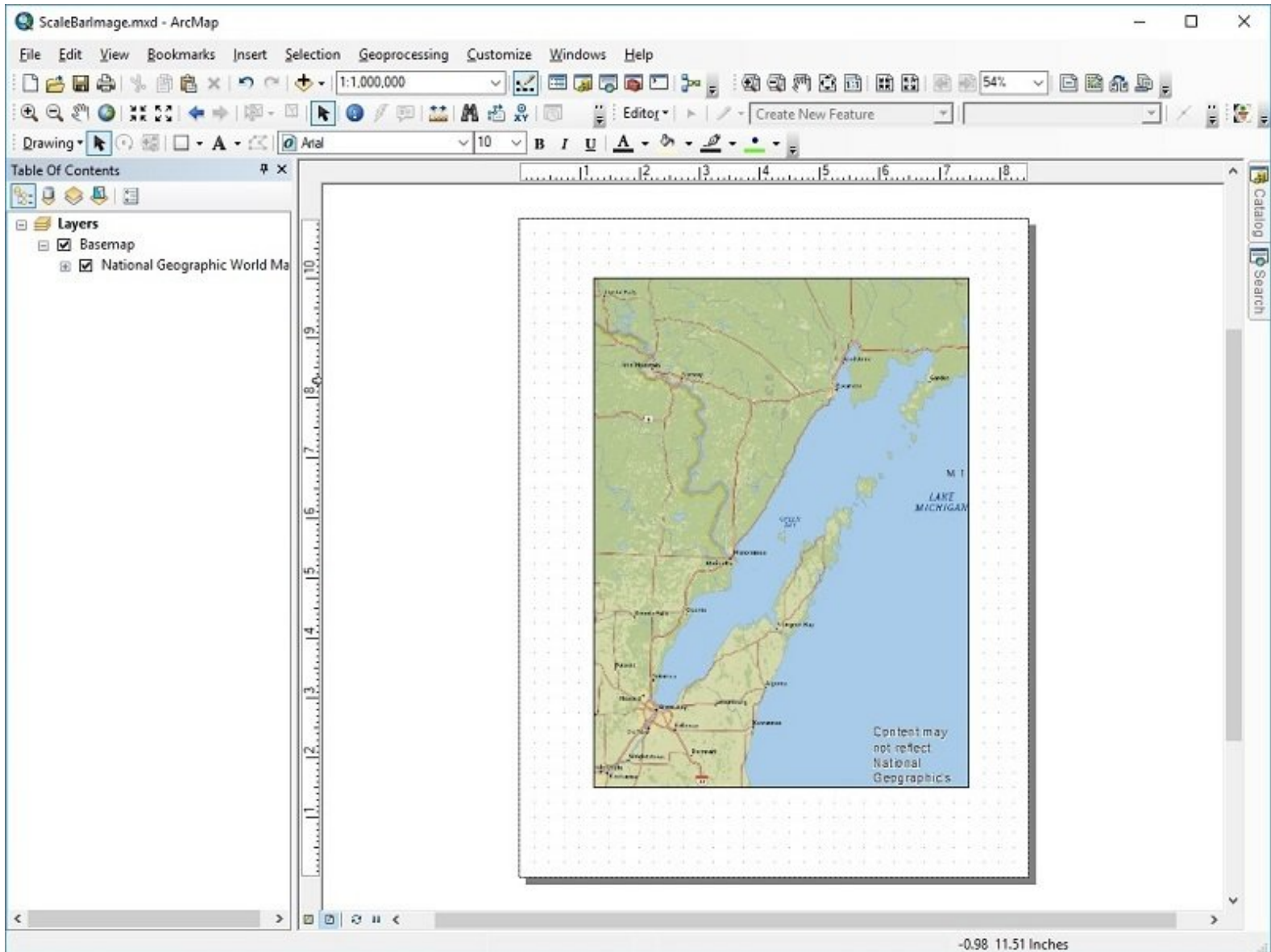


ottergeospatial

Adding a Simple Scale Bar

Information about creating a a simple scalebar

Written By: Michael Stiefvater



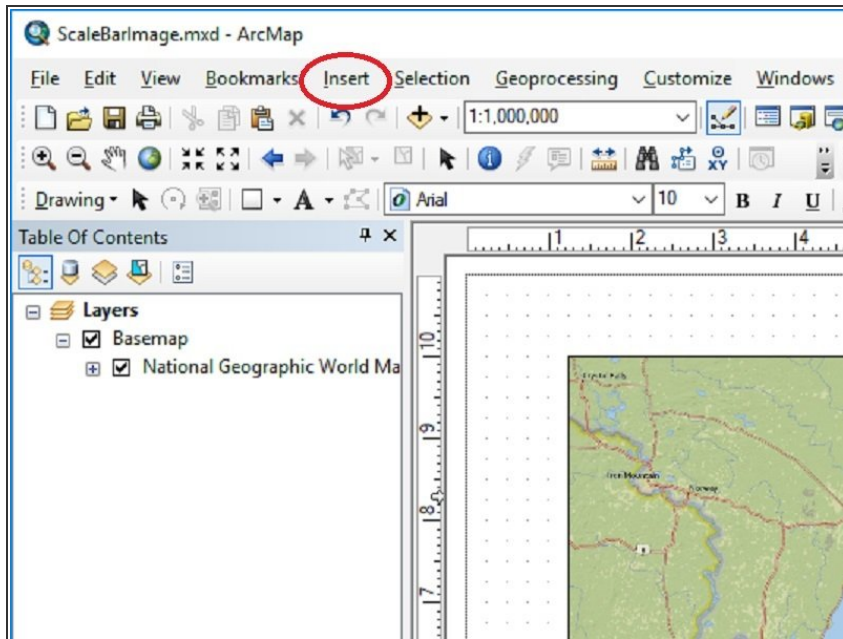
INTRODUCTION

A graphic scale bar is one of several cartographic elements that can be added to a static map to make it more user-friendly. For a scale bar to be nice-looking and informative a number of math and formatting issues need to be dealt with and ArcMap provides a "fill-in-the-blanks" utility to streamline the process.

