GIS
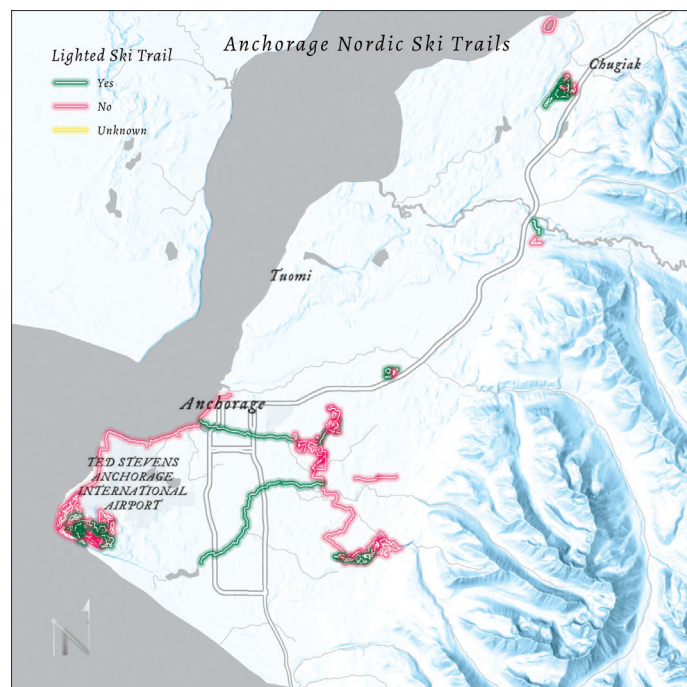# Tips & Tricks

By Shira A. Ellenson and Al Karlin, Ph.D., CMS-L, GISP

Winter-themed Mapping Tricks

As many who follow this column know, I (Al Karlin) live in sunny Tampa, Florida. This summer was an extremely hot one, and the heat extended beyond the typical summer schedule. By the time Hurricane Idalia came through the area in late August, I should have started thinking of a winter-holiday themed column. Unfortunately, with the hot weather continuing long after the kids went back to school, a winter-themed column completely skipped my mind throughout September. October finally brought daytime temperatures in the low 70's, what we might call winter here in Tampa, and I remembered my intent to write a winter-themed column. Since those of us in low-lying sunny locations, might rarely encounter mapping at high latitudes, I reached out to a colleague, Shira Ellenson, who lives in Alaska, to help with this month's Tips and Tricks column on how to make your maps look more wintery.

MAKING A SNOWY BASEMAP

Here is the Step-by-Step workflow to make this "snowy" winter-themed map:

STEP 1 — Open a new map in ArcGIS Pro.

STEP 2 — CHANGE THE BASEMAP Add the Human Geography Detail" layer from "Living Atlas"
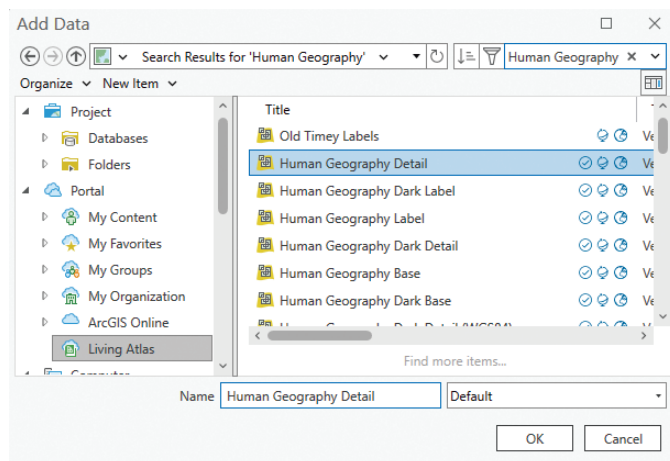

Figure 1. Using the Add Data button in ArcGIS Pro to add the Human Geography Detail layer from "Living Atlas" to the map.
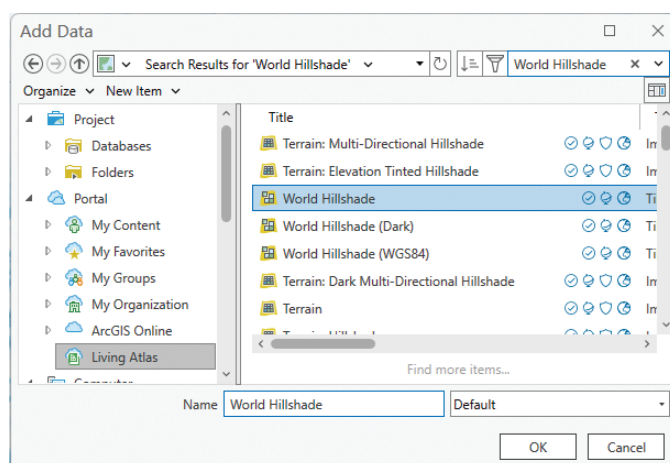

Figure 2. Using the Add Data button in ArcGIS Pro to add the World Hillshade layer from "Living Atlas" to the map.

