

**Map: spatial representation of the environment  
presented graphically**

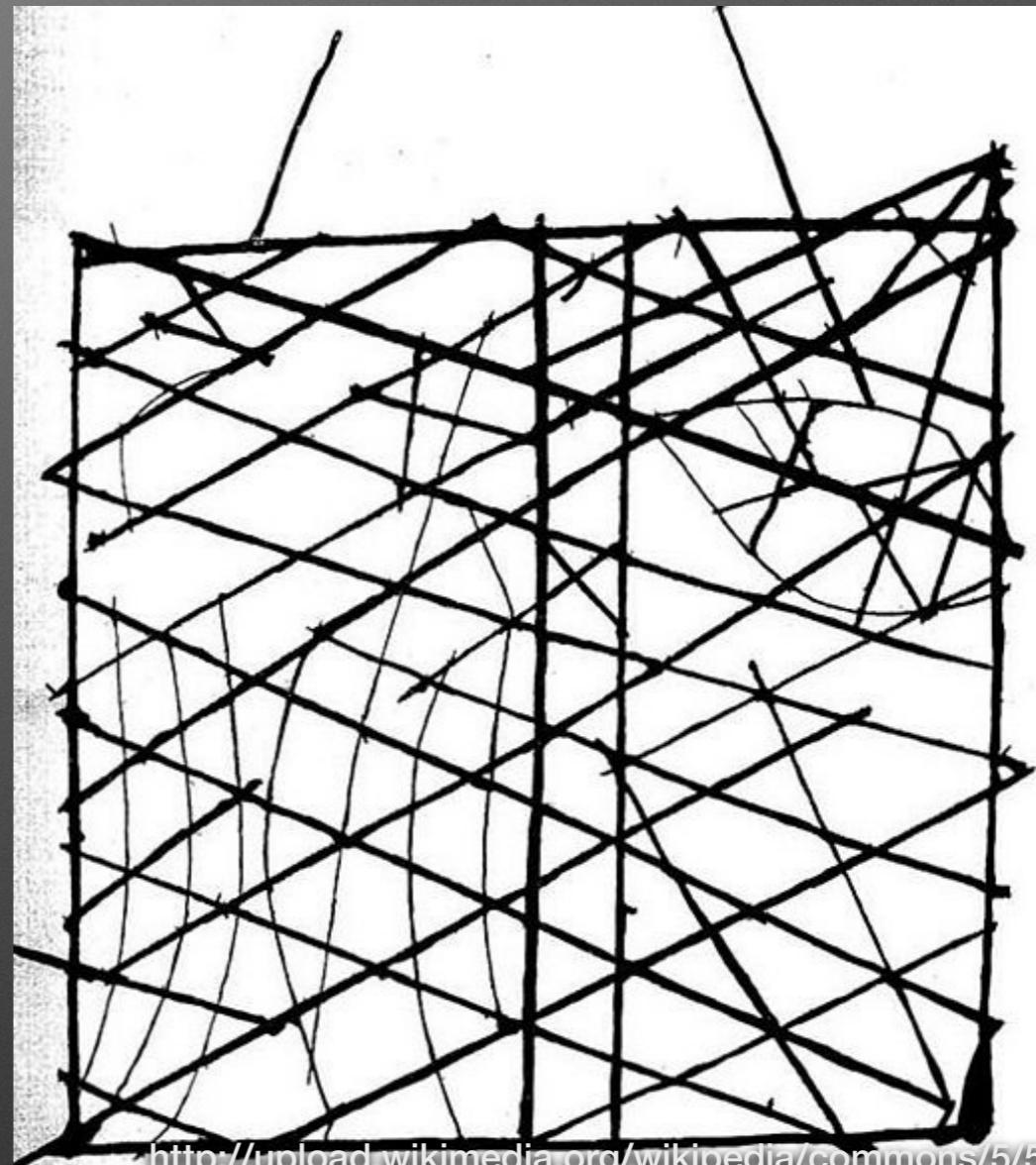
**Representation: portrays the environment, a model**

**- Kimerling 2009**

# Why map things?



<http://en.wikipedia.org/wiki/File:Babylonianmaps.JPG>



[http://upload.wikimedia.org/wikipedia/commons/5/5f/Polynesian\\_navigation\\_device\\_showing\\_directions\\_of\\_winds%2C\\_waves\\_and\\_islands.jpg](http://upload.wikimedia.org/wikipedia/commons/5/5f/Polynesian_navigation_device_showing_directions_of_winds%2C_waves_and_islands.jpg)

