

GIS Tips & Tricks

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Making Your Maps more “Mappy Maps”

A cartographer acquaintance of mine once told me that when a map is on a coffee table and no one picks it up to examine, it is just a piece of paper. So, in an effort to help others learn tricks of the trade which draw attention to your map, to follow up on the past two columns on customizing text and colors on your maps, and to continue the theme of “never accepting the defaults”, I asked two experienced map makers/cartographers to share some of the things they use to make their maps more “mappy”. When pushing the art-envelope in cartography, attention to detail can be the difference between a map that sits on the coffee table, a good map, and great one.

MAP TIP #1—USE DROPSHADOWS TO MAKE POLYGONS POP OUT OF THE PAGE

Take this simple polygon of Gates of the Arctic National Park in northern Alaska (Figure 1). This is the default line symbol and while it does delineate the feature, there is nothing special about the symbology to make a reader pick up the map. By customizing the line symbol, you achieve a look that enhances dimensionality to the area of interest rather than use the default symbology.

To make a more eye-popping boundary:

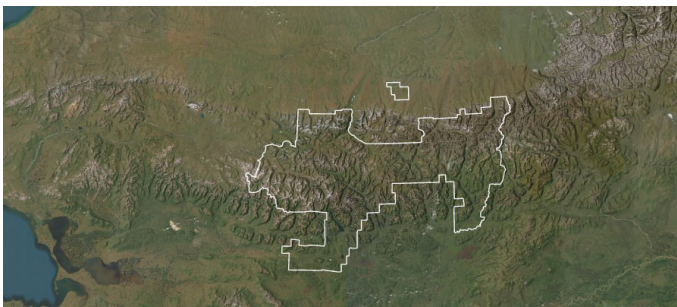


Figure 1. The default boundary polygon symbology for Gates of the Arctic National Park, Alaska.

1. Increase the stroke width and adjust it from “Solid stroke” to “Gradient stroke” (Figure 2)
2. Choose the same two colors as the “start” and “stop” scheme. With the first color selected, under Color Properties, reduce it to 100% transparency
3. Increase the offset to half of the stroke width so it renders on the outside of the polygon

The result is a drop shadow effect (Figure 3) that really makes your area of interest come to life.

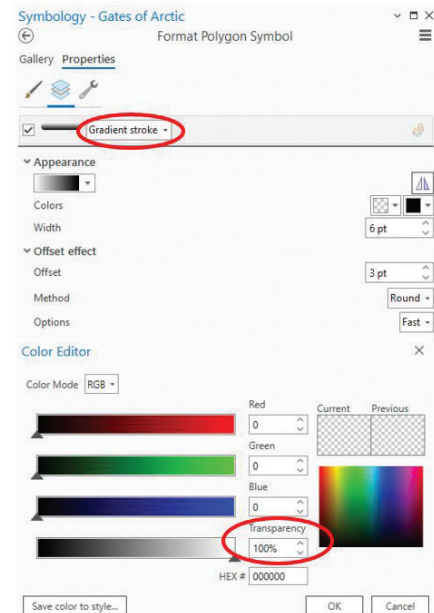


Figure 2. The Format Symbol | Properties dialog box showing the Gradient Fill properties.

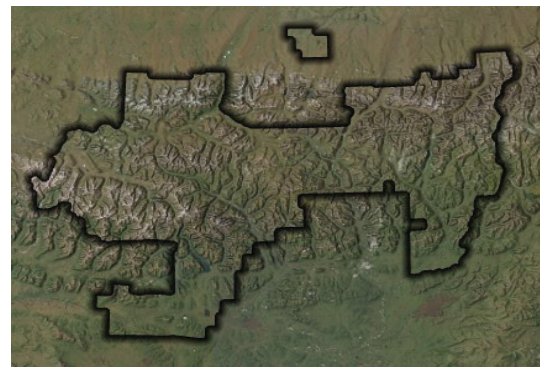


Figure 3. The Gates of the Arctic National Park boundary with customized dropdown shadow effect.

MAP TIP #2—USE ENHANCED DROP SHADOWS TO MAKE POLYGONS EVEN MORE EFFECTIVE

Take it one step further by using different blend modes! First, adjust the colors of the gradient stroke to go from 100% transparent white to white. Then add a solid fill of 40% gray.

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With the area of interest selected, under the “Feature Layer” tab on the ribbon (Figure 4), choose “Overlay” as the “Layer Blend”.

This blend mode boost contrasts by taking the lightness and darkness of the underlying layers and blending it with the top layer.

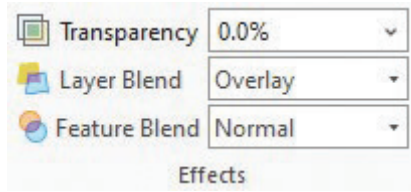


Figure 4. The “Effects” panel on the Feature Layer tab on the ribbon.

The result is a vibrant area of interest with a spotlight effect. The right blend mode is one that you think looks best, ex. Figure 5). Try playing around with different colors, sizes, offsets, and blend modes to achieve different effects!