STEP 3 — ADD "WORLD HILLSHADE Add the World Hillshade from "Living Atlas".

Place the World Hillshade on the bottom (under the Human Geography layer) of the Drawing Order in the Contents Pane.

STEP 4 — CHANGE THE MAP'S BACKGROUND COLOR TO LIGHT/POWDER BLUE Under Map Properties > General, change the background color to Power Blue, #D9ECFF (remember from previous columns how to adjust colors using the Color Editor). This will add a blue background to your map.
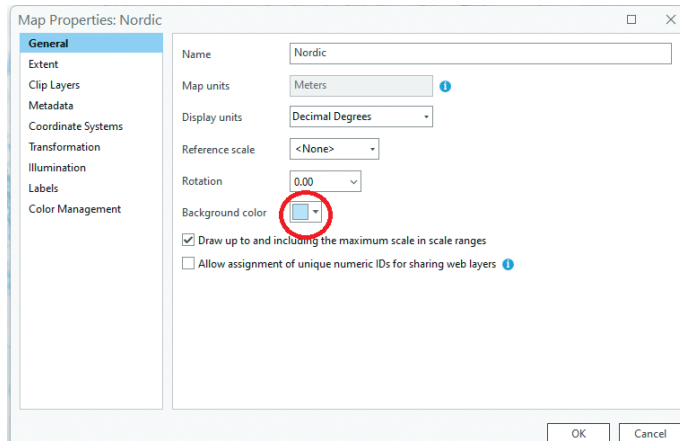

Figure 3. Changing the background map color using the Map Properties dialog box.

STEP 5 — ADJUST THE WORLD HILLSHADE LAYER With World Hillshade layer selected, adjust the Effects settings under the "Tile Layer" tab, set the Layer Blend to Luminosity and the Transparency to 0 (zero).

Map Tip #1 — This preserves the color of the background while maintaining the texture of the Hillshade. Zoom in and take a look around! You've quickly made a wonderful winter basemap!
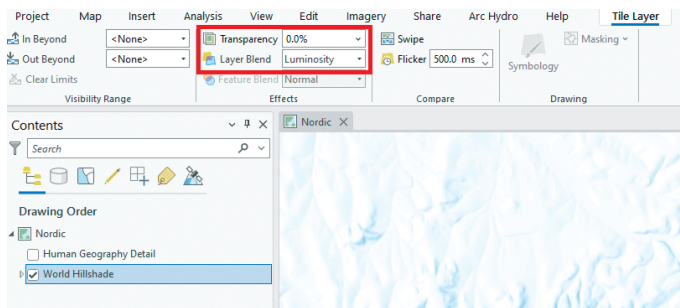

Figure 4. Adjusting the rendering of the World Hillshade under the Tile Layer tab.

STEP 6 — ADJUST THE HUMAN GEOGRAPHY DETAIL LAYER With Human Geography Detail layer selected, adjust the different blend modes until you achieve a look you like.

Map Tip #2 — In this example, we used the "Linear Burn" and increased the transparency to 60%. This softens all the roads, water bodies, and other features.
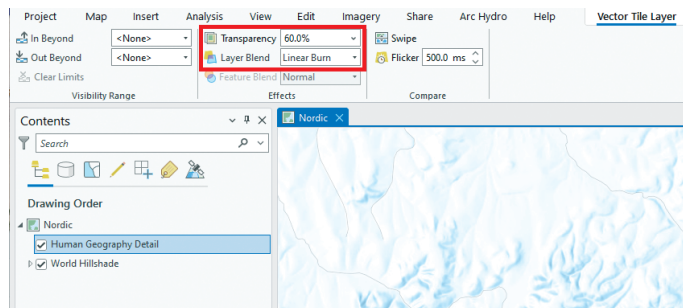

Figure 5. Adjusting the rendering of the Human Geography Detail layer under the Vector Tile Layer tab.