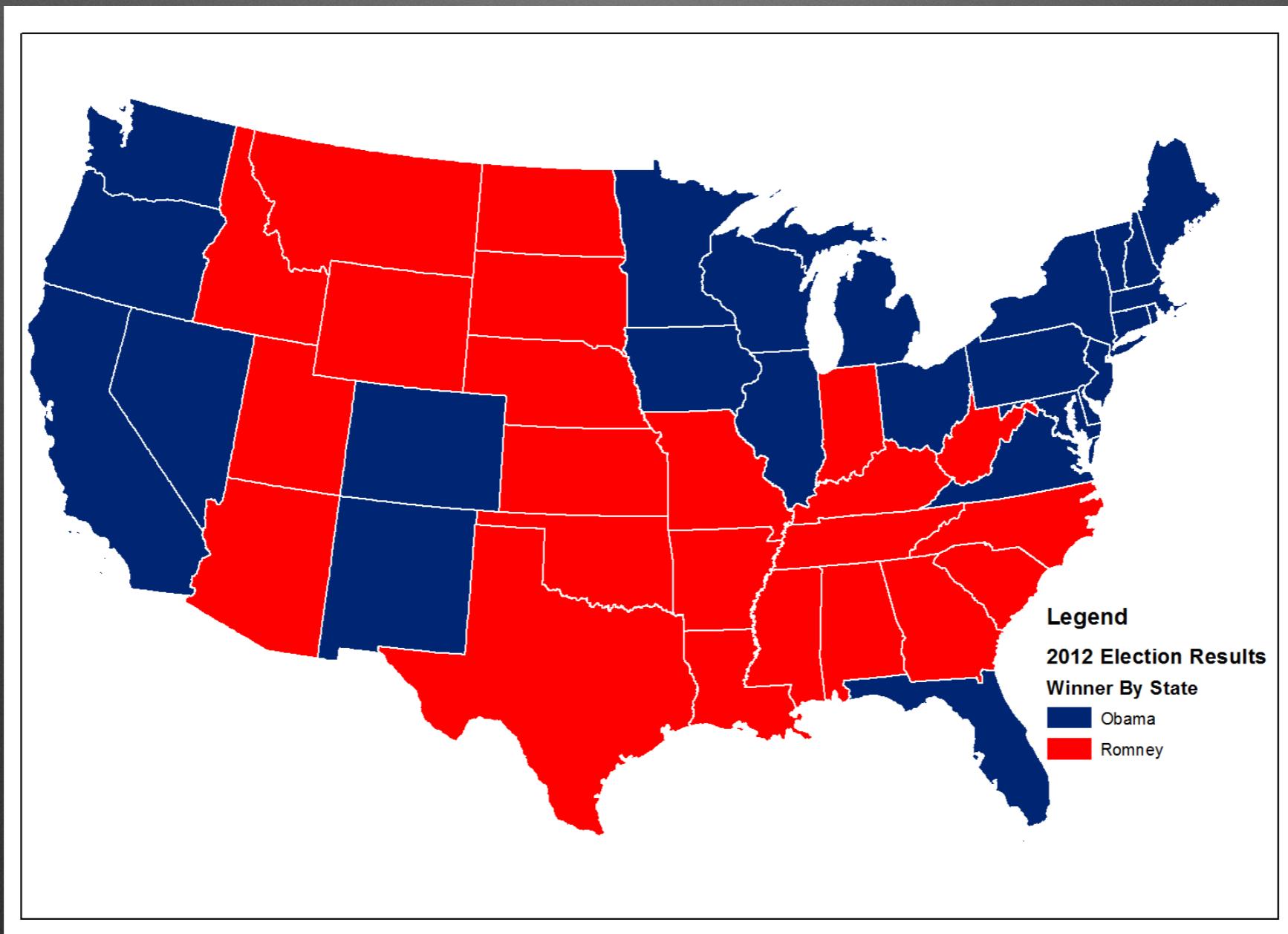


# Reference Map

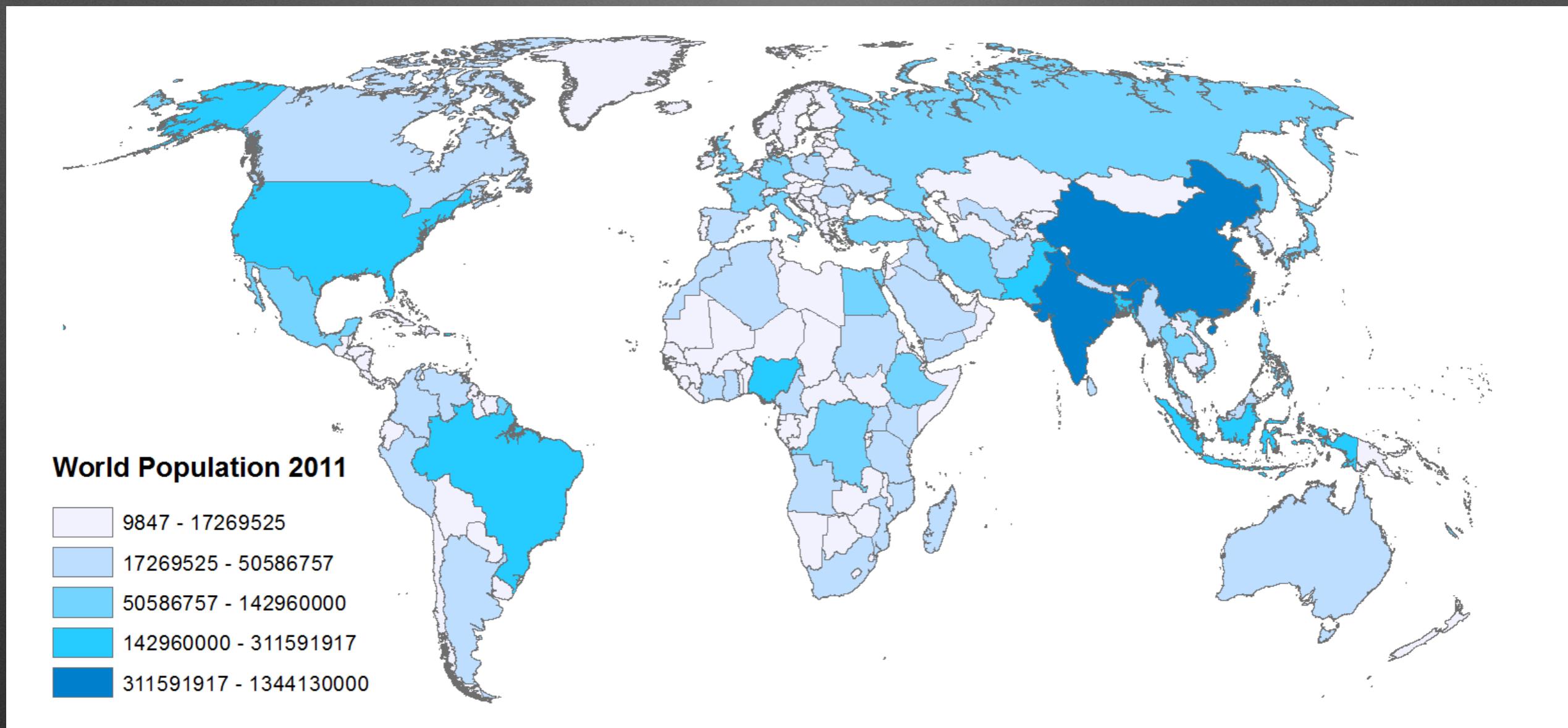
- Numerous features
- No specific information being shown