The map's basic layout needs to be finalized before adding incidental cartographic elements like a scale bar. The software needs to know the map's paper size, page orientation, etc so it can propose a scale bar design that will be useful for reading that specific map.

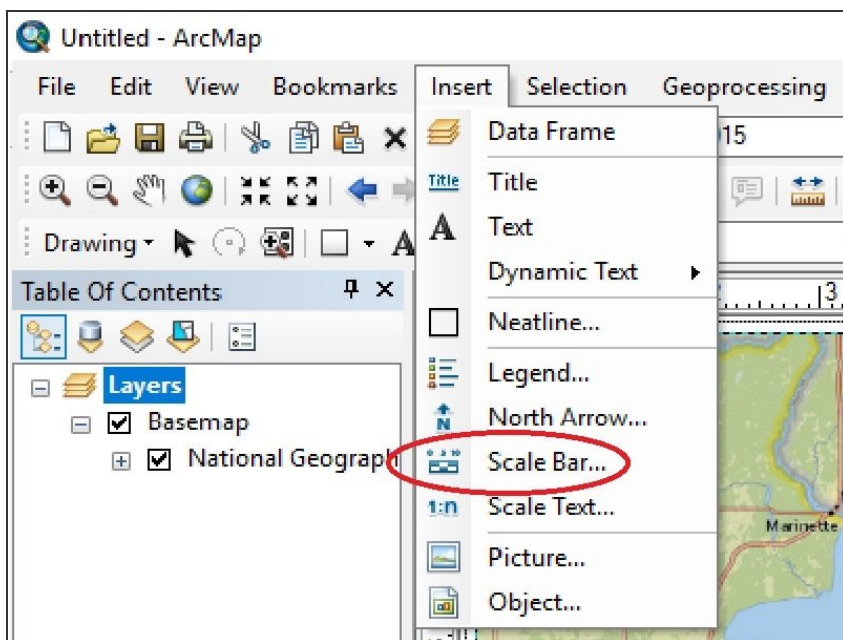
The guide lists the steps one would follow for any finalized map layout, then shows how each step is applied to an example that we've chosen. The example, shown above, is a relatively small-scale map composed to fit on a letter-size report page.