STEP 7 — ADD SOME SKI TRAILS TO THE MAP To go along with our winter wonderland theme, lets add some ski trails! Search for "NordicTrails" in ArcGIS Online.
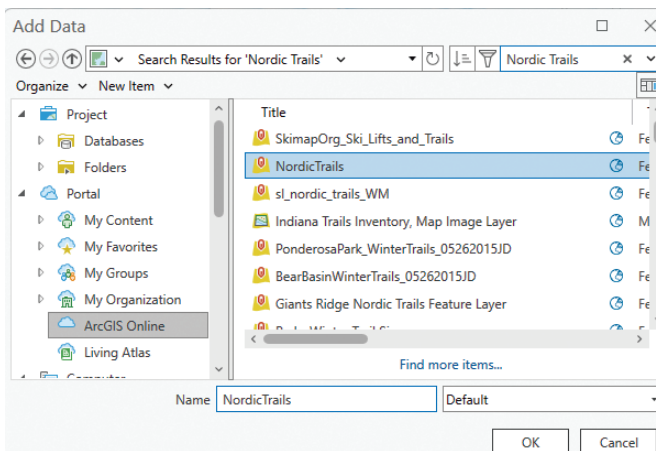

Figure 6. Using the Add Data button in ArcGIS Pro to add the Nordic Trails layer from "ArcGIS Online" to the map.

This layer is managed by the Municipality of Anchorage and shows Cross-Country Ski Trails around Anchorage, Alaska. It also includes information about grooming status, difficulty level, and which trails are lighted. With about five hours of sunlight during the peak of Alaska winter, knowing which trails have lights is super useful for night skiing!

NOTE: IF you are working through this map as a tutorial, because we're working with data in Anchorage, AK, we changed the map projection to a local coordinate system, "NAD 1983 StatePlane Alaska 4 FIPS 5004 (US Feet)".

STEP 8 — ADJUST THE SYMBOLOGY OF THE TRAILS Change the primary symbology to "Unique Values" by "Lighted_Trail". We can now see which trails are lighted and which are not.
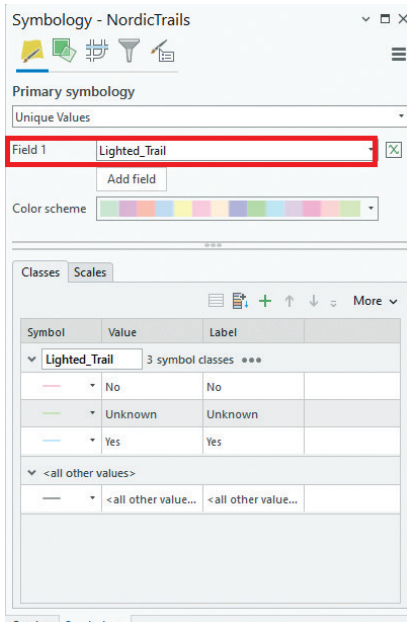
Figure 7. Changing the symbology of the Nordic Trails to "Unique Values" and selecting "Lighted_Trail" as the value.

STEP 9 — ADJUST THE SYMBOLOGY FOR THE SELECTED TRAILS For the lighted trails ("Yes"), lets dig into the symbology a bit deeper.

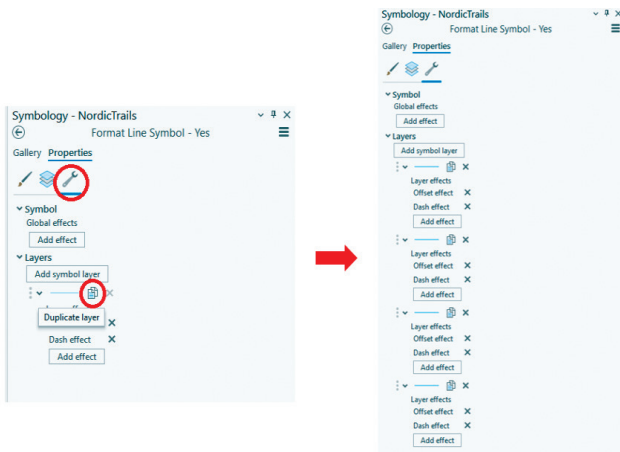***Map Tip #3*** — Under Properties > Structure, duplicate the layer three times.

Figure 8. Making multiple/duplicate copies of a feature.

Back under LayerTab, select each copy of the layer and adjust each as:

- Layer 1 – Solid Stroke | Width = 0.5 | Color to White

- Layer 2 - Solid stroke | Width = 2.5 | Color to # 00734C | Transparency = 60%

- Layer 3 - Solid stroke | Width = 4.0 | Color to # 00734C | Transparency = 85%

- Layer 4 - Solid stroke | Width = 6.0 | Color to # 00734C | Transparency to 85%, as

Map Tip #4 — By stacking increasing stroke widths and transparencies, we've hacked a forest green lighted feel to the lighted loops!

