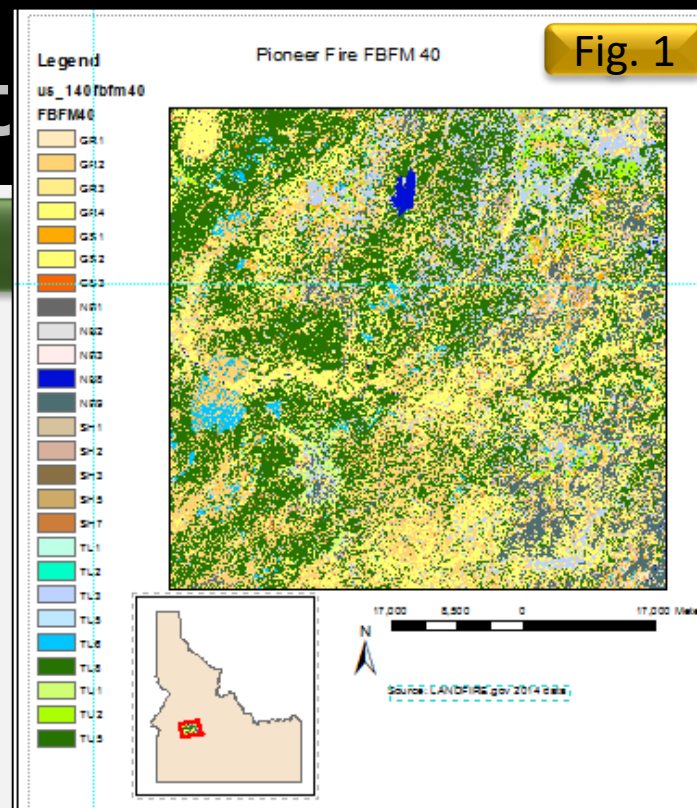
- On a piece of paper roughly sketch out where you want your map elements to be.
- Determine if portrait or landscape orientation would be best. To change go to **File >> Page a print setup >> Orientation** (figure 3)

2.2 Aligning elements

- Recommended Video: [Making Better Map Layouts with ArcGIS](#) 11:07
- Highlight multiple map elements (drag box over elements to select)
- Right-click and select *Align* – from here you can choose if you want them to line up on the top, side, center etc.
- Adding guides – click in the ruler space and a guide arrow will appear. You can move features and they will snap to the guide (figure 4)

2.3 Adding reference grids and graticules

- Recommended article: [A quick tour of the data frame grids and the Grids and Graticules Wizard](#)
- In data frame Properties on the *Grids* tab select **New Grid**. This add useful spatial information to your map. (figure 5)

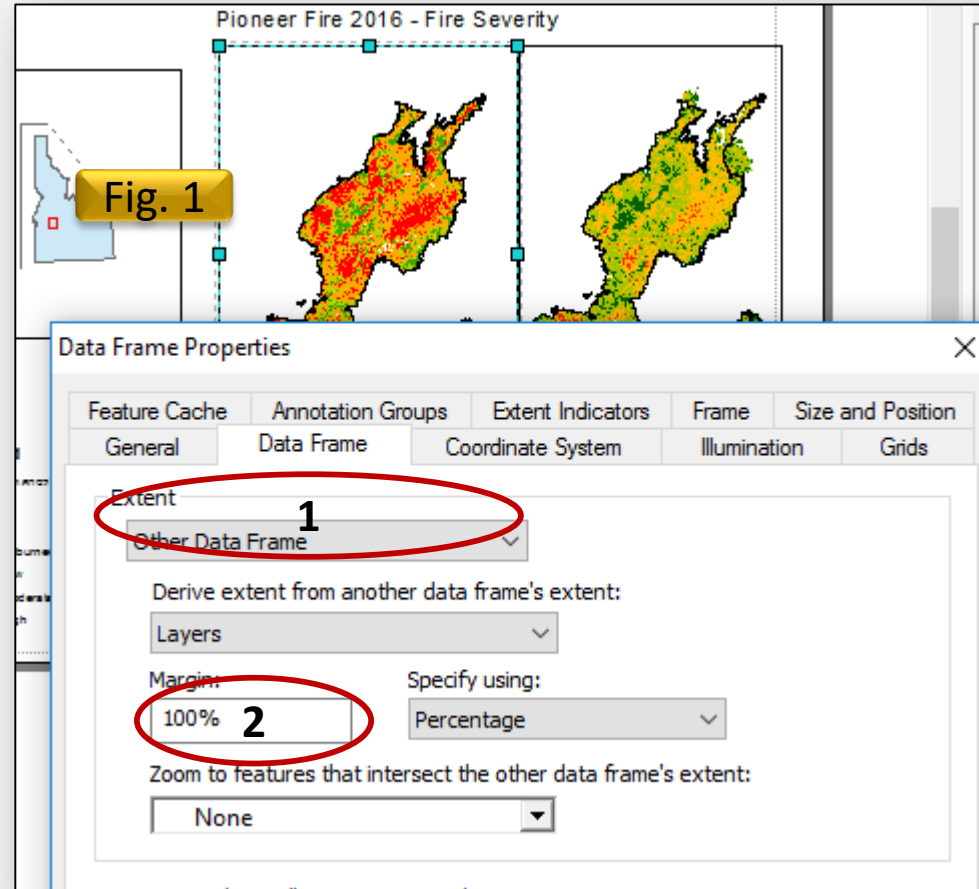


Step 2: Creating a Balanced Map

2.4 Syncing Data Frames

Move the content of one data frame around the other will move as well.

