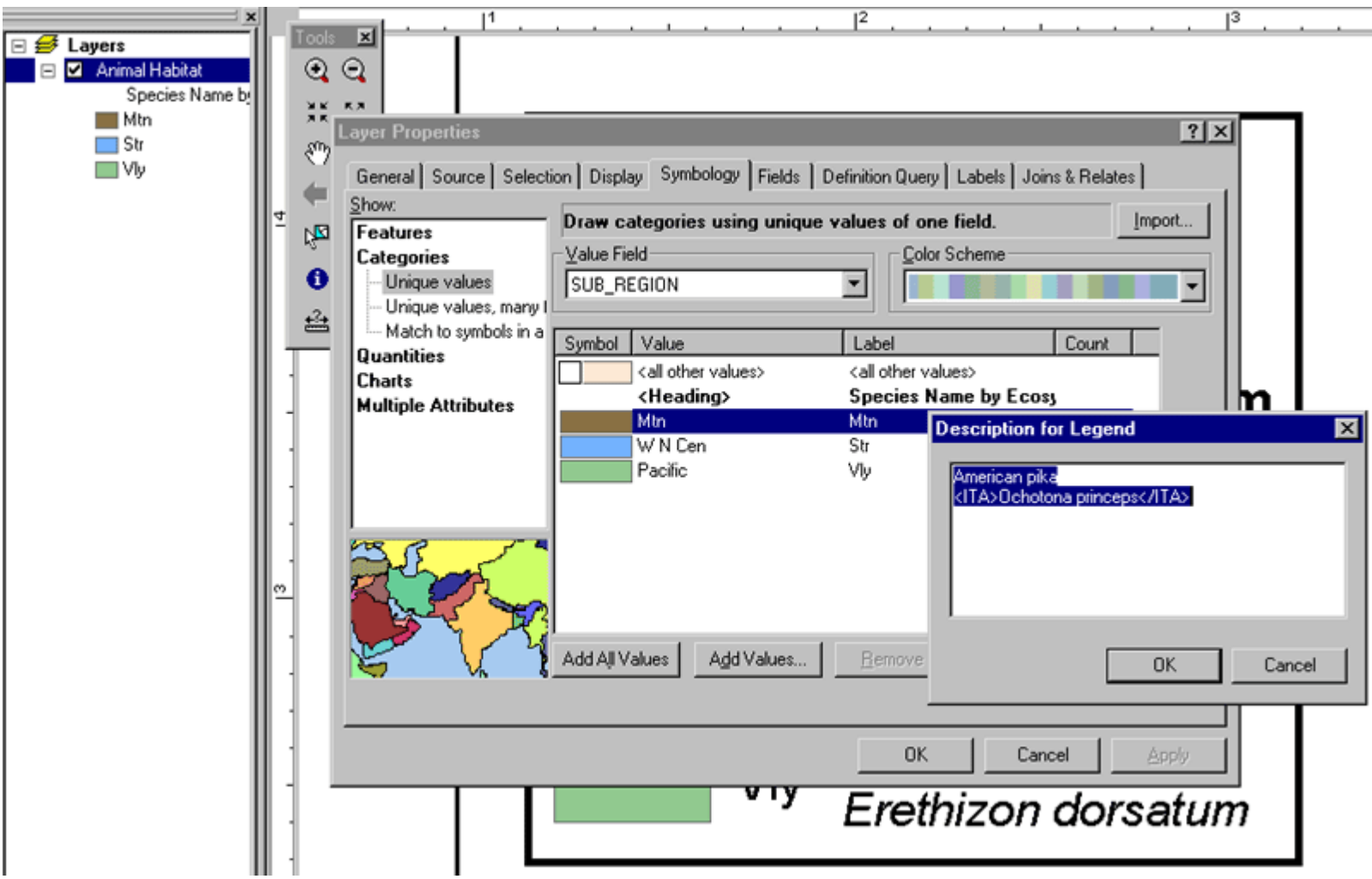


Mapping and visualization

Adding mixed format text to legend descriptions



Mapping and visualization

Adding north arrows, scale bars, and other map elements

related topics

About adding map elements

Some **map elements** are related to the data in data frames. North arrows, scale bars, scale text, and legends are examples of such elements.

Learn about other map elements such as [titles](#); [graphic elements, pictures, and neatlines](#); [reports](#); and [graphs](#).

North arrows

North arrows indicate the orientation of the map.

Scale bars

Scale bars provide a visual indication of the size of features and distance between features on the map. A scale bar is a line or bar divided into parts and labeled with its ground length, usually in multiples of map units such as tens of kilometers or hundreds of miles. If the map is enlarged or reduced, the scale bar remains correct.

