

# Mapping American Factfinder Data with ArcMap

Following the instructions in this presentation and working through the example will enable you to

1. Download geographic borders
2. Download American Factfinder information from the Census web site and use Microsoft Excel to properly modify the data
3. Add both data sets to ArcMap and join their respective tables
4. Produce a map

## Step 1. Download borders from the ESRI web site

To find TIGER boundary files, go to the following web site:

[http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm)

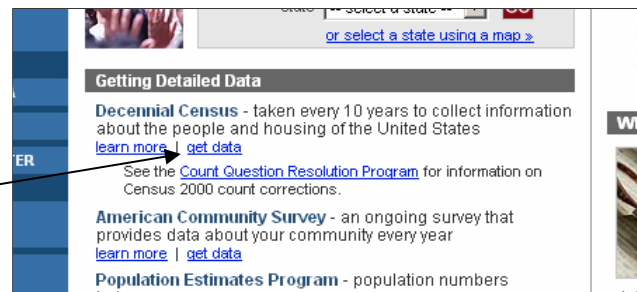
Select *North Carolina* and then *Jackson County*. On the next page, choose *Census Tracts 2000*.

Click *Download File* and then *Save* the file to some convenient disc space. You will receive a .zip file containing the census tracts in compressed shapefile format. *Extract* the files.

## Step 2. Download data from the Census Bureau web site

Go to <http://www.census.gov/> and click *American Factfinder* (left side of screen).

Then, under *Getting Detailed Data: Decennial Census*, click *Get Data*.

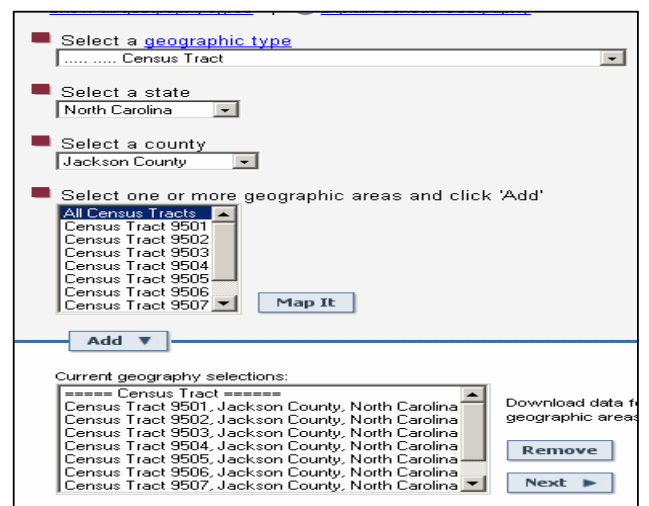


Choose *Summary File 3 (SF3)* (for detailed, sample information), and *Detailed Tables*.

You now need to specify the geographic area.

We downloaded borders from ESRI for census tracts, so choose *Census Tract*, then specify *North Carolina* and *Jackson County*.

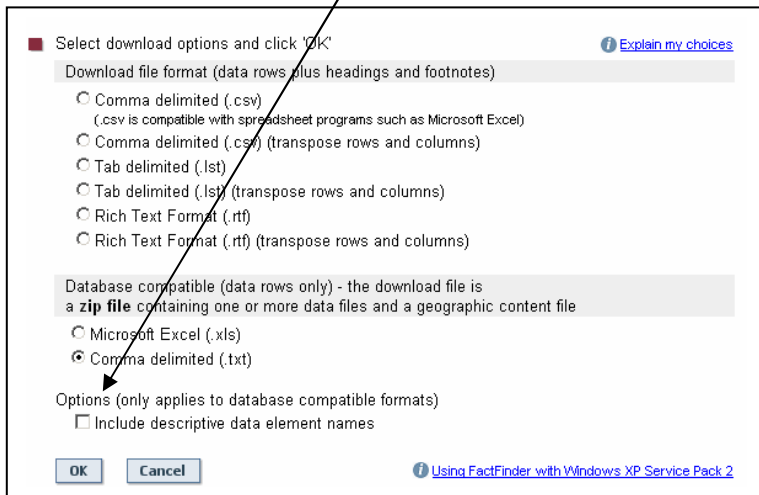
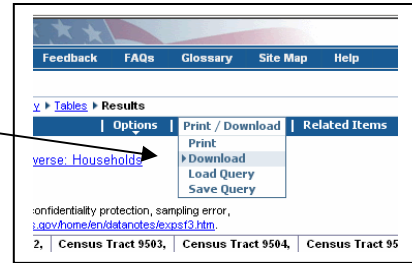
Highlight *All Census Tracts* and then click the *Add* button below the box. Click *Next*.



