New Jersey State Data Center
Census GIS Workshop 2015

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Cooperative project of the State of New Jersey and the U.S. Bureau of the Census serving data users in the public, private, and academic sectors since 1980.

Each state has an SDC acting as secondary distributors of Census data providing value added products and expertise for their respective state.

The NJSDC maintains a data dissemination network of over 110 state, county, regional, and local agencies.

- Includes:
  - All 21 county planning boards
  - Metropolitan Planning Organizations – DVRPC, NJTPA, SJTPO
  - Representatives from 19 State Departments/Agenecies
  - Federal Depository Libraries including the New Jersey State Library, Rutgers and Princeton University Libraries
http://lwd.dol.state.nj.us/labor/lpa/LMI_index.html
NEW JERSEY STATE DATA CENTER

The New Jersey State Data Center (NJSDC) is a cooperative project of the State of New Jersey and the U.S. Bureau of the Census. Serving data users in the public, private, and academic sectors, the NJSDC has three main objectives:

- Expand access to and use of census and other statistics.
- Provide technical assistance and analytical support in the use of these statistics.
- Provide user training on timely, census-related topics.

The NJSDC consists of a network of over 110 state, county, regional, and local agencies. The lead agency is housed within the Division of Labor Market and Demographic Research, New Jersey Department of Labor and Workforce Development.

A variety of statistical reports from State and Federal agencies may be accessed through the NJSDC network. Data from the state and sub-state demographic and economic data prepared by the New Jersey Department of Labor and Workforce Development are also available through the NJSDC.

2010 Census Links

NJSDC 2010 Census Home Page

What's New

- 2010 Census Affirmative Action 5-year ACS Data: Data contain race and Hispanic origin information by race/ethnicity and sex for Affirmative Action/EEO Plans Tabulation 2005-2010 (5-year ACS data).
- My Congressional District: gives you quick and easy access to selected statistics by the U.S. Census Bureau through the American Community Survey. Find detail information on People, Jobs, Housing, Economic, or Education for each New Jersey Congressional District.
- 2010 Five-Year Commuter Adjusted Population Estimates: all U.S. States, counties and minor civil divisions with 2,500 or more population.
Data Available Through NJLWD and NJSDC

- Population and Demographic Trends
  - Census Data
  - Population and Household Estimates
  - Building Permits
  - Income and Poverty Data
  - Women and Minority Owned Businesses

- NJ Department of Labor Economic Data
  - Labor Force Estimates
  - Unemployment Rates
  - Employment Data
  - Industry and Occupational Employment Projections
  - Population and Labor Force Projections
  - Occupational Wage Rates
QGIS

Pros:
Powerful Desktop GIS Software
Open Source Software
ArcGIS type Layout Used
Free

Cons:
Open Source Vulnerabilities
Not as Widely Used as ArcGIS
Not Compatible with ArcGIS
  - .qgs extension
Link below will bring you into the tool with all of the example parameters pre-loaded.

http://qwiexplorer.ces.census.gov/exp-r/f4352.html?st=NJ&v=map&fc=true&t=ac0&extra=x%3D0%26g%3D0
This is what the downloaded .csv data file looks like in Excel.
QGIS Opening Screen

New Map/Project
Open Map/Project
Save and Save as

Browser Window:
- Refresh
- Add Selected Layer
- Filter Files
- Collapse All

Layer Window:
- Add Group
- Manage Layer Visibility
- Filter Legend by Map Content
- Expand All
- Collapse All
- Remove Layer/Group
QGIS Opening Screen

Zoom In/ Zoom Out
Refresh

Add:
- Vector Layer
- Raster Layer
- PostGIS Layers
- SpatiaLite Layer
- MSSQL Spatial Layer
- Oracle Spatial Layer
- Oracle GeoRaster Layer
- WMS/WMTS Layer
- WCS Layer
- WFS Layer
- Delimited Text Layer
Add County Shapefile by either double clicking on shapefile in browser window or highlight file and click “Add Selected Layers” button.
Add Data File

Now add the Local Employment Dynamics data file (.csv) by double clicking on the “Add Delimited Text Layer” button. Browse for your .csv file and under Geometry Definition, click the “No Geometry” radio Button. Click on “OK”.

[Image of a screenshot showing the process of adding a CSV file to QGIS]
Preparing to Join Files

Right click on each of the Shapefile and Data file to click on “Open Attribute Table” and find a common field to join the two tables.

Remember the variable names in each file as they may not be the same.

Next, click on “Properties” to get to the Join “Tab”
On the Layer Properties screen select the “Join” tab and click on the green plus button on the bottom left of the window.

Since “Properties” was selected while OGIS_countycoast was highlighted, you will be indicating which file you want to join to it and by which field the join will occur.

In this example, New Hires 2013 is the Join Layer and the field we want to use to join to the shapefile is “COUNTY”.

Joining the Shape and Data Files
Joining the Shape and Data Files

OGIS_countycoast is your selected target layer. You want to join “New Hires 2013” on the target field “COUNTY”. Select COUNTY from the drop down box.

Check the “Choose fields” box and select those fields you wish to join. In this example we joined all fields except the flag fields.