Step 1 — Select the "Insert" item located on the ArcMap main menu



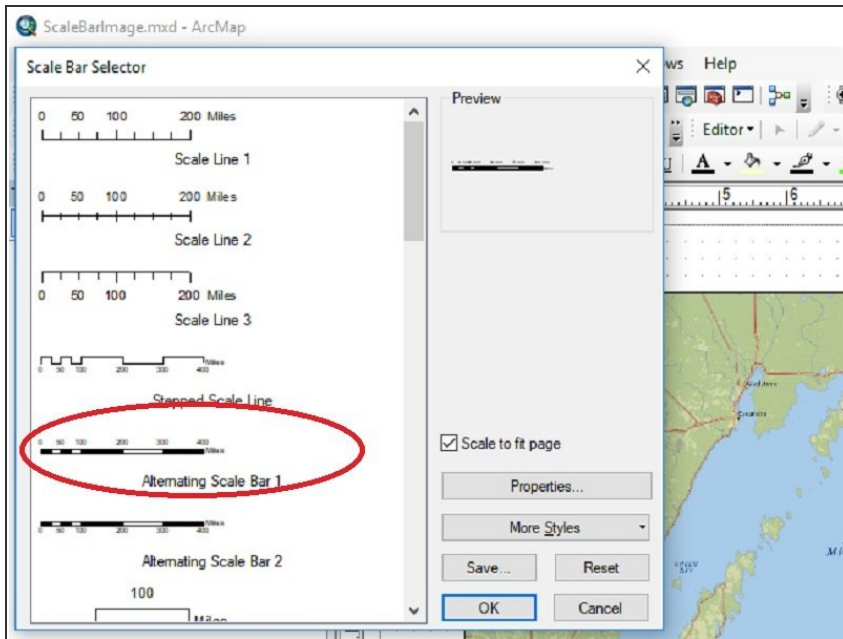
- A dropdown menu is displayed

Step 2 — Select the "Scale Bar ..." item located on the Insert dropdown menu



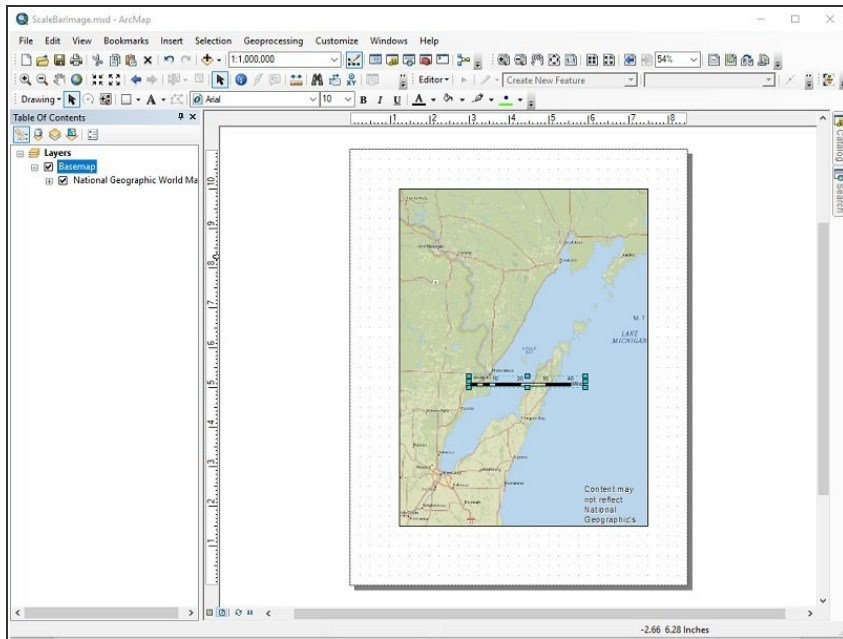
- The "Scale Bar Selector" window is displayed