Let's look at Table P53: Median Household Income in 1999. Scroll down to P53, highlight it, **Add** it to your table selection and **Show Result**.

When your results appear, click **Download**.

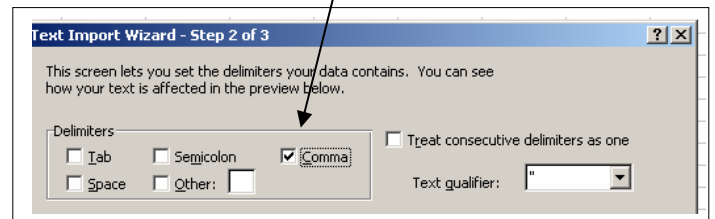
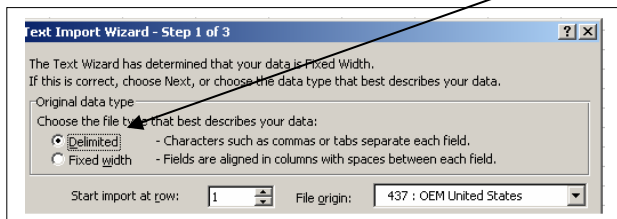
You will be given a number of choices for your download format. Pick **Comma Delimited (.txt)** and uncheck "Include descriptive data element names" Click **OK**.



The data will again be in .zip format. **Open** and then **Extract** the data to a convenient file. The next step is to convert the data to a format recognizable by ArcGis. To do so you'll use Microsoft Excel, so close your internet browser and open Excel.

Click **File** and **Open**, navigating to the folder that contains your files and making sure to indicate **All Files** under the "Files of Type" box. Open the file called **dt\_dec\_2000\_sf3\_u\_data1.txt**

In the Text Import Wizard, click on **Delimited**, then **Next**. Specify **Comma** on the next screen (unchecking "Tab") and then click **Finish**.



To clearly view the contents of each column, click the cell in the upper left corner (highlighting every cell) and then double-click a boundary line to the right of one of the column headings.

We need to make a change to the GEO\_ID column. Click the "A" to highlight the entire column, then, on the menu bar, **Edit** and **Replace**.

For "Find what:" enter **14000US**  
Replace with: ' (one apostrophe, please refer to the picture on the next page)  
Click **Replace All**.

You have accomplished two things; first, the unneeded “14000US” prefix has been deleted, and you have also made Excel recognize the GEO\_ID column contents as text, rather than numbers. This is important because some geographic areas might begin with zero and, if considered a number, Excel would eliminate that zero. You know that Excel sees the values as text because of the green marker in each cell.

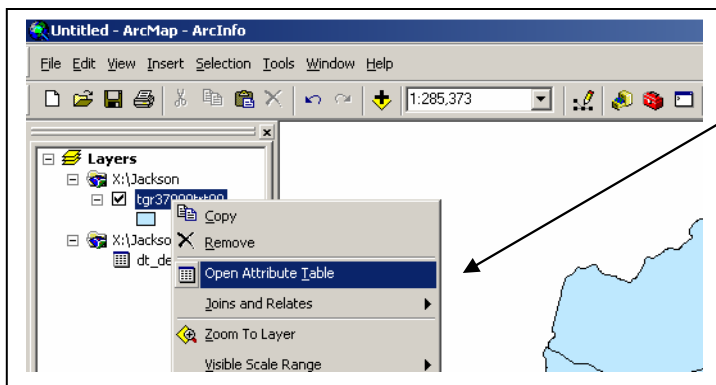
Highlight all cells that contain data (rows A – E, columns 1 – 10). Click **File** and **Save As**, and specify **DBF4** as the file type. Click **Save**. When the warning message appears, click **OK** again.