Figure 5. Modifying the effects with a blend mode gives the area of interest a spotlight.

MAP TIP #3—MAKE WATER LOOK LIKE WATER

Have you ever wanted to mimic the way light illuminates the surface of a waterbody? By using the same process of customizing symbology with a gradient, you can render basic polygons with an inner glow hack!

1. change your fill from “Solid” to “Gradient” (Figure 6), then
2. choose two colors that

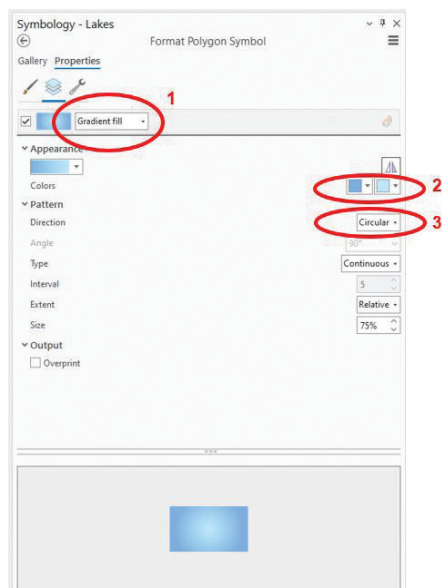


Figure 6. The Format Polygon Symbol | Properties menu showing customizations.

3. Under “Pattern”, set the Direction to “Circular”, and Type to “Continuous”.

This ensures the gradient radiates in a circular pattern from the center of the polygon, giving the impression of concentric circles of varying colors. A continuous gradient allows for smooth transitions between colors.

The result (Figure 7) is a soft illumination and radiant glow inviting us to jump in!

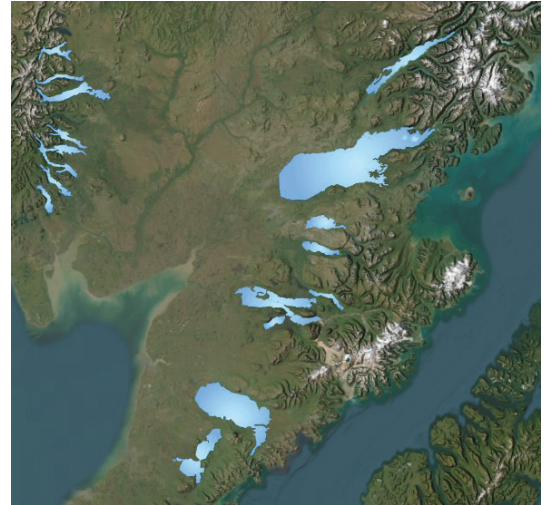


Figure 7. The results of customizing the lake polygon fill symbol with a custom gradient.

MAP TIP #4—CONTEXT IS EVERYTHING ON A LOCATOR MAP

Shira was recently asked to make a map of Guam. When making the locator map, she realized the area she was working in would not provide much context until the map was really zoomed out to a VERY small scale. Here was an opportunity to use an orthographic projection, where Earth is depicted as a globe.

The only problem is that from this angle (Figure 8), Guam is out of range. To fix this, she had to make a custom coordinate system.

1. under Map Properties, search for “The World from Space” (Figure 9) and
2. set it as the Projected Coordinate System,
3. with the coordinate system right click and select “Copy and Modify”. This will prompt the “Modify Projected Coordinate System” window (Figure 10).
4. adjust the longitude and latitude so the area of interest is repositioned to your liking. Shira chose coordinates that would set Guam to be slightly off-center.



Figure 8. The “default” orthographic project of the earth does not show Guam, the area of interest for the project.

The result is a charming overview globe that gives better reference to the geographic area at large.

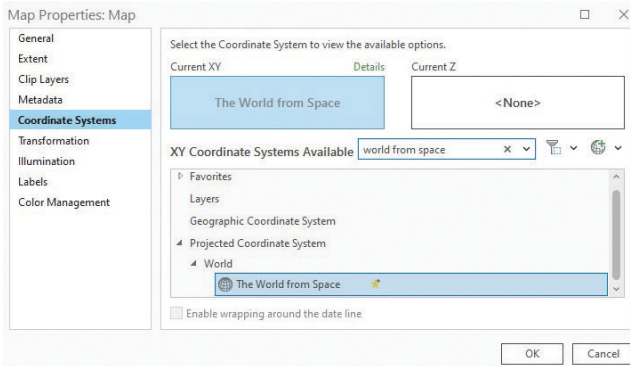


Figure 9. The Map Properties dialog is used to select “The World from Space” as the XY Coordinate System.