Step 3 — Select one of the styles shown in the Scale Bar Selector window



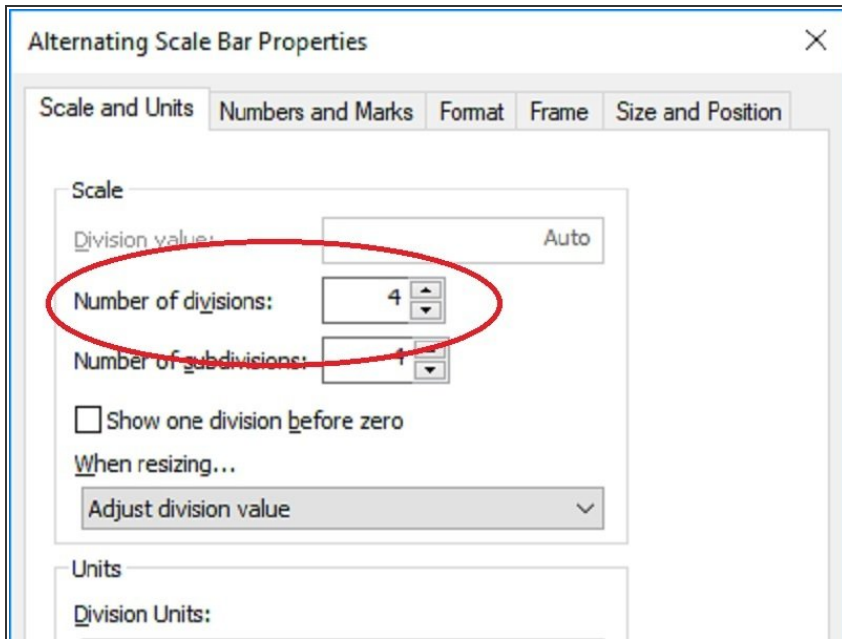
- The Scale Bar Selector window lists available scale bar styles. Assuming that the audience expects to use English units for estimating distances in the map, we prefer the style titled "Alternating Scale Bar 1" (circled in red).
- Selecting the style titled "Alternating Scale Bar 1 Metric", found about three-quarters of the way down the list, specifies a similar scale bar that uses International units for distance measurements. The needs of the map's audience dictate whether English or International units (or both) will be used.
- ArcMap combines the selected style with the map's composition properties, creates a proposed design and displays it in the center of the data frame.

Step 4 — Open the proposed scale bar for editing



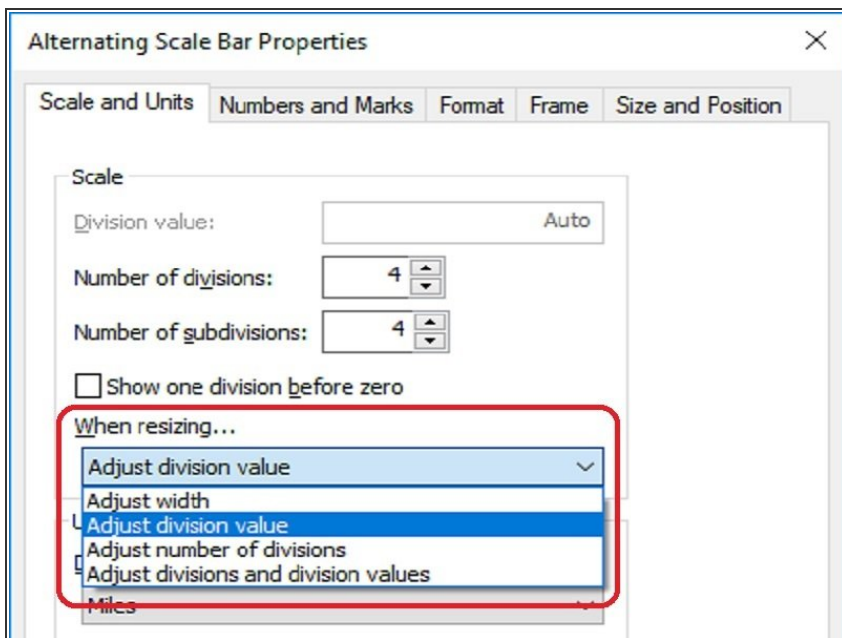
- Double-click on the scale bar graphic.
- A window titled "Alternating Scale Bar Properties" is displayed
- The point of this step may not be immediately obvious. Don't skip it even if the scale bar design proposed by ArcMap looks OK to use as-is.