When you add a scale bar to a map, the number and size of the divisions might not be exactly as you want them. For example, you might want to show four divisions rather than three or show 100 meters per division instead of 200. You might also want to change the units that the scale bar shows or adjust how those units are represented. You can adjust many characteristics of a scale bar from the Scale Bar Properties dialog box.

When you add a scale bar to a map, the number labels and tick marks might not be exactly as you want them. For example, you might want to label the endpoints of the scale bar but not the divisions, or you might want larger tick marks at the major divisions of the bar than at the minor ones.

Scale text

You can also represent the scale of your map with scale text. Scale text indicates the scale of the map and features on the map. Scale text tells a map reader how many ground units are represented by a map unit—for example, "one centimeter equals 100,000 meters".

Scale text can also be an absolute ratio independent of units, such as 1:24,000. This means one unit on the map is equal to 24,000 of the same units on the ground. The advantage of absolute scale text is that map readers can interpret it with any units they want.

One drawback of scale text is that if a printed copy of the map is duplicated at another scale (enlarged or reduced), the scale text will be in error. Scale bars do not suffer this limitation. Many maps have both scale text and a scale bar to indicate the map scale.

Legends

A legend tells a map reader the meaning of the symbols used to represent features on the map. Legends consist of examples of the symbols on the map with labels containing explanatory text. When you use a single symbol for the features in a layer, the layer is labeled with the layer's name in the legend. When you use multiple symbols to represent features in a single layer, the field you used to classify the features becomes a heading in the legend and each category is labeled with its value.

Legends have patches that show examples of the map symbols. By default, the legend patches are points, straight lines, or rectangles that match the map symbols. You can customize the legend patches, for example, so areas are represented with patches of another shape or rivers are drawn with a sinuous rather than a straight line.

[Learn more about working with legend patch shapes](#)

Frames

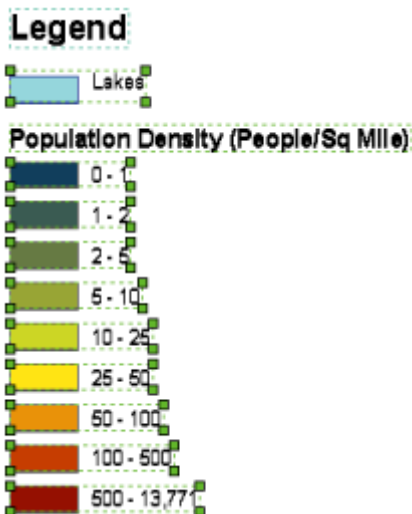
Certain map elements—including scale bars, scale text, north arrows, legends, and data frames—can have frames. You can use frames to set map elements apart from other elements or from the background of the map. You can also use frames to visually link map elements to other parts of the map by using similar frames for related elements.

Converting map elements to graphics

You might want to convert a map element, such as a legend, to graphics if you want more precise control over each item that comprises the map element.

It is important to note that once you convert a map element into a graphic, it is no longer connected to its original data and will not respond to changes made to the map. For instance, with a legend element, if you decide to add another layer to the map after the legend has been converted to a graphic, the legend will not automatically update. It will have to be deleted and rebuilt again using the Legend wizard. Therefore, it is a good idea to convert elements to graphics only after your map, symbology, and so on, are finalized.

The image below shows a legend that has been converted to a graphic.



You can further ungroup the legend graphics so the individual elements (the patches, text, and so on) that comprise the legend can be edited individually.

How to add map elements

Adding a North arrow

1. Click the Insert menu and click North Arrow.
2. Click a north arrow.
3. Click OK.
4. Click and drag the north arrow into place on your map.

Optionally, resize the north arrow by clicking and dragging a selection handle.

Tips

- Map elements aren't always the size you want when they're added to a map. You can change the size of map elements by selecting them and dragging the selection handles. Dragging a handle away from an element enlarges it, while dragging a handle toward an element reduces it.
- Each map element has a name used to identify the element. For example, when the layout is in draft mode, each element is drawn as a hollow frame containing the name of the element. By default, the name is based on the element type, such as Scale Line or North Arrow, but you can change it to a unique or more descriptive name on the Size and Position tab of the element's Properties dialog box. In addition, developers can take advantage of this name property to find and manipulate elements (IElementProperties::Name).

A data frame's name property is always the same as what's

shown in the table of contents. Therefore, updating the name inside the Data Frame Properties dialog box will also update its name in the table of contents.

Adding a scale bar

1. Click the Insert menu and click Scale Bar.
2. Click a scale bar.

Optionally, click Properties to modify the scale bar's properties.