Repeat this same process for other trails, choosing colors that look good to you! I went with a Candy Red (#FF6685) for the unlighted trails, and a gold (#FFE44A) for the unknown trails.
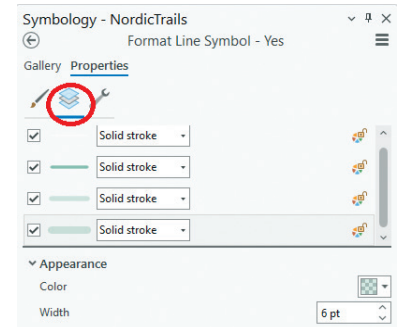

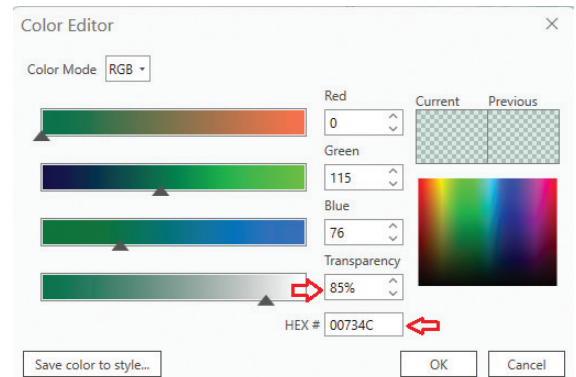Figure 9. Stacking the multiple/duplicate features.

Figure 10. Adjusting the color and transparency of each stacked feature.

STEP 10 — ADJUST THE FONT The map is looking very wintery, but the font doesn't really match the theme here.

Map Tip #5 — Search Living Atlas for "Old Timey Labels". To tone down the labels, I increased the transparency to 30%.
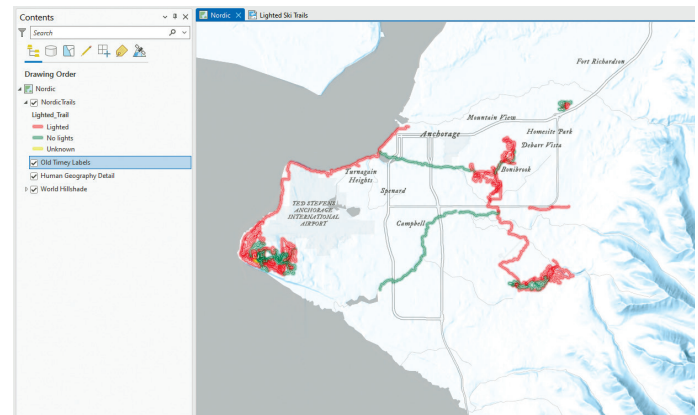

Figure 11. Final map with "Old Timey Labels" font replacing the default labels.

With nearly 40 miles of trails, browsing moose, and views of Denali, Kincaid is one of my favorite places to go skiing!

STEP 10 — (OPTIONAL, BUT FUN) Use Adobe Illustrator to put a Candy cane border around the map and add a cute graphic to make a holiday-themed winter map.
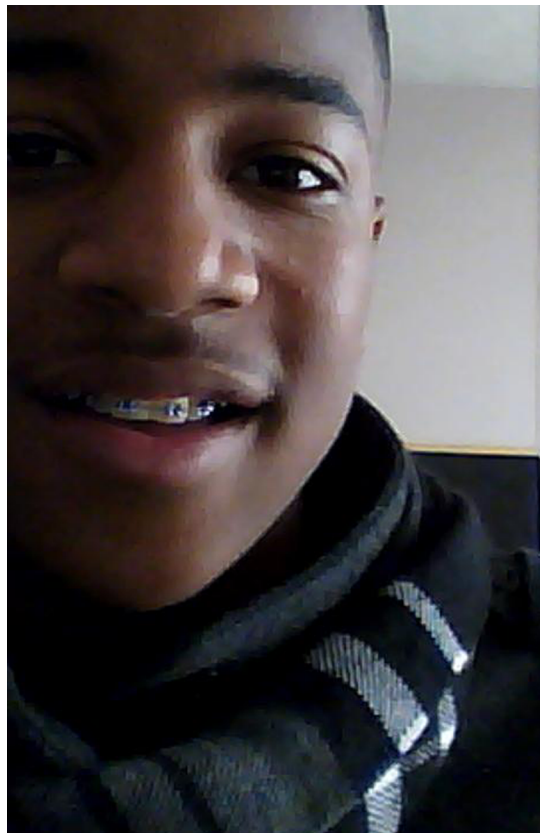
The winter-themed map can be taken another step to make a winter holiday-themed map, by taking the map into Adobe Illustrator (or another graphic editor) and adding holiday-themed decorations.

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

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Figure 12. Winter holiday-themed "Lighted Ski Trails" Map. Note: The cartoon moose is the creation of YoLani Martin, a frequent contributor to this column.