# Theematic Map

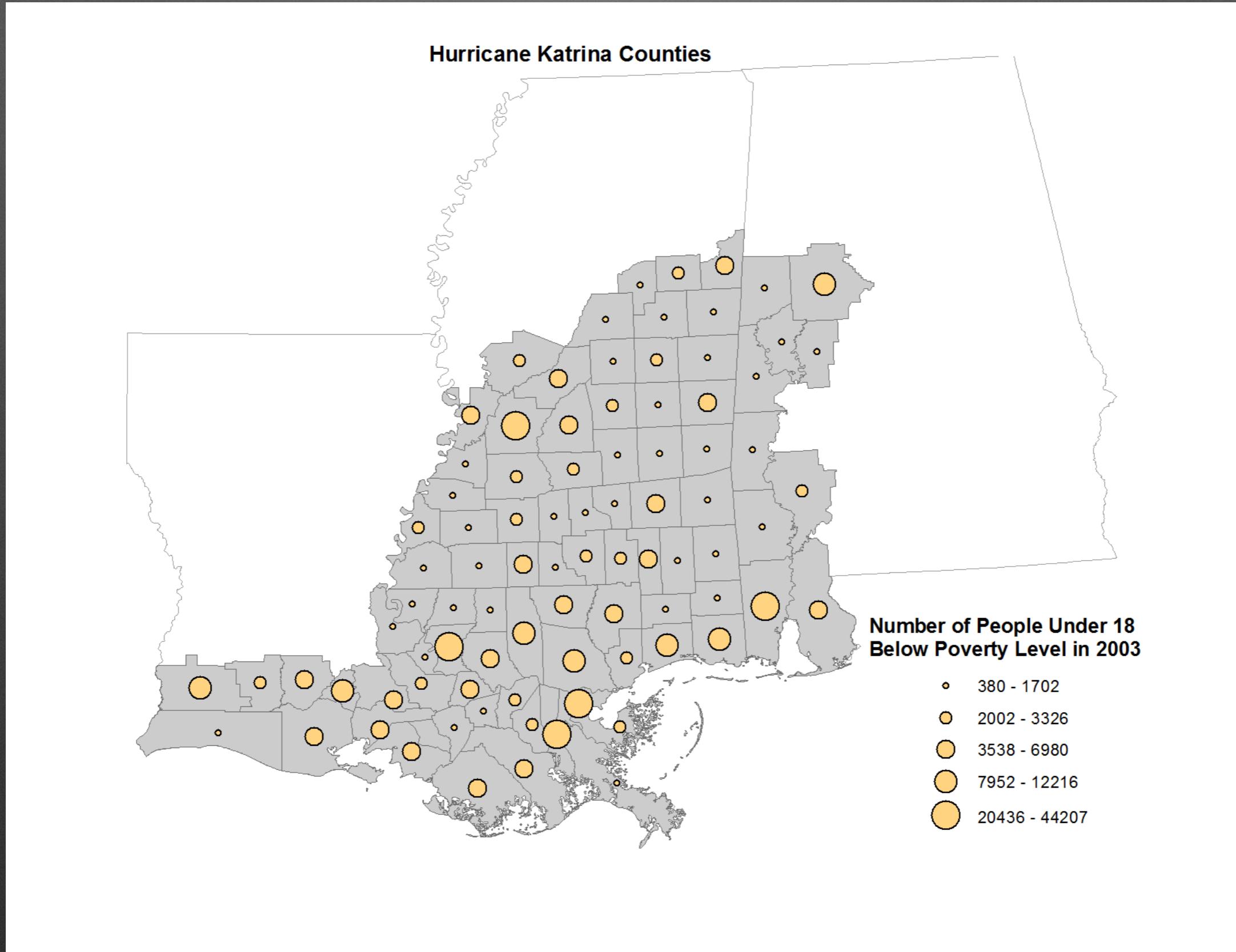
- Distributions of a single attribute
- Relationships among several attributes