	A	B	C	D	E
1	GEO_ID	GEO_ID2	SUMLEVEL	GEO_NAME	P053001
2	14000US37099950100	37099950100	140	Census Tract	32,593
3	14000US37099950200	37099950200	140	Census Tract	34,091
4	14000US37099950300	37099950300	140	Census Tract	33,076
5	14000US37099950400	37099950400	140	Census Tract	30,613
6	14000US37099950500	37099950500	140	Census Tract	31,508
7	14000US37099950600	37099950600	140	Census Tract	29,269
8	14000US37099950700	37099950700	140	Census Tract	29,397
9	14000US37099950800	37099950800	140	Census Tract	37,311
10	14000US37099950900	37099950900	140	Census Tract	47,576

Be sure to close the file – you’ll be unable to use it if you leave it open.

### 3. Add Downloaded Data to ArcGis

Open ArcMap, choosing to work with a **New Empty Map**. Click **File** and **Add Data**. First, look for your census tract shapefile (**tgr370999trt00.shp**) and add it to the map. Also add the database file **dt\_dec\_2000\_sf3\_u\_data1.dbf** (the one you saved using Excel).

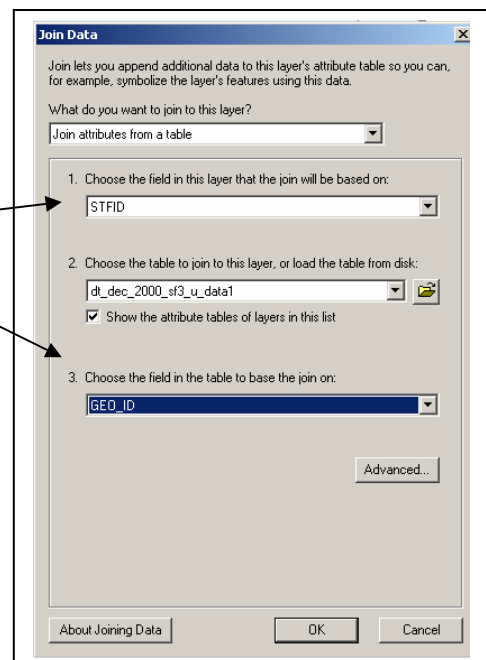


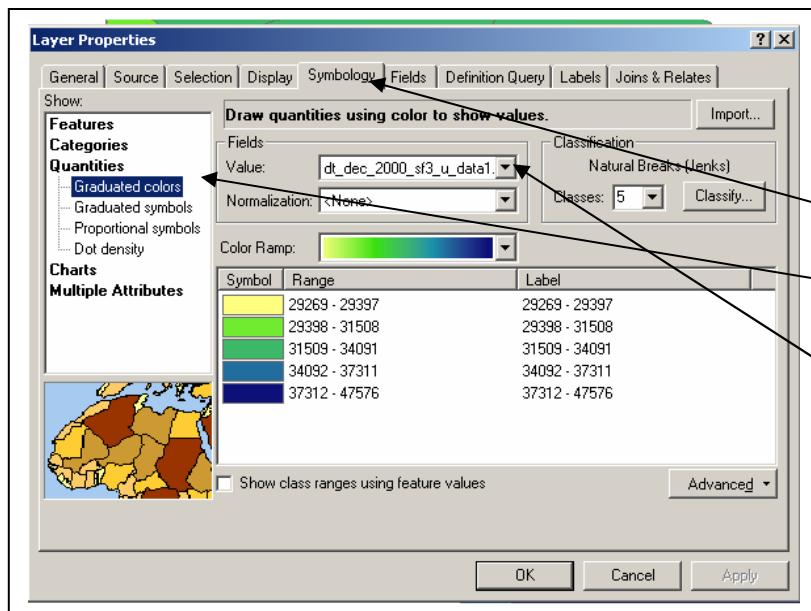
Have a look at the file contents by right clicking on each file’s name, then choosing **Open Attribute Table**.

Notice how the columns **STFID** (in the shapefile) and **GEO\_ID** (in the database file) are identical. Based on these matching fields, we can **Join** the two files.

Close both attribute tables. Right click again on **tgr370999trt00** and select **Joins and Relates**, then **Join**.