3. Click OK.
4. Click and drag the scale bar into place on your map.

Optionally, resize the text on the scale bar by clicking and dragging a selection handle.

Tips

- Map elements aren't always the size you want when they're added to a map. You can change the size of map elements by selecting them and dragging the selection handles. Dragging a handle away from an element enlarges it, while dragging a handle toward an element reduces it.
- Each map element has a name used to identify the element. For example, when the layout is in draft mode, each element is drawn as a hollow frame containing the name of the element. By default, the name is based on the element type, such as Scale Line or North Arrow, but you can change it to a unique or more descriptive name on the Size and Position tab of the element's Properties dialog box. In addition, developers can take advantage of this name property to find and manipulate elements (IElementProperties::Name).

A data frame's name property is always the same as what's shown in the table of contents. Therefore, updating the name inside the Data Frame Properties dialog box will also update its name in the table of contents.

Customizing a scale bar's scale and units

1. Right-click the scale bar and click Properties.
2. Click the Scale and Units tab.
3. Click the arrow buttons to set the number of divisions.
4. Click the arrow buttons to set the number of subdivisions.
5. Click the When resizing drop-down arrow and click how you want the scale bar

to respond when the map scale changes. Adjust division value—the division value will vary with the map scale. The number of divisions and the width of the scale bar remain constant. Adjust number of divisions—the number of divisions will vary with the map scale. The division value and the width of the scale bar remain constant. Adjust width—the width of the scale bar will vary with the map scale. The division value and number of divisions remain constant.

6. Choose the units for the scale bar.
7. Click Symbol and choose a text style for the scale bar labels.
8. Click OK.

Tips

- By default, the units label on a scale bar is the same as the scale bar units. Sometimes you might want to change the label of the scale bar, for example, from Kilometers to km. Just type the new scale bar label in the Label text box.
- You can only change the size, position, and frame of an element after it has been placed on the map. If you click Properties while inserting a map element, you won't see the Size and Position tab or the Frame tab.

Customizing a scale bar's numbers and marks

1. Right-click the scale bar and click Properties.
2. Click the Scale and Units tab.
3. Click the Numbers Frequency drop-down arrow to choose where along the bar to place the numbers.
4. Click the Numbers Position drop-down arrow to choose where to place numbers relative to the bar.
5. Click the Marks Frequency drop-down arrow to choose where along the bar to place tick marks.
6. Click the Marks Position drop-down arrow to choose where to place tick marks relative to the bar.
7. Click the Division Height arrow buttons to increase or decrease the height of division tick marks.
8. Click the Subdivision Height arrow buttons to increase or decrease the height of subdivision tick marks.
9. Click OK.

Adding scale text

1. Click the Insert menu and click Scale Text.

2. Click a sample of the style of scale text to add to the map.
Optionally, click Properties to customize the scale text.
3. Click OK.
4. Click and drag the scale text into position on your map.
Optionally, set a specific font size for the scale text by choosing a font size from the font size drop-down list on the Draw toolbar.

Tips

- Map elements aren't always the size you want when they're added to a map. You can change the size of map elements by selecting them and dragging the selection handles. Dragging a handle away from an element enlarges it, while dragging a handle toward an element reduces it.
- Each map element has a name used to identify the element. For example, when the layout is in draft mode, each element is drawn as a hollow frame containing the name of the element. By default, the name is based on the element type, such as Scale Line or North Arrow, but you can change it to a unique or more descriptive name on the Size and Position tab of the element's Properties dialog box. In addition, developers can take advantage of this name property to find and manipulate elements (IElementProperties::Name).

A data frame's name property is always the same as what's shown in the table of contents. Therefore, updating the name inside the Data Frame Properties dialog box will also update its name in the table of contents.

Adding a legend

1. Click the Insert menu and click Legend.
The Legend wizard appears. If this wizard doesn't appear, wizards have been turned off. When wizards have been turned off, a default legend will be immediately added to your layout. You can double-click this legend to change its properties. If you'd prefer to use the Legend wizard when you insert a legend, you need to turn wizards back on. Click Options from the Tools menu and click the General tab on the dialog box that appears. Check the Show Wizards when available box.
2. To remove a legend item, click it, and click the left arrow button.
By default, all the layers on the map will appear as legend items in the legend.
3. Use the Up and Down arrow buttons to order the legend items.
4. Click Next.

5. Type a title for the legend.
6. Set the text color, font, and size as desired, then click Next.
7. Click the Border drop-down arrow and click a border.
8. Click the Background drop-down arrow and click a background.
9. Click the Drop Shadow drop-down arrow and click a drop shadow.
10. Click Next.
11. Click a legend item in the list to modify the symbol patch.
12. Set the Patch properties as desired and click Next.
13. Set the spacing between legend elements by typing a value into the appropriate box.
14. Click Finish.