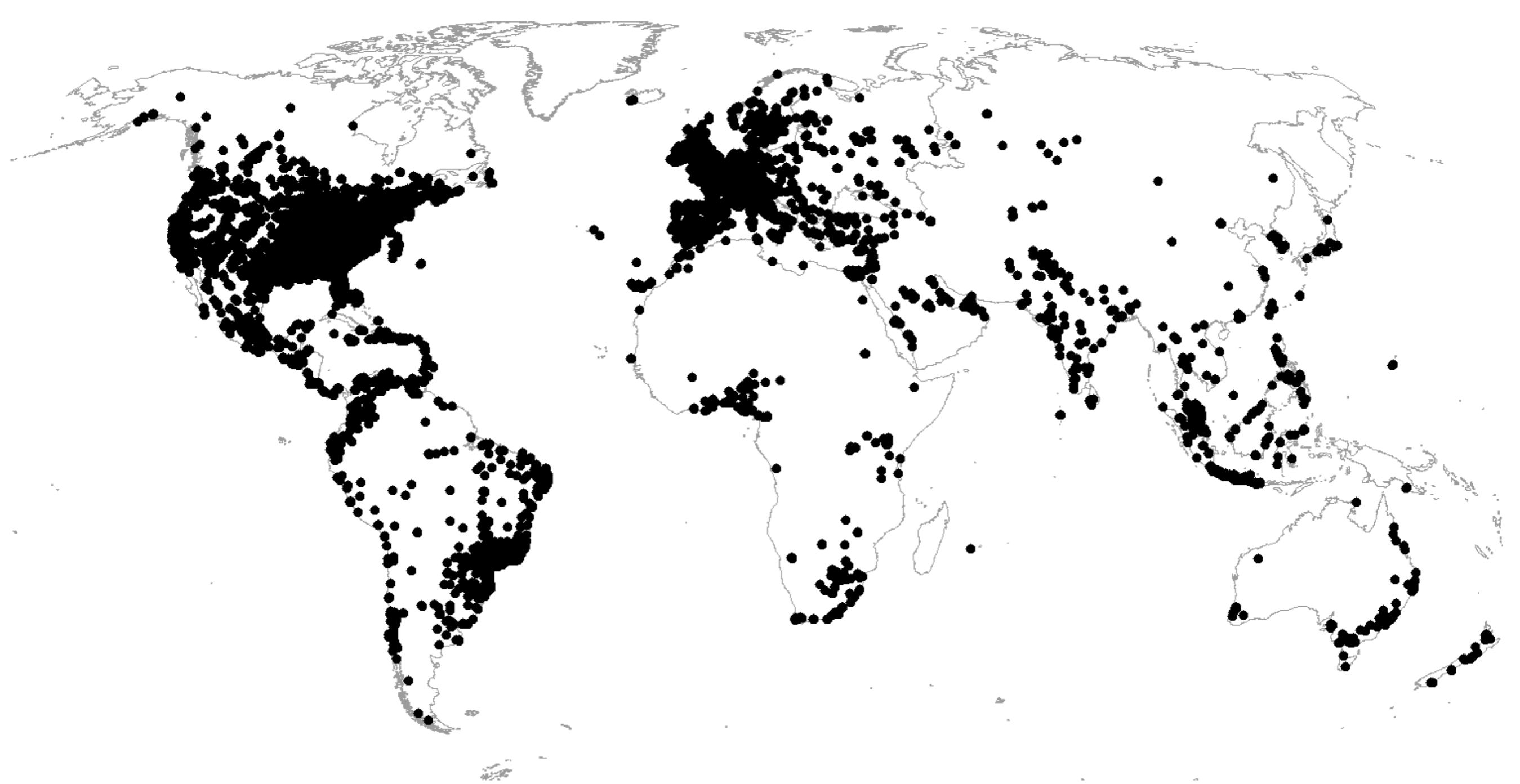
# Choropleth Map



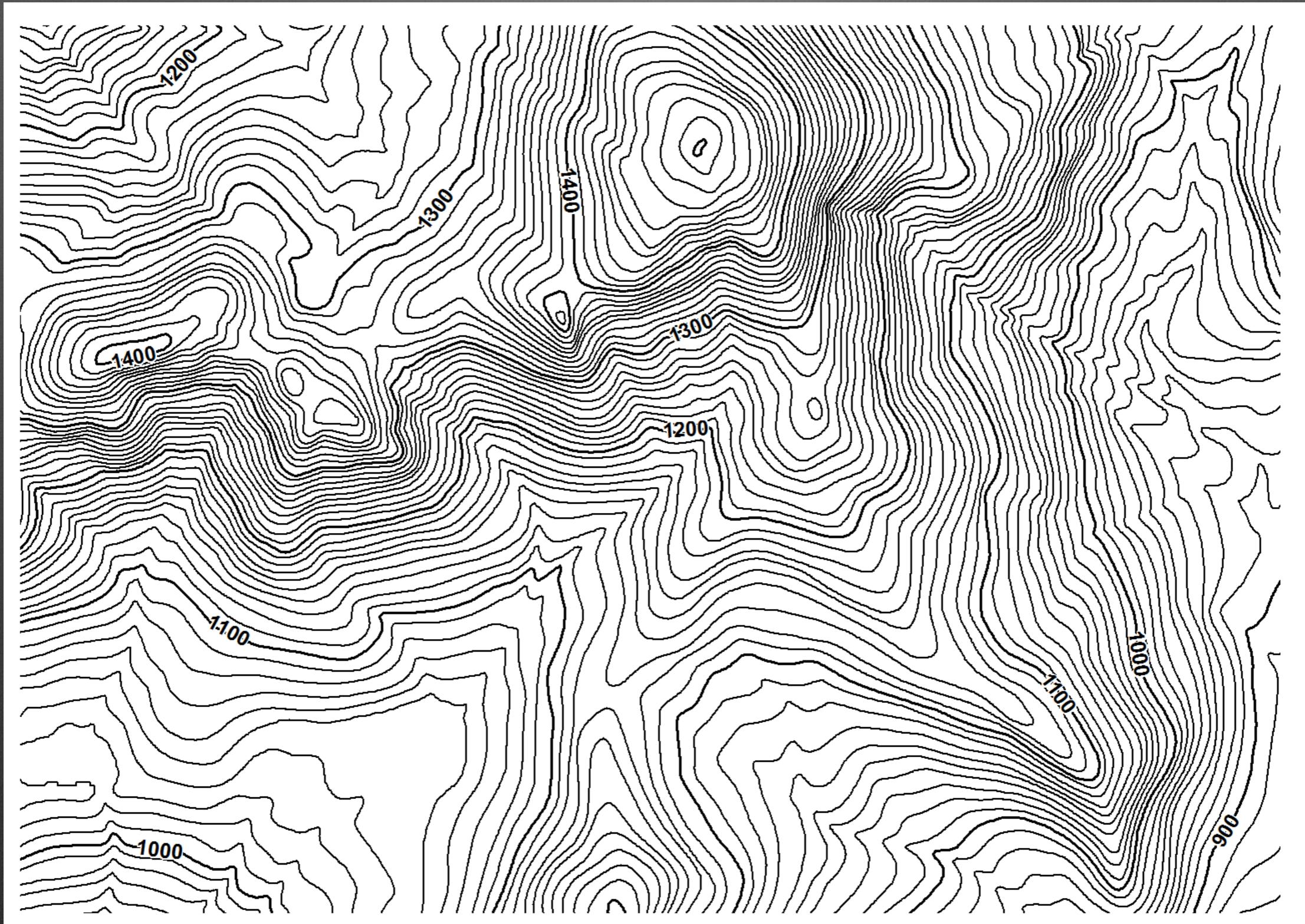
# Proportional Symbol Map



# Dot Density Map



# Isarithmic Map



# Thematic Map Hands On – ArcGIS Pro

Please do not do these steps until told to do so by  
the instructor (i.e. no skipping ahead)

- Download Week 2 Hands On from My Courses
- Open Themes.ppkx and you should get ArcGIS Pro open
- Login in through enterprise login and type ritarcgis as your domain
- Then use your sis login

Project Map Insert Analysis View Edit Imagery Share Planet Imagery Appearance Labeling Data

In Beyond  
Out Beyond  
Clear Limits  
Visibility Range

All ▾

Symbolize your layer using one symbol

Single Symbol Draw using single symbol.

Symbolize your layer by category

Unique Values Draw categories using unique values of one or multiple fields.

Symbolize your layer by quantity

Graduated Colors Draw quantities using graduated colors.

Graduated Symbols Draw quantities using graduated symbols.

Unclassed Colors Draw quantities using an unclassed color gradient.

Proportional Symbols Draw quantities using proportional symbols.

Dot Density Draw quantities using dot density.

Symbolize your layer using symbol attributes

Dictionary Draw features using a symbol dictionary and rule set.