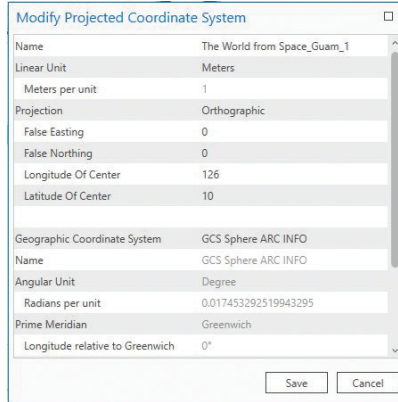


Figure 10. The Modify Project Coordinate System window is used to construct the custom coordinate system.



Figure 11. The custom coordinate system showing the area of interest (Guam) slightly off-center as determined by the cartographer.

MAP TIP #5—MONOCHROMATIC COLOR THEORY FOR DATA FEATURES

If stumped on what color to select for an individual feature layer’s symbology, try using the lighter and darker variations of the feature’s base color. This monochromatic approach can provide a variety of color selections and potentially provide more flexibility to a map’s overall color scheme.

1. Select the base color that the data will be. In Figure 12 and 14, the base color is Rose Dust (RGB value 215, 158, 158).

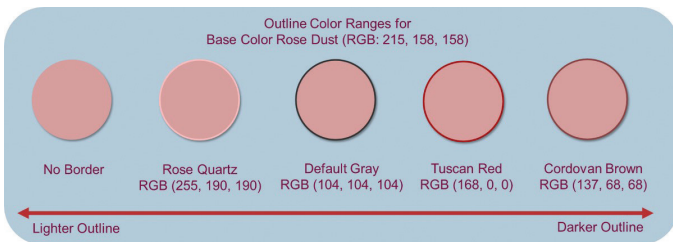


Figure 12. Outline color ranges surrounding the base color of Rose Dust (RGB value 215, 158, 158) where lighter variations of the base color stem to the left and darker variations stem to the right.

Use the color selector tool to find color variations of the base color (this will vary depending on the application being used). If your color selector tool provides default color blocks, focus in on one color range to for shading variations (Figure 13). If your color selector tool provides a color wheel/square (Figure 13), move the selection cursor up and to the left for lighter variations of the base color. Move the selection cursor down and to the right for darker variations of the color.

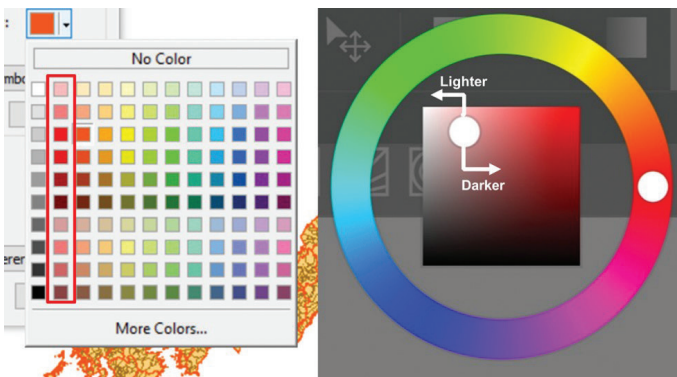


Figure 13. Left image of a color block selection tool from ArcMap Desktop. Right image of a color wheel/square tool from MediBang Paint.

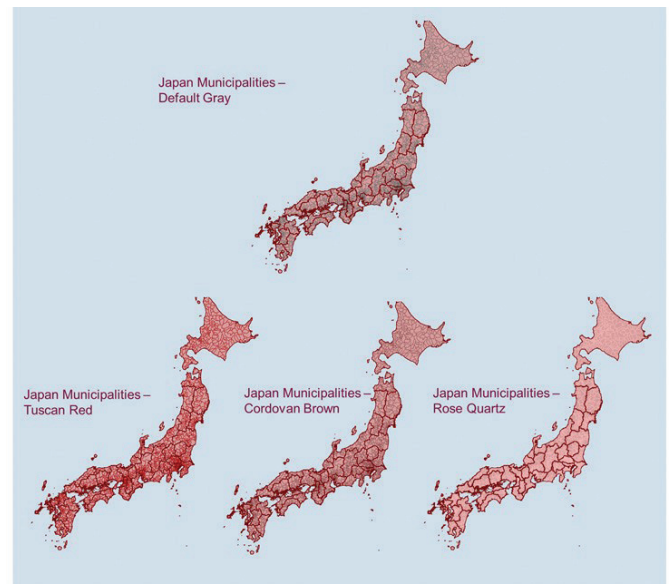


Figure 14. Maps of Japan’s municipalities in various outline colors. The top map is in default gray (RGB value 104, 104, 104); bottom left map is in Tuscan Red (RGB value 168, 0, 0); bottom center map is in Cordovan Brown (137, 68, 68); bottom right map is in Rose Quartz (255, 190, 190).

Experiment with the color variations on the data features. In Figure 14, the top map of Japan has a default gray outline surrounding the municipalities feature. Below this, the color variations stemming from the municipalities feature’s base color are applied to the outline.

This is a simple trick that can give your data visualizations an extra pop of character or double check if a visualization is accessible for an audience.

Send your questions, comments, and tips to GISTT@ASPRS.org.

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