

Working with Census data in ArcMap 9.x: Tracts as an example

Steve Graham

How to extract tract level Census data:

- Start from <http://www.census.gov/> and navigate to the Data Sets page (or go directly to the following address):
<http://factfinder.census.gov/servlet/DatasetMainPageServlet>
- Select the dataset you are interested in (e.g. SF 1) and then click on 'Detailed Tables'.
- Select the type of geography you are interested in (e.g. '..... Census Tract').
- Select the specific area from the drop down menus as they appear and are populated with the relevant choices (e.g. 'Texas' → 'Travis County' → 'All Census Tracts')
- Once you have selected and highlighted the area (or multiple areas with the CTRL or SHIFT keys) in the list then click the 'Add' button.
- Once all areas have been added to the 'Current geography selections' box click on the 'Next' button.
- Select the census tables to be extracted (e.g. 'P8. Hispanic or Latino by Race (Total Population)') and click the 'Add' button.
- Once all tables to be extracted have been added to the 'Current table selections:' box then click the 'Show Result' button.
- The data can now be viewed online to verify that the extraction is as expected. If the extract is correct click on the 'Print / Download' menu and select 'Download'.
- For most extracts (< 65536 data rows) 'Microsoft Excel (.xls)' can be selected. Click the 'OK' button and the download process should begin. (Depending on the browser and settings you use, the download may not start – you may have to click on the information bar and allow the download of the file and try again).
- Save the file to the hard drive (e.g. in the temp directory).

How to obtain tract level boundary data:

- Start from <http://www.census.gov/> and navigate to the 'Cartographic Boundary Files' page (or go directly to the following address):
<http://www.census.gov/geo/www/cob/index.html>
- Click on 'Download Boundary Files'.
- Select the type of boundary file and version (e.g. 'Census Tracts 2000').
- Click on the area of interest and file format to download the files (e.g. shapefiles for Texas 'tr48_d00_shp.zip')

How to integrate the two:

Create Unique ID field for the attribute data

- Unzip/open the file.
- Create a field of the FIPS codes for each record. (e.g. insert a column between column A(GEO_ID) and column B and name it 'TRTFIPS' and type in the formula into B3 '=right(A3,11)' then copy this formula down for all of the records.)
- Remove the descriptive field name row if census variable names are present.
- Save the file as a dbf (e.g. 'travis.dbf').

Create Unique ID field for the boundary data

- Unzip the files
- Open ArcMap and add the data into the data frame.
- Right click on the layer and click on 'Open Attribute Table'.
- In the Attributes window click on the 'Options' button and select 'Add Field'.
Name: 'TRTFIPS' This will contain our FIPS values for Tracts
Type: 'Text:' This will be a text identifier and not treated as numeric
Length: '11' The tract FIPS code is 11 characters long
- Click the 'OK' button.
- Right-click on the field name 'TRTFIPS' and select 'Calculate Values...', also click on the 'Yes' button for the edit question.
- Click on 'STATE' and then '&' and then 'COUNTY' and then '&'
- In the box under 'TRTFIPS =' it should now read '[STATE] & [COUNTY] &'. Now type 'left(' then click on 'TRACT' and '&' then type '"00",6)'. The final equation should look like this
- [STATE] & [COUNTY] & left([TRACT] & "00",6)
- Click on the 'OK' button.

Joining the attributes to the geography

- Now join the attribute data to the shapefile by right-clicking on the shapefile and selecting 'Joins and relates' → 'Join'.
 1. 'TRTFIPS'
 2. Use the browse button to locate the dbf file created above (e.g. 'travis.dbf') and click the 'Add' button.
 3. 'TRTFIPS'
- Click the 'OK' button. Indexing can help with larger files)
- The data have now been integrated in both the map and table views. To make a permanent version of the joined data – export the shapefile or table to a new name.