Contents Search Drawing Order

Map  
 World Dark Gray Reference  
 Country  
 World Dark Gray Canvas Base

0.0 % Masking Display Filters Field Face Culling Lighting Faces

Symbology - Country

Primary symbology

Graduated Colors

Field

Normalization

Method

Classes

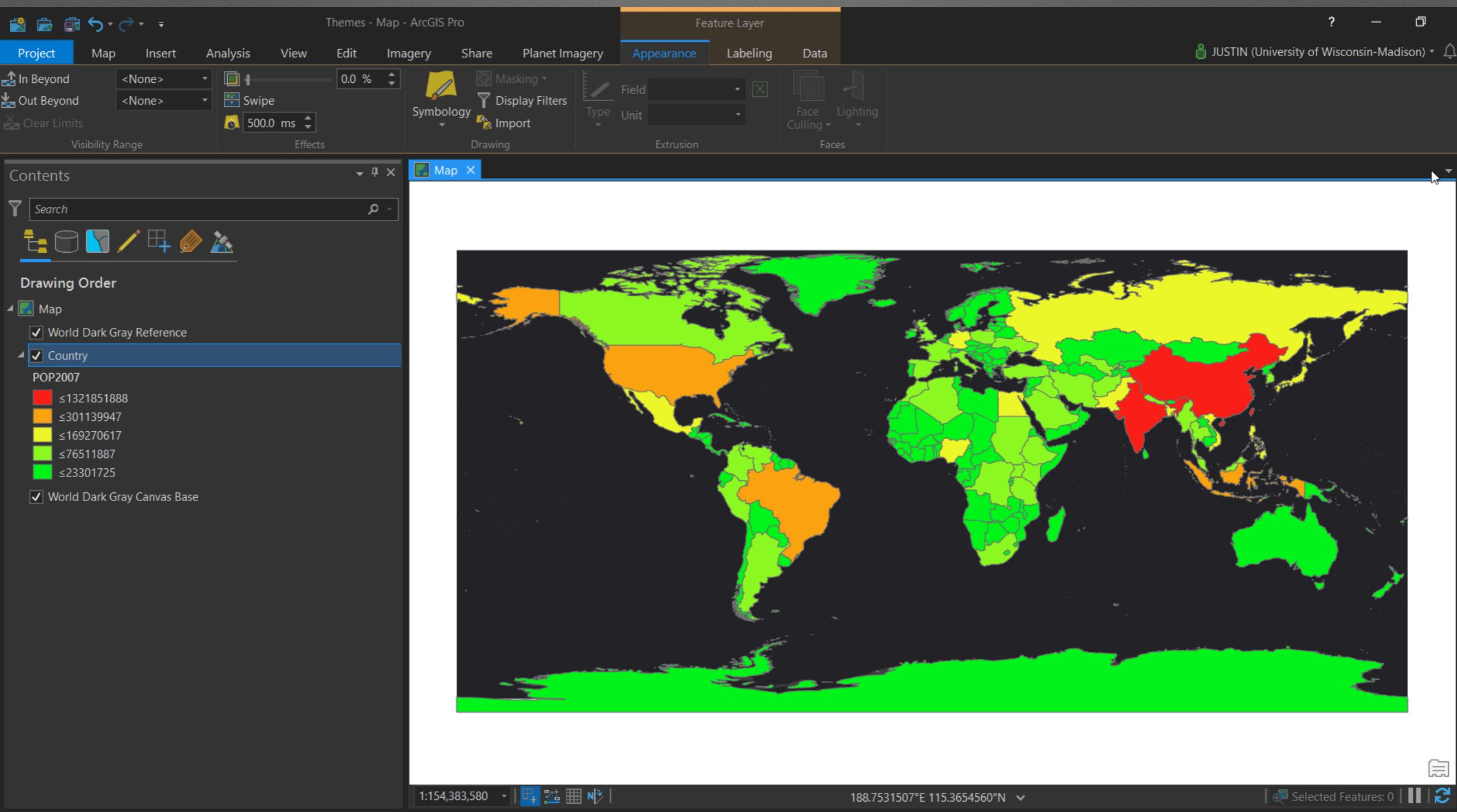
Color scheme 

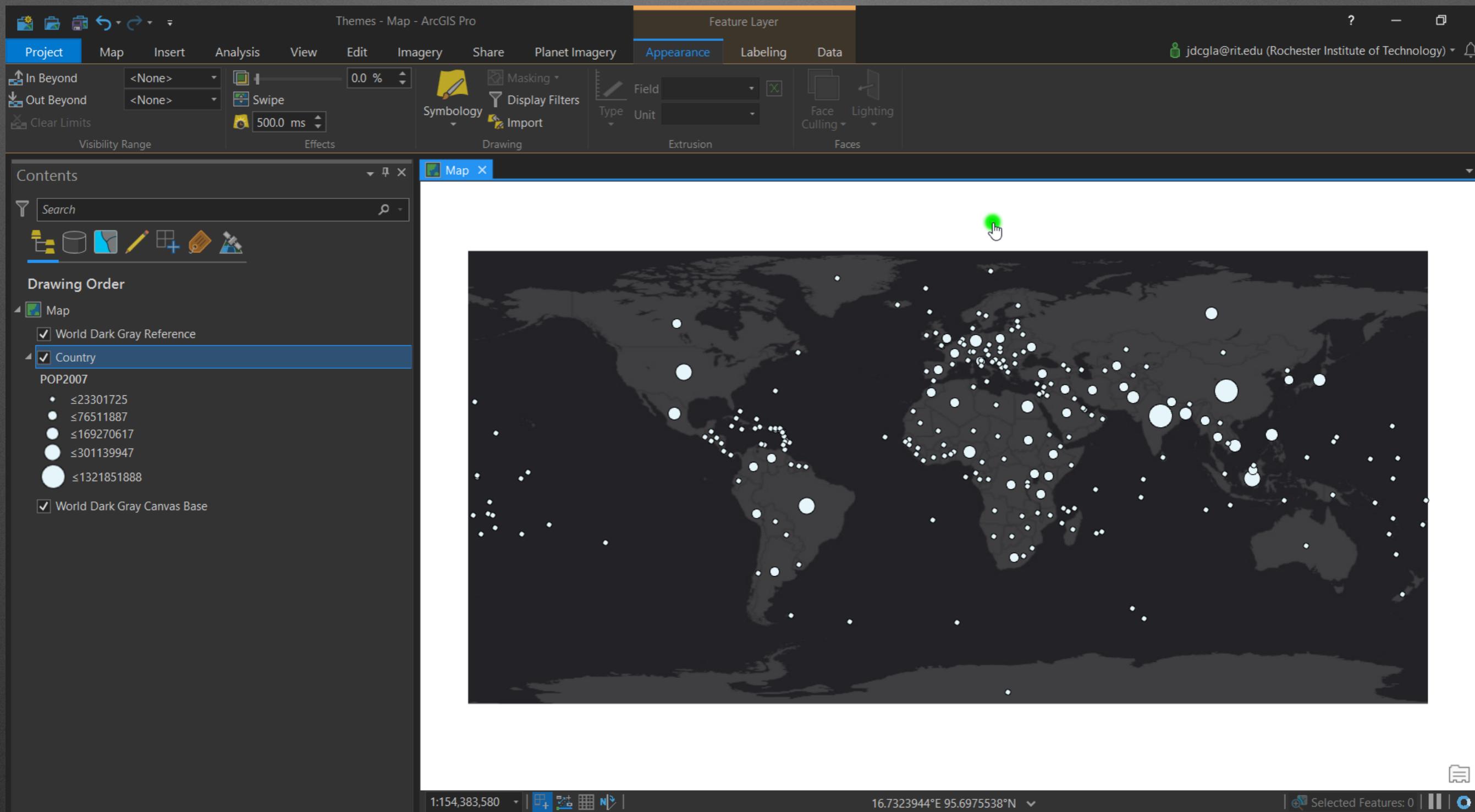
Classes Histogram Scales More