- Recommended Video: [ArcMap 10.1: Sunc/Match 2dataframe Extends](#)
- Go to Layer Properties >> *Data Frame* tab
- Change *Extent* to *Other Data Frame* (figure 1 (1))
- For an exact match change *Margin* 100% click **OK**



Step 3: Adding and Organizing Map Elements

3.1 Adding map elements

- a. From *Insert* add at least the following elements.
 - a. Title – be specific to what is being shown.
 - b. North Arrow – fancier might not be better
 - c. Scale bar – choose logical units and size to an even interval (ex. 5, 10)
 - d. Legend (see below)
 - e. Source – important if you obtained the data from other places, adds context to your map.

3.2 Editing Legend

- a. You can choose which layer or layers you would like the legend created from.
- b. Figure 1 shows a legend with the defaults selected
- c. Figure 2 shows the same legend with the following changes made by right-clicking on the Legend and selecting **Properties**. You can move the Legend Properties dialog box and select **Apply** after each change to see its effects.
 - a. General tab – turn *Legend* title on and off
 - b. Layout – change number of columns
 - c. Frame – Add a *Border*, increase the gap around the legend, add rounding to the corners of the border(1). Add *drop shadow*, Adjust the Offset and match the rounding to that of the border(2)
- d. The titles “FBFM 40” and “FBFM40” can be deleted by removing them in the Table of Contents
- e. Figure 3 is an example of a final product

Fig. 1

Legend

FBFM 40
FBFM40

GR1
GR2
GR3
GR4
GS1
GS2
GS3
NB1
NB2
NB3
NB8
NB9
SH1
SH2
SH3
SH5
SH7
TL1
TL2
TL3
TL5
TL6
TL8
TU1
TU2
TU5

Fig. 3

FBFM 40	NB2	TL1
GR1	NB3	TL2
GR2	NB8	TL3
GR3	NB9	TL5
GR4	SH1	TL6
GS1	SH2	TL8
GS2	SH3	TU1
GS3	SH5	TU2
NB1	SH7	TU5

Fig. 2

Legend Properties

General Items Layout Frame

Border

Color: [Black]

Gap X: 10 pts Y: 1 pts Rounding: 5 %

Background

Color: [Grey]

Gap X: 0 pts Y: 0 pts Rounding: 0 %

Drop Shadow

Color: [Grey]

Offset X: 5 pts Y: 2 pts Rounding: 5 %

Draft mode - just show name



Step 4: Formatting Data Frame

If using a state as a reference you can find state shape files on various websites. Set up a new data frame to your desired extent

4.1 Add extent rectangle (figure 1 (1))

- Recommended video: [Quick Demo: Adding an Insert Map and Extent Indicator](#)
- Right-click on the reference data frame and select *Properties*
- On the *Extent Indicators* tab (1)
- Select the other layer you would like to define the extent rectangle (2) (if you have multiple data frames, labeling them can be helpful)
- Select *Options - Layers Frame* (3) to adjust the boarder

4.2 Clipping a data frame


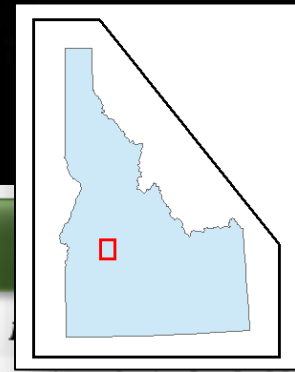
- Recommended video: [Making Better Map Layouts with ArcGIS](#) 33:54 (minor differences with newer versions of Arc)
- Go to the *Data View* (lower left) 
- With the *Draw* toolbar on (figure 2) select the *Rectangle* option and draw a rectangle over the extend of the reference data frame (figure 3 – blue rectangle).
- Right-click >> *Properties* - remove the fill
- Again using the *Draw* toolbar (figure 2) this time select the *Polygon* shape and draw a feature that you will eventually subtract from your first rectangle. Extend this polygon over the edge of rectangle (figure 3) outlined in green)
- Hold down the shift key to select both the rectangle and the polygon.
- Right-click >> *Graphic Operations* >> *Subtract* (figure 3)

Fig. 1 Data Frame Properties dialog, Extent Indicators tab. The 'Extent Indicators' tab is circled in red with a '1'. A layer named 'Layers' is selected in the 'Other data frames' list, circled in red with a '2'. The 'Options - Layers Frame...' button is circled in red with a '3'.

Fig. 2 Drawing toolbar showing the 'Rectangle' tool selected, circled in red.

Fig. 3 Map view showing a blue rectangle and a green polygon. A context menu is open over the map, with 'Graphic Operations' > 'Subtract' circled in red.



Step 4: Formatting Data Frame

4.2 Clipping a data frame (continued)

- From the table of contents right-click on the data frame and select *Properties* >> *Data Frame* tab (figure 1 (1))
- Under *Clip Option* select *Clip to Shape* (2) then **Specify Shape** (3)
- Select *Outline of Selected Graphics* (4) then **OK**
- Add a border (5)
- On the *Frame* tab (6) change the border to *None* – this will allow the new shape to be visible and not the normal rectangle of the data frame
- View the change in the *Layout View*
- Additional clipping ideas and directions: [Clip the Data Frame to Make Your Map Polished, Professional.](#)