Step 5 — Check/reset the "Number of divisions:" setting on the Scale and Units tab



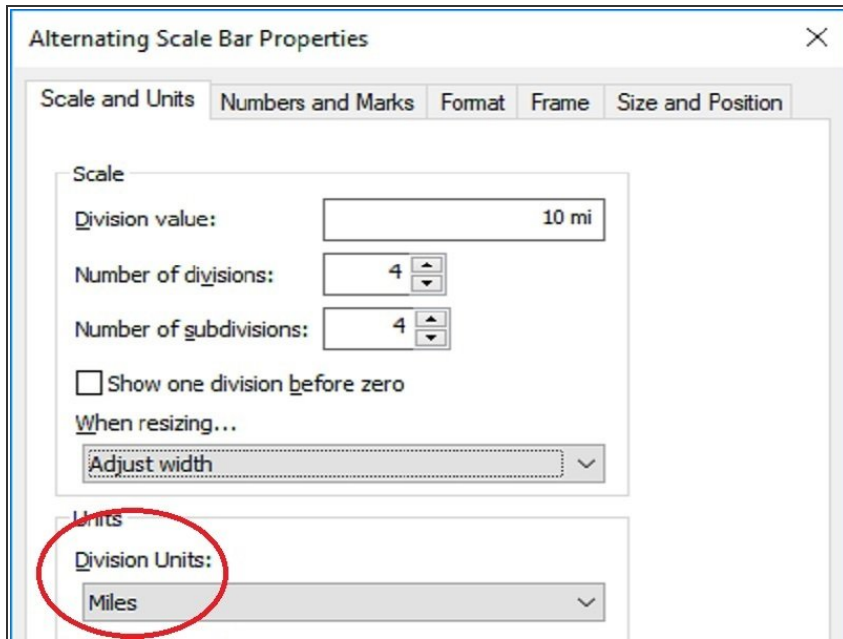
- The great majority of the time, this setting will already be at 4 which is the optimal value for later operations. This step is a reminder to check the setting and, if necessary, reset it to 4.

Step 6 — Adjust the "When resizing..." setting located on the Scale and Units tab



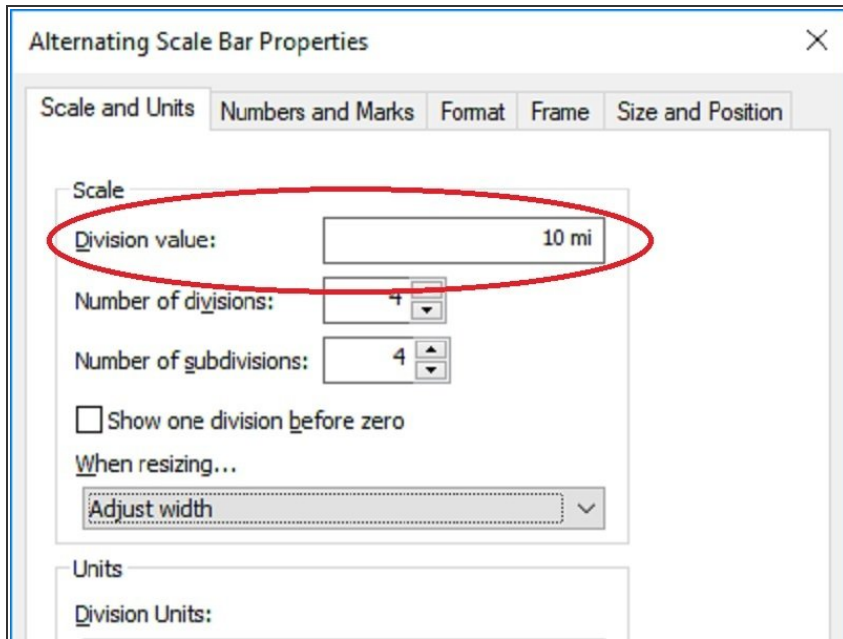
- Use the "Adjust width" setting
- **DON'T SKIP THIS STEP !!** Leaving this setting at its default (Adjust division value) sets up a chaotic scenario where intentional changes to one scale bar property trigger unwanted changes to another property.

Step 7 — Examine the "Division Units:" setting on the Scale and Units tab



- Determine if the division units setting chosen by ArcMap complies with known audience requirements. For example, the audience for a navigation chart might demand that distances be measured in nautical miles.
- Determine if the setting chosen by ArcMap complies with normal cartographic practices. For example, normal practice is to use relatively large units for measuring distances on a relatively small scale map,
- If the division units setting chosen by ArcMap meets the above criteria, continue on to the next step. If not, jump to the guide [Tweaking Scale Bar Divisions and Units](#)
- Note that ArcMap's choice of "miles" as the division units for our example, appears to meet standard practice and audience requirement criteria.

