

ECON 165
Lecture of April 27, 2010
Part 1
J. M. Pogodzinski

Overview

- **Download** Census TIGER **Boundary File**
- **Download** Census Demographic and Economic Data (as a **Table**)
- **Add Data** – TIGER Boundary Files
- **Add Data** – Demographic and Economic Table Data
- **Join** Table Data to Boundary File
- **Symbolize** quantitative data
- Quick and dirty **exporting of a map**

Download TIGER Boundary File

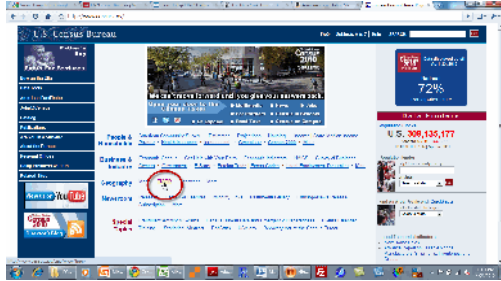
Go to <http://www.census.gov/>

Click on TIGER.

The rest of the steps are about maneuvering on the TIGER File website to get the boundary file for **California Counties**.

I cover every click you need to do this.

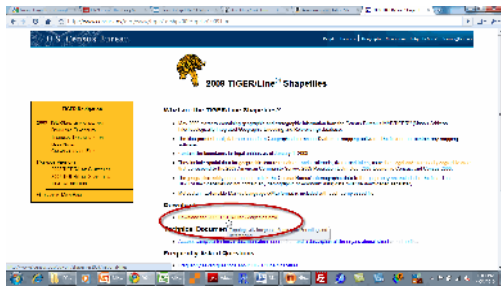
Download TIGER Boundary File



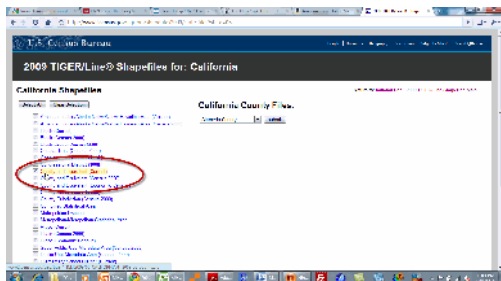
Download TIGER Boundary File



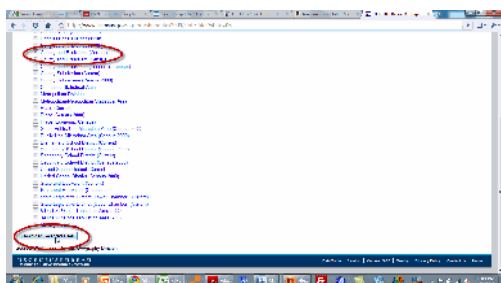
Download TIGER Boundary File



Download TIGER Boundary File



Download TIGER Boundary File



Download TIGER Boundary File

What happens next depends on the internet browser you are using.

If you are using Microsoft Internet Explorer (IE) you may have to change the security settings on the browser to the lowest possible.

The default name of the file you download is multiple_tiger_files.

It is a zip file. You will need an unzipper (built into Windows Vista and Windows 7). Other unzippers are WinZip and Jzip.

There is a zip file embedded in the zip file, so you will have to unzip twice. There are five separate files when the files are finally unzipped. **DO NOT MANIPULATE THESE FILES USING WINDOWS EXPLORER.**

Download Census Demographic and Economic Data

Go to the U.S. Census "American Factfinder" website:

<http://www.factfinder.census.gov/home/saff/main.html?lang=en>

Select Data Sets, Decennial Census.

The rest of the steps are about maneuvering on the American Factfinder website to create a table of specific demographic and economic data for California Counties.

Download Census Demographic and Economic Data



Download Census Demographic and Economic Data

Select the Year 2000 Decennial (Every 10-year) Census.

Select the Sample File 1 (SF 1) category. This corresponds to answers to the "short form" of the Year 2000 Census and is based on a theoretical 100% sample of the population.

Select "Custom Table"

Download Census Demographic and Economic Data

Preview:

We will select data from Tables **P7** (Race), **H4** (Housing by Tenure), and **G001** (Geographic Identifiers). We select all variables from the first two tables, and only land area and water area from Geographic Identifiers.

Note there are many other tables that would give us **hundreds** of other variables.

If we had selected the Sample File 3 (SF 3) category, we would get responses to the "long form" of the Year 2000 Decennial Census. That would give us **thousands** of variables based on a sample of approximately 16.7% of the population.

Download Census Demographic and Economic Data

There are other variables similar to those in the tables we selected. There are other tables that include a racial classification (as defined by the Census Bureau), but some of these contains dozens of categories.