Choose **STFID** for box #1 and **GEO\_ID** for box #3. Click **OK**. Verify the join by again opening the attribute table for the shapefile. Scroll to the end and you’ll see the added columns. Close the attribute table.





Right click again on **tgr37099trt00.shp** and select **Properties**.

When the Layer Properties Box appears, click the **Symbology** tab and, in the Show box, click **Quantities** and **Graduated Colors**.

Add the **Median Household Income** field to the Value field (the last one, PO53001).

Choose one of the color ramps. Click **OK**.

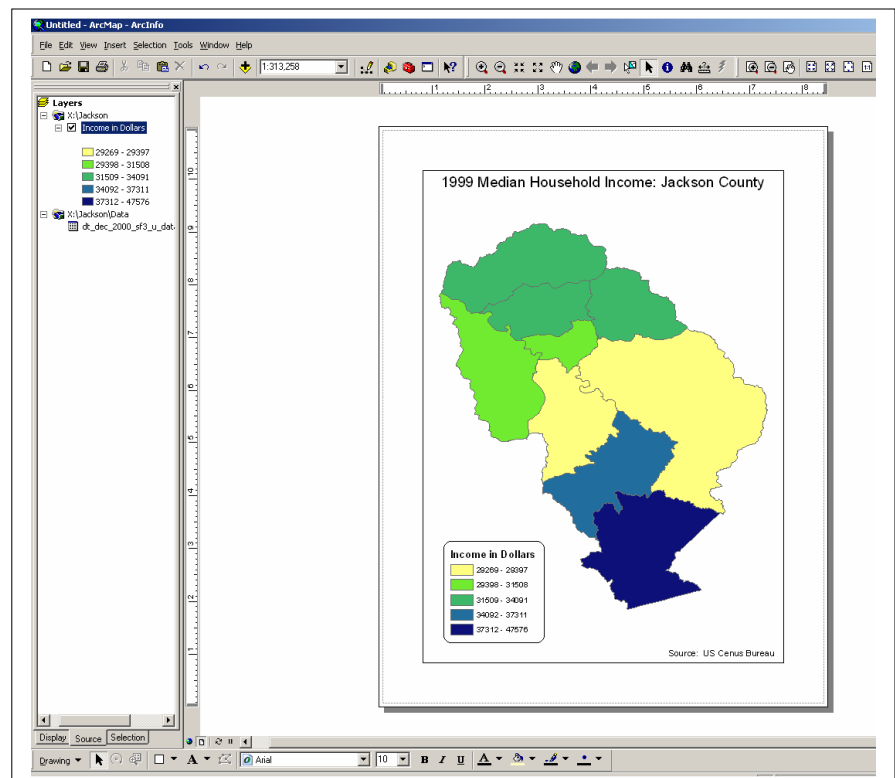
## 4. Create a map

Click **View** and **Layout View**. Click **Insert** to add items such as a title or a legend to your map. You may also wish to add labels to your census tracts. To do so, select the **Labels** tab in the **Layer Properties** dialog box (pictured above). In the label field, select the **TRT2000** field and click **OK** to close the box. Right click again on the shapefile name and select **Label Features**.

Your map can be customized in many ways. The income ranges, for example, can be modified. You can change colors or even represent income levels with graduated symbols. Frequent use of the ArcGIS *Desktop Help* will enable you to take advantage of the many available features.

To save the map you made, click **File** and **Export Map**. Choose between options like .jpg or .pdf. Click **File** and **Save As** to save the settings of your ArcMap session.

Keep in mind that, while this example concentrated on Jackson County and median household income data, you can also download any other county or a different census summary file. Repeat the steps above, experimenting with other geographical areas or census categories.



### For More Information

- Refer to the Census Bureau's descriptions of both geographical categories and summary file contents at <http://www.census.gov/>
- TIGER files are defined and described at <http://www.census.gov/geo/www/tiger/overview.html>
- Many sites can help you with map color selection. One example is [http://www.personal.psu.edu/faculty/c/a/cab38/ColorBrewer/ColorBrewer\\_intro.html](http://www.personal.psu.edu/faculty/c/a/cab38/ColorBrewer/ColorBrewer_intro.html)