Step 8 — Examine the "Division value:" setting on the Scale and Units tab



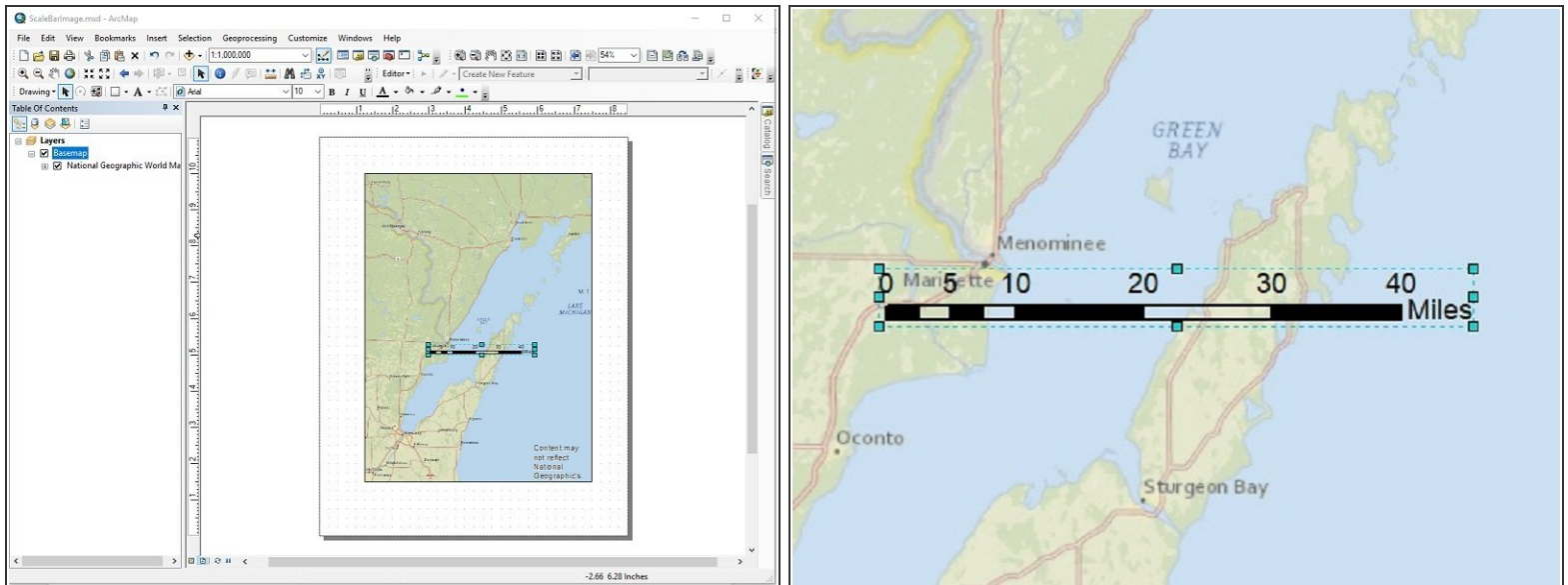
- Determine if the division value setting chosen by ArcMap lends itself to simple and intuitive distance estimates. This means a nice round number as opposed to an unwieldy fraction like "8.75 km" or an oddball whole number like "133 ft".
- If the division value setting chosen by ArcMap meets the above criteria, continue on to the next step. If not, jump to the guide titled [Tweaking Scale Bar Divisions and Units](#)
- Note that ArcMap chose "10 mi" as the division value for our example. The use of ten mile increments for estimating longer distances should give us the simplicity and intuitiveness we are after.