We picked table **P7** because it was sufficiently detailed for our present purposes. The Year 2000 Decennial Census classifies the population into more than 200 racial and ethnic categories, and also dozens of language categories.

Download Census Demographic and Economic Data

After unzipping the file (whose default name is output) you get several files.

One particular file – with the word "data" in the file name – is the one we are interested in: ct_dec_2000_sf1_u_data1.

We will open this file Excel File.

NOTE: I WILL ACTUALLY FIRST MAKE A COPY OF THE FILE (USING MICROSOFT WINDOWS COPY-AND-PASTE) AND RENAME THE COPY ct_dec_2000_sf1_u_data1_working. THIS IS BECAUSE I WILL MODIFY THIS FILE BY DELETING SOME ROWS AND COLUMNS, AND I ALWAYS WANT TO HAVE A COPY OF THE ORIGINAL DATA FOR COMPARISON IN CASE I MAKE A MISTAKE.)

Clean Up Census Demographic and Economic Data

We must modify the Excel file to make it readable by ArcMap.

Problems:

1. It has two header rows. A data base program will read data that has only one header row. We will delete the second header row. That is the one that has more meaningful descriptions for humans, but because the headers are long and have spaces, they would cause problems for a data base program.
2. The remaining header row is formatted differently from the other rows in the table. It has a greater "row height" (50 as Microsoft measures these things) while all the remaining rows have a height of 15). Also, the headers are all text (not numbers) and text is usually left-justified – starts at the extreme left side of the cell, while numbers are usually right-justified, pushed up against the right side of the cell. The text in the header row is centered in the cell, and we want to make it right-justified.

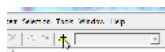
LIVE SOFTWARE DEMO

Clean Up Census Demographic and Economic Data using
ct_dec_2000_sf1_u_data1_working2

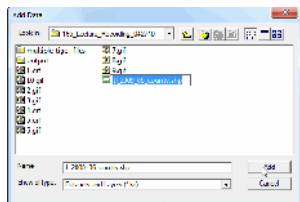
LIVE SOFTWARE DEMO

- Launch ArcMap
- Select "A new empty map"
- Add Data – TIGER shape (.shp) file
- Add Data – Census Tabular Demographic and Economic Data
- Join Tabular Data (data in table form – not map data) to TIGER shape file

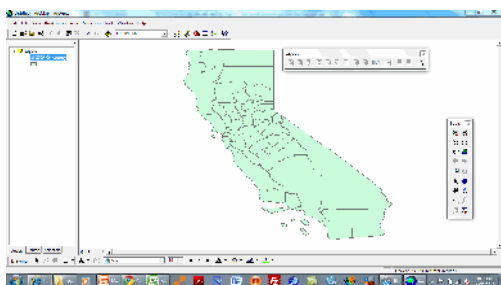
Click the Add Data Button



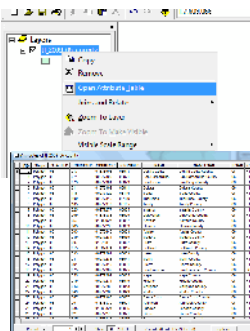
Then navigate to the California Counties shapefile in the Add Data Dialog Box



What You Get Your Screen Should Look Like This



Open Attribute Table



In the Table of Contents pane, highlight the county boundaries file and right click to bring up the context-sensitive menu. Highlight and click "Open Attribute Table"

You get a table that looks like this. This is the database table behind the map of counties.

Did You Get What You Really Wanted?

Looks like there is a lot of rental housing in Southern California – around LA.

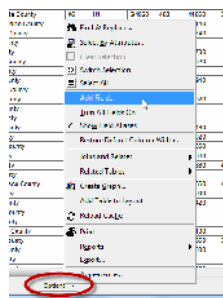
One reason for that is that there are a lot of people and therefore a lot of housing of all types in Southern California.

We used an **absolute measure** – the number of rental housing units. What happens if we use a **relative measure** – the fraction that rental housing is of total housing?

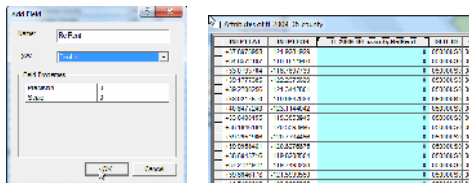
Using a Relative Measure

Creating a relative measure.

Open the attribute table of the map. Click "Options" at the bottom of the table, and select "Add Field"



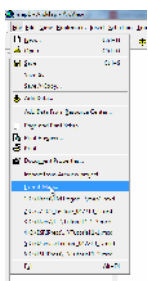
Relative Measure



The New Map



Quick and Dirty Map Export



Exports what is in the display pane in a variety of formats including GIF and JPEG.

ArcGIS has a lot of fancy map generating capabilities. This is just the "quick and dirty" way.