Tips

- When you have more than one data frame, inserting a legend adds a legend for the selected data frame. Each legend corresponds to a single data frame, although you can arrange multiple legends together as a single legend for a complex map.
- You can edit the text of the labels that appear in the legend by changing the text in the ArcMap table of contents or on the Symbology tab of the Layer Properties dialog box.
- You can change the text symbol used by multiple legend items using the Items tab of the Legend Properties dialog box. You can change the text symbol of all the items in the legend or just the ones you have selected in the list. A drop-down list lets you choose the parts of the legend items to which you want the text symbol to apply.
- If you want an additional description of single symbol layers to appear in your legend, choose a legend item style that includes a description. To add a description, right-click the layer to which you want to add descriptive text in the table of contents, click Properties, add click the Symbology tab on the Layer Properties dialog box. If you are using the Single symbol method, click the Description button. If you are using a drawing method other than Charts, right-click a symbol after you have specified its symbology options and click Edit Description. The text you enter will appear next to that symbol in the legend; the text won't appear in the table of contents.
- If you want your description to be on more than one line, insert a line break by pressing the Ctrl and Enter keys together in the

Description for Legend dialog box.

- Legend text can be formatted using ESRI text formatting tags. See [Using text formatting tags](#) for more information.

Changing the patches in a legend




1. Right-click the legend on the map and click Properties.
2. Click the Legend tab.
3. Click the drop-down arrow to choose a new patch shape.
4. Click OK.

Tip


- If you have transparent symbols, you can have the patches in your legend display the opaque color values. However, you'll need to convert your legend to graphics, which removes its link to the data frame. See "Changing the patches in a legend that has transparent symbols".

Changing the patches in a legend that has transparent symbols

If you know the opaque color values of your transparent symbols, you can start at step 5.

1. Click Tools on the Main menu and click Customize.
2. Click the Commands tab and click Page Layout.
3. Click the Eye Dropper tool  from the Commands list and drag and drop it onto a toolbar, then close the Customize dialog box.
4. Click the Eye Dropper tool  and click a polygon feature in the data frame.
The Color dialog box displays the color name in Red, Green, Blue combination, and the displayed color is saved to the color palette.
5. Click the Select Elements tool  in layout view.
6. Right-click the legend and click Convert to Graphics.
NOTE: The legend is now a graphic and is no longer linked to the data frame.
7. Click Drawing on the Draw toolbar and click Ungroup.
Repeat Ungroup until the legend patches and text are completely ungrouped.
8. Click the legend patch you want to change.

The patches are now simple graphics.

9. Click the Fill Color button  on the Draw toolbar to open the color palette.
10. Click the recently saved color in the color palette to apply it to the legend patch.

Tips

- Converting your legend to graphics removes its link to the data frame.

[Learn more about working with graphics](#)

- Your colors don't need to be transparent to use the Eye Dropper tool; you can use it to identify and save any color on your map.

[Learn more about working with color](#)

Changing the items in a legend

1. Right-click the legend on the map and click Properties.
2. Click the Items tab.
3. Click a legend item in the Legend Items list.
4. Click the up and down arrows to move the item up or down in the legend.

Optionally, click Style and change the item's style in the legend, or check Place in new column to place the item in a new column, or change the number of columns for the selected legend item by clicking the up and down arrow keys, or remove an item from the legend by clicking it and clicking the left arrow key.

5. Click OK.

Tip

- If you have two layers with the same geometry in a data frame—for example, a layer of roads and a layer of streams—you can set their legend patches independently so that roads are shown with a straight line and rivers with a sinuous line. In the Legend Items list, click the item for the layer you want to change, right-click and click Properties, click the General tab and check the Override default patch box, then click the Patch drop-down arrow and click a new patch.

Framing a map element

1. Right-click the element on the map and click Properties.
2. Click the Frame tab.
3. Click the Border drop-down arrow and click a border.

4. Click the Background drop-down arrow and click a background.
5. Click the Drop Shadow drop-down arrow and click a drop shadow.
6. Click OK.

Tips

- If you can't see the Frame tab, remember that you can only set the frame properties after an element has been placed on the map.
- If you group some elements together, you can right-click the group and set a frame for the group.

Converting map elements to simple graphics

1. Right-click an element and click Convert to Graphics.

Remember that once you convert a map element into a graphic, it is no longer connected to its original data and therefore will not respond to changes made to the map.

2. You can further ungroup the graphics by right-clicking the graphic and clicking Ungroup. Once ungrouped, the individual items that comprise the map element can be edited individually.