Step 9 — Position the scale bar In the map



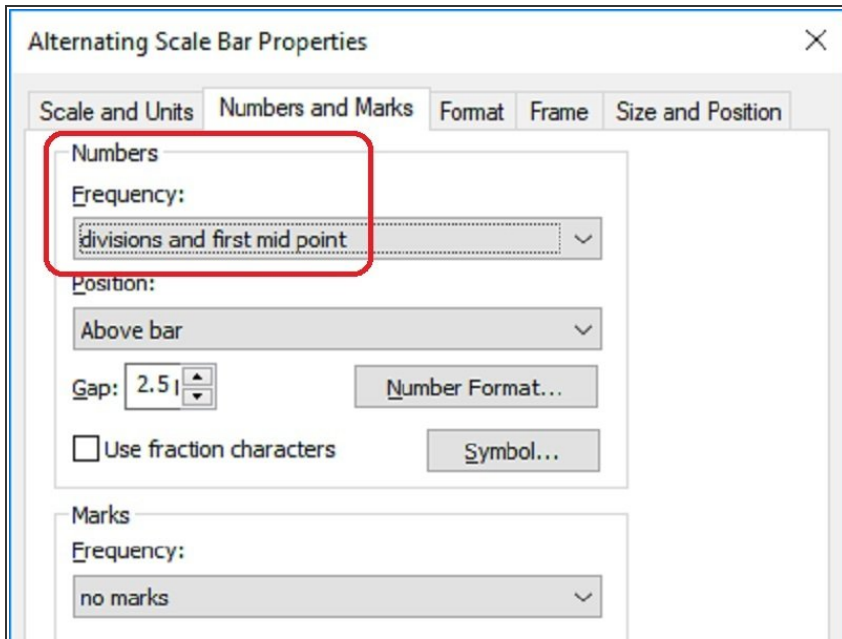
- Drag the scale bar to a corner of the map whose content is not of particular interest to the audience.
- Up to this point the scale bar has been surrounded by a green halo. This indicates that it is selected for editing in the graphics editor. Left click outside the data frame to deselect it.
- Save the map document

Step 10 — Test drive the proposed scale bar design



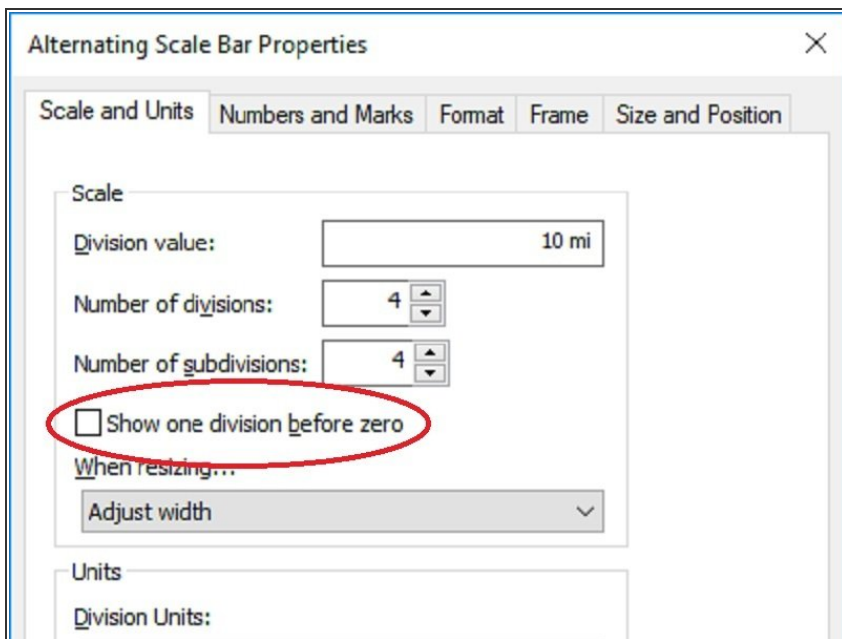
- Imagine using a dividers to transfer ground distances between the map and the scale bar. If it seems like the resulting estimates will be informative for both longer and shorter distances, continue on to the next steps. If not, jump to the guide titled [Tweaking Scale Bar Divisions and Units](#)
- The scale bar design that ArcMap came up with for our example seems like it will work well for estimating longer and shorter distances.

