Exercise 4d: Data Download and Prep for Sea Level Rise Exercise

NASA Socieoeconomic Data and Application Center (SEDAC)

Due: At the start of class on Monday 26 September.
Task: You will download and extract population density data for Asia.
Prepare: a folder on your hard drive with well-labeled folders inside to contain the data indicated in these instructions. Add to your data sources spreadsheet as you download the data.

For the US part of this lab, we worked with census data, which was fabulous, but census data aren't always available. So, when we are working in parts of the world without census data, what can we do to improvise? How can we get an estimate of people who would be inundated by tsunamis or sea level rise?

What we are going to use for this part of the lab is population density data. To find population density data, we will first ask the internet what it knows about population density GIS data. Search for something that sounds appropriate on your preferred search engine. Did you find any reputable sites? Don't forget to look at the date of the data and the grid-size. Both are relevant. List some of the sites that could work here and also on your data spreadsheet.

I found two sources that look reasonable. One is the Asia Population Data – GRID-Arendal page (I have used this for publications before) and the other is the Gridded Population of the World (GPW), v3/ SEDAC. Find those two sources, if they weren't on your list, and write down the data date and cell size below.

Source	Date of data	Cell size
Asia Population Data GRID		
Gridded Population of the World (GPW)		

Which source is better for this project? Why?

In km², what is the resolution of the SEDAC dataset?

To download the data from SEDAC, use this login information:

       Login Username: giswt   Password: Geogis2016

From the dropdown menu, download the most recent grid of Asia population density. Take a look at the option you have for resolution. What does it mean?

Unzip the folder and preview your file(s) in ArcCatalog or ArcMap.

Your downloaded file should contain two raster files. How will you know how they vary? The folder you downloaded also contains some kind of "read me" file. See if you can find any answers there. You can also check out this page for naming conventions of the SEDAC program. Make an appropriate choice and make sure you keep track of the one you plan to work with.

Now, take a moment to make sure you understand what this data represent. Does the value of each pixel represent a population density (number of individuals per area) If so, what is the area? A population (number of individuals)? Is your data in a GCS or PCS? If necessary, refer back to the website to get more information about what your data represent and how it is displayed.