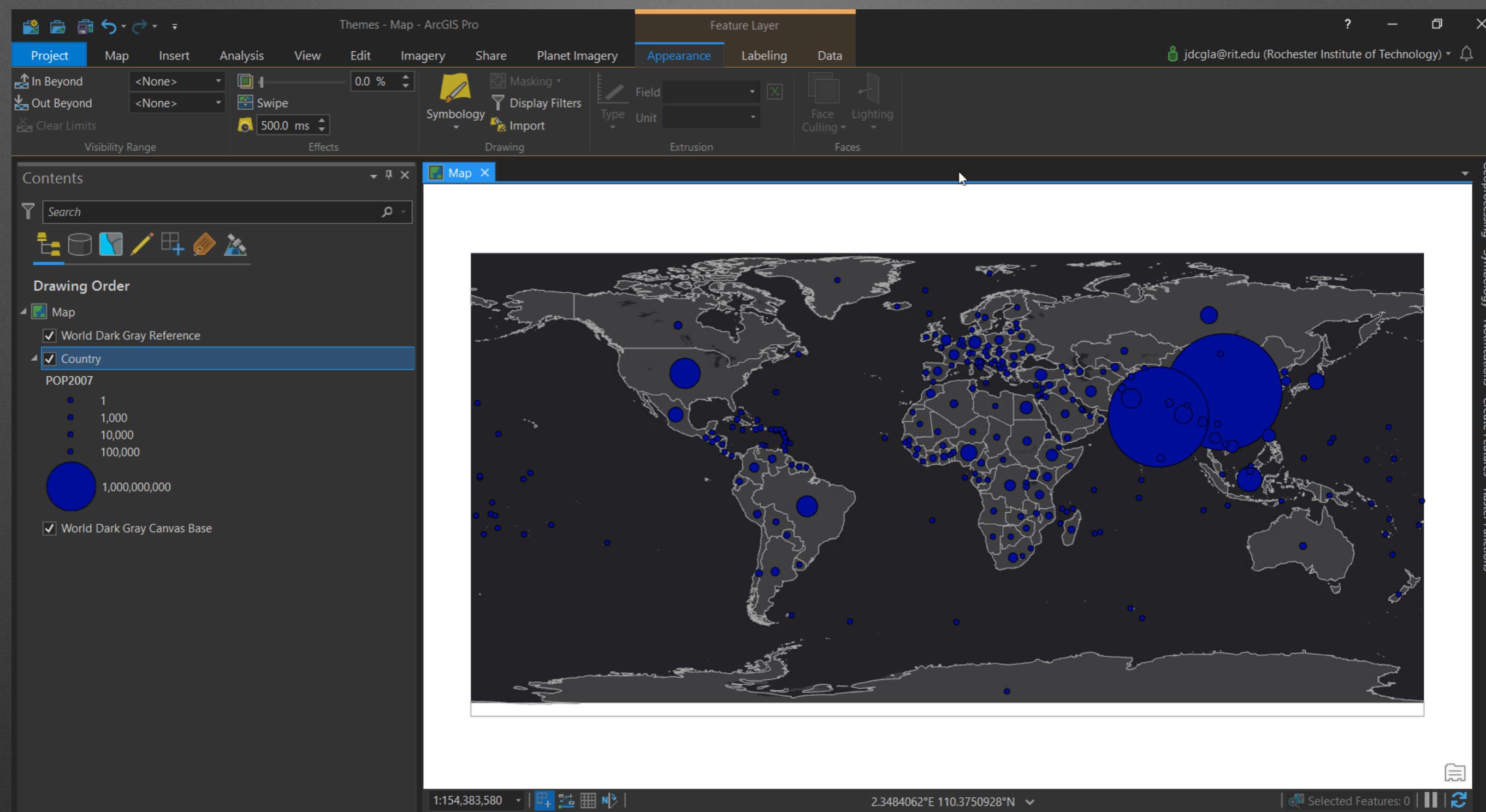
Symbol	Upper value	Label
<input type="text" value="white"/>	$\leq 48.0$	$\leq 48$
<input type="text" value="light blue"/>	$\leq 98.0$	$\leq 98$
<input type="text" value="medium blue"/>	$\leq 148.0$	$\leq 148$
<input type="text" value="dark blue"/>	$\leq 198.0$	$\leq 198$
<input type="text" value="dark blue"/>	$\leq 248.0$	$\leq 248$

