Assignment - Working with Census Data

Assignment 3 - Working with Census Data

**Format:** GIFs. Place on [Student Work Zone](#) section of the wiki

Based on what you learn in the [Census Tutorial](#), produce **six** maps (.gif format) showing census data for **six different variables of your choice**, including at least two American Community Survey variables not found in the decennial census (e.g., median income, ancestry, educational attainment, commute mode). You don't have to have data from 6 different tables, just 6 different variables (so for example, you could have % renters map and a % owners map from the H11 table we used in the census exercise).

- For an urban area
  - you can map Census 2010 data by block, blockgroup, or tract - we recommend tract for now
  - you can map American Community Survey data by tract (ACS 5 year estimates)
- For a state or the entire nation, I recommend mapping data by county (census or ACS 5-year estimates - they are available for all counties)
- An alternative for Massachusetts and some other New England states where there are only a few counties is to map by township, which the Census refers to as a County Subdivision

Your maps should be comparable so that the viewer can easily compare data across maps. This means that all 6 maps should show the same area, be at the same scale, and should use the same color spectrum. They should also have the same reference context (e.g., major roads and water bodies for a city or state, but in subdued colors like gray and pale blue so that they provide context without distracting attention from the census data).

Your maps must also have titles and clear comprehensible legends, with classifications that make sense to a viewer. You should have a citation referring to where you obtained the data. The map should clearly state in the title, subtitle, or legend the level of census geography that is being mapped (e.g., census tract, county) and the census year. For example, for a map of the Boston area showing the percent of the population that is Hispanic by census tract for 2010, your title might be "The Latino Population of Boston", it might have a subtitle that says (Census 2010), and for the Legend, you could have "% Latino (by census tract)".

There should not be an excess of white space and should have good context - that is, they should follow the principles of good cartography that we have learned.

Use the tip sheet, Creating and Editing Scale Bars and Legends for additional guidance concerning those items. I don’t want to see the % sign or $ sign repeated in your legends for each class and value!

The goal is to have maps that are clear to the reader, leaving him/her without confusion about what the map is showing, but with curiosity and additional questions raised by the data.

Two good examples for how they mapped the data, but also the context, and the information (title, legend, source):

- Emily Earle's maps of New York City for this assignment from Spring 2012
- Hannah Sobel's maps of Cuyahoga County (Cleveland), Ohio, from Spring 2013

Additional map tips will be provided in class - you will be expected to apply these in your maps.

For context data (e.g., towns, roads, water if you decide to include them):

- In Massachusetts, use the MassGIS data on the M: drive under State\MA\MassGIS or from MassGIS
- For the rest of the country, you may find the ESRI national data for the US helpful from M:\Country\USA\ESRIDataMap10\usa\census\dtl_cnty (detailed county boundaries)
  - dtl_st (detailed state boundaries)
  - cities (points for towns, which you can then label)
- Trans folder
  - Intrstat (interstate highways)

Some tips sheets for clipping:

- Using the Clip tool - ArcGIS 10.1 Help - Clip (e.g., you could use this with a state, county, or town boundary polygon data set to trim off the ocean areas from census tracts) - this creates a new clipped data set (we have a Census Clipping Tip Sheet here that uses the example of clipping Massachusetts census tracts so that the coastline looks better.
- "Virtual clipping" to a specific area using the Data Frame Clip function - ArcGIS 10.1 Help - Clipping the Data Frame - this does not change your original data set, it simply prevents the visual display of a data set (e.g., census tracts) beyond the boundary of another data set (e.g., a state, county or town boundary) - not you can exclude certain layers (e.g., roads) so they still show beyond the clipped area.
- as for what to use as the "clipper" layer, you might try:
  - for areas outside Massachusetts, the dtl_cnty (detailed county boundaries) in M:\Country\USA\ESRIDataMap10\usa_