Field Name Prefix is not necessary to check but helps keeping track of data source.

Select the “OK” button to complete the join.
Join is now Complete.
The General Tab is where you will find basic information about the highlighted shapefile such as the Coordinate Reference System (CRS) used for your map.
Changing the Layer Properties

The Style Tab is where you will make choices on how your Thematic Map will display the data you are working with.

For our example, we will create a Graduated Thematic Map.
Select the data you wish to analyze. In our example, it is Accommodation and Food Services.

Select this industry from the “Column” drop down box.
In the “Classes” drop down, select 7 for the number of data groups.

Select Equal Interval as the “Mode” and set the “Precision” to 0 and leave the “Trim” box unchecked.

Select Browns 2 in the “Color Ramp” dropdown (Custom Color) and check the “Invert” box so the color ramps from light to dark brown.

When highlighting the “Legend Format” box, an informational appears to explain the Legend format.

Hit “Apply” and “OK”
Your Map is now color coded by the 7 classes that you previously defined.

Visibility of the 7 classes are selectable and any class can be removed by unchecking the box beside any of the 7 classes.

You can also turn on or off the entire OGIS_countycoast layer by clicking on the box beside the layer name. This is handy when superimposing different geographies over each other.
Now we want to label our map. From “Layer Properties”, select the “Labels” tab or the “Labels” button on the top menu.

Check the “Layer Label With” box. We will create the expression in the box with the expression creator (button to the right).

Select your Font, Style, Size, and Color of your label. You are also able to select Transparency level, Type Case and Spacing of the label as well.

Now click on the Expression Creator button in the upper right corner of the “Labels” tab.
Use the Expression Creator to build an expression that formats your label.

In the Fields and Values Function, select the field “County” then hit the “Concatenate Button” (||). Next type in the visual basic code for “next line” (\n’). Expand the String Functions and select the format_number() function. The first item in the parenthesis is the “Accommodation and Food Services” field followed by a comma and then the number of decimal places and the end parenthesis.

If your expression is valid you will see the result in the Output Preview.
Labeling the Map

In the “Formatting” Tab select the alignment. In our example the alignment is set to “Center”
In the “Buffer” Tab, check “Draw Text Buffer” box and select the Size, Color, and Transparency Level of your buffer to give your label a 3D quality and visibility over geographic boundaries.
Skip the “Background” tab and move to the “Shadow” Tab. This is another tool to give your labels better visibility.

Check the “Draw Drop Shadow” box and select that it be drawn under the text of the label. Next, select the offset angle, blur radius, transparency, and color of the shadow.

The settings for the “Placement” and “Rendering” tabs are left in their default settings.

You can now click on “Apply” and “OK” to see the changes to your map.
Your Map is now labeled.

QGIS has a separate process for finishing the map for printing.
To start the Print Composer, click on the “New Print Composer” button and give the composer a name.
Click on the “Add new Map” button and move the cross hairs to the upper left corner, click and hold as you drag down to the lower right corner to set the visible area for the map.

Release the mouse button and the map will appear in the window.
As you can see the map looks small and is at the shift bottom of the frame.

Set “Scale” to 1050000 to bring map to size of the specified area.

Click on the “Move item content” and drag the map to where you want it on the work area.
Here is how your map should look. All additional settings on the “Item Properties Tab” are in their default position.

All settings on the “Atlas Generation” Tab are also in their default postions.
On the “Composition” tab, the default resolution is 300 dpi. In our example we increased the resolution to 600 dpi.

Click on the “Change” button for “Page Background” to make the page transparent. (Under “Item Properties” the background box must be unchecked)
Click on the “Add New Label” button and with the crosshairs drag from upper left corner to lower right to form a title box at top of page.

Under “Item Properties” Change the title to “Accommodation and Food Services”, Change the Font Size to 22/Bold, and select the “Center” radio button for horizontal alignment and “Middle” for Vertical Alignment.

All other settings on the “Composition”, “Item Properties”, and “Atlas Generation” tabs are in default position.
Print Composer – Add A Title

Click the Save button to save your map with its title.

Your map should now look like this.
Click on the “Add Legend” button, place the crosshairs in the upper left corner of the space where you want the legend, left click and hold as you drag the box down and to the bottom right corner and release the mouse button.

Your Map Legend should look like our example. No changes need to be made to the Composition and Atlas Generation tabs.
In the “Item Properties” tab in the “Main Properties” box, change the title to New Hires Average of 2013 Q1-Q4, set title alignment to “Center” and set “Wrap text on” to the letter b. This changes the title of the Legend.

Next, under Legend Items, Uncheck the box that reads “Auto Update” right click on “New Hires 2013” and check the box labeled “hidden”. Right click on OGIS_countycoast and check the box labeled “hidden”.
Scroll down the “Item Properties” and uncheck the background box so the legend has a transparent background.

Click on the “Fonts” arrow and then click on the “Title Font” button and select “Bold” to make the Legend Title stand out.
Your finished map is now ready for print or export as an image file, vector based output/SVG file, or a .pdf file.

Be sure to save your work before closing the Print Composer and QGIS desktop.
Contact Information

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“Labor Market Information” on Left Navigation Bar
Look for the NJSDC Logo