Step 11 — Adjust the "Numbers - Frequency:" setting on the Numbers and Marks tab



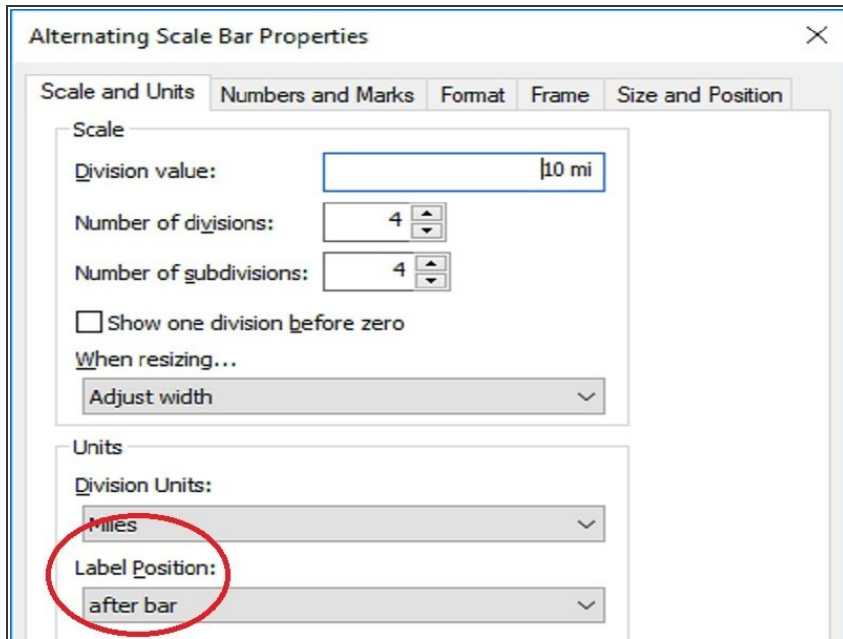
- This tweak is optional. Setting the value to "divisions" makes for a simpler and cleaner looking scale bar

Step 12 — Check/reset the "Show one division before zero" setting on the Scale and Units tab



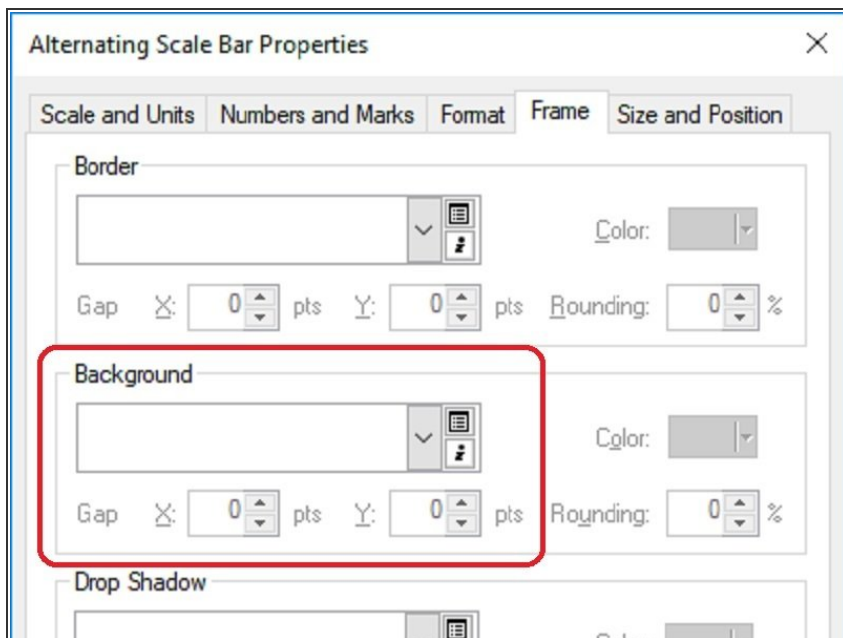
- The great majority of the time, the "Show one division before zero" box will be not be checked which makes for a simpler and cleaner looking scale bar. This step is a reminder to make sure the box is not checked.

Step 13 — Adjust the "Label Position:" setting on the Scale and Units tab



- This tweak is optional. Setting the label position to "after labels" or "below center" makes for a simpler and cleaner looking scale bar

Step 14 — Adjust the "Background" settings on the Frame tab



- Use this step to put the scale bar on a white background. It's optional but the professional touch it adds makes it worth doing.
- Set the background color to white, the horizontal gap (x) to 10 pts and the vertical gap (y) to 5 pts

That should do it. [Check out the example](#) which now includes the newly created scale bar.