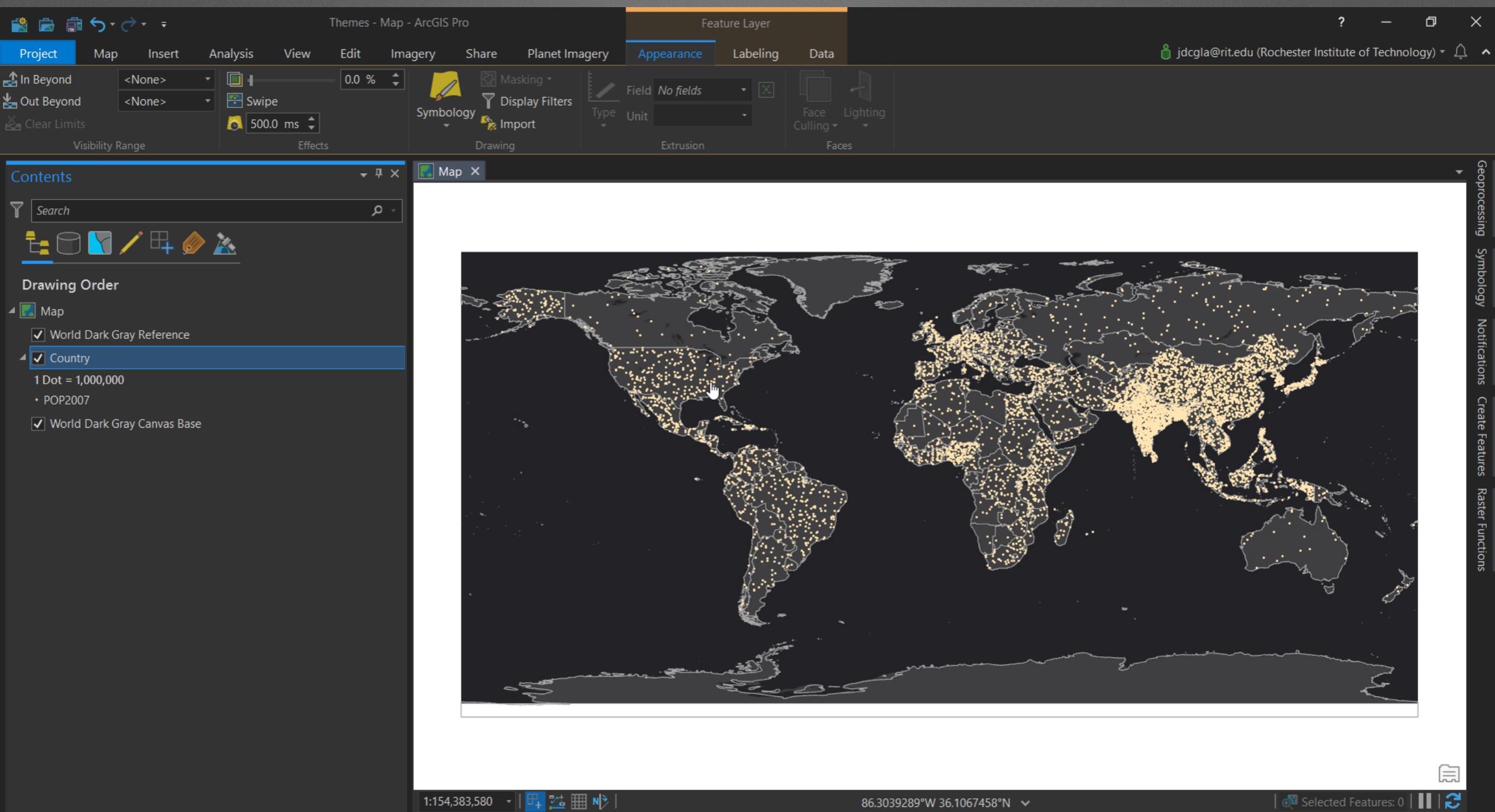


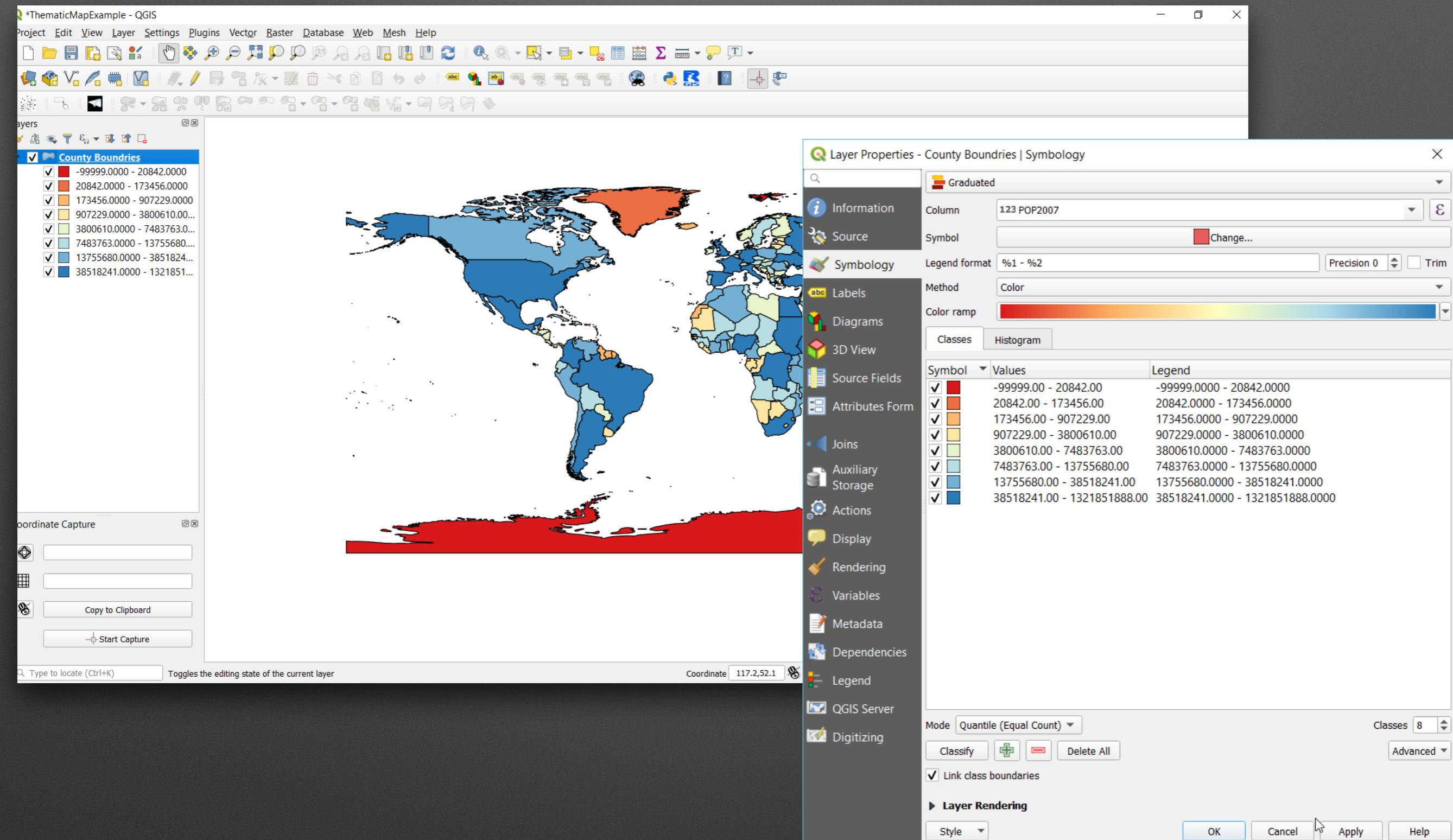
# ArcGIS Pro Layout





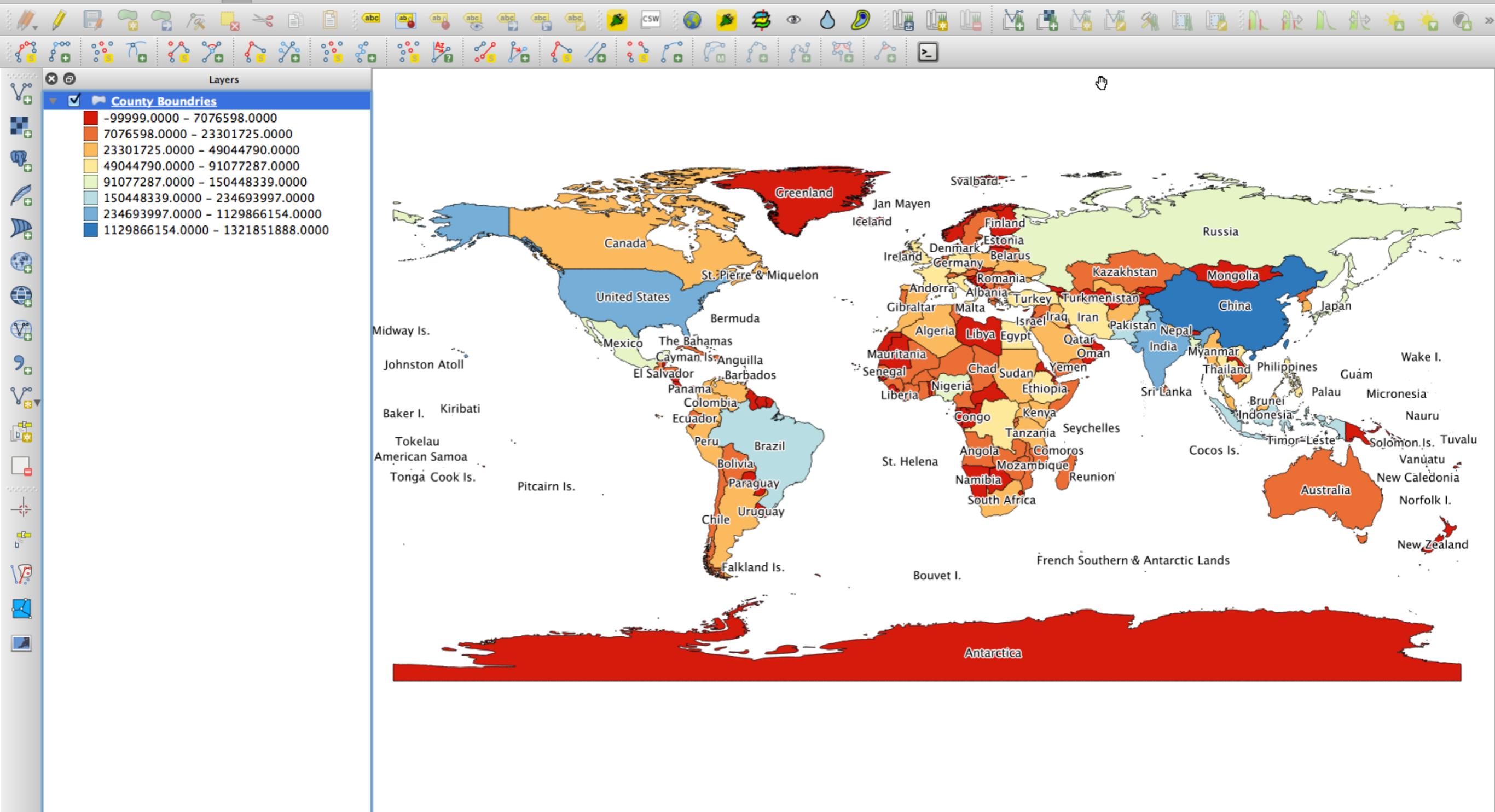






# QGIS

In the Hands on Material Open ThematicMapExample.qgs



# QGIS Layout

# Opensource GIS

# Hands On - Web Maps Examples

- [John Snow Cholera Map](http://www.arcgis.com/home/webmap/viewer.html?webmap=34d9f29cbc514837b5979e08481ffcd3)
- [Battle of Gettysburg](http://storymaps.esri.com/stories/2013/gettysburg/)
- [San Francisco Eyeglass](http://story.maps.arcgis.com/apps/StorytellingSwipe/index.html?appid=fba4350b6d4f4140966251b9c4d2f3a7&webmap=4b2b2784f68e4e5fb0c39c770f1b25ea)
- [Population](http://urbanobservatory.maps.arcgis.com/apps/StorytellingTextLegend/index.html?appid=ac16e954d36a4ffa6484da09cf36185)
- [Airflow Globe](http://www.arcgis.com/home/webscene/viewer.html?webscene=128ba9498cca447ab6ec356b84fee879)
- [Treasure Hunt](http://storymaps.esri.com/stories/2012/treasure-hunt-mountains/)
- [Historic USGS Maps](http://historicalmaps.arcgis.com/usgs/)
- [Innovative uses of story maps during the COVID-19 pandemic](https://storymaps.arcgis.com/stories/4fcddb805b0243988a42868f398a2ea0)
- [DISCOVERY, INNOVATION & HOPE](https://storymaps.arcgis.com/stories/652993f26b064461a31e5befdb3d47f3)
- [The Cherry Blossoms of Washington, D.C.](https://storymaps.arcgis.com/stories/bce0eca488ab47a3b25f63ddca34e679)

# Assignment

- From the reading Lesson 21and22\_1st Edition ArcGIS Book follow the 2 exercise learning about basemaps and map scales and resolutions.
- When you have the exercise complete write a brief reflection on each of the different topics, paying extra attention to how basemaps can be used and what role scale and resolution may have in creating spatial products.

# Reading for Next Week (9/2)

- Longley et. al. c5 (2005)
- Shelito (2012)
- <https://store.usgs.gov/product/16573>
- The GIS 20 Chapter 3
- Fun - <http://xkcd.com/977/>
- <http://www.esri.com/news/arcnews/winter0809articles/the-geodatabase.html>