GeoLytics®

User Guide for

CensusCD® Products

A. Introduction

CensusCD® Products have easy to use interfaces that give you access to compressed datasets of demographic variables. **Geolytics®** has also added many useful analytic tools, such as calculating population characteristics around a point by running a radius report. CensusCD products are for business, government, and academic users who need instant access to demographic data. For GIS users, data and maps can be exported as ArcGIS® shape files and MapInfo® mid/mif files. For non-GIS users, there are thematic mapping, query capability, and statistical tools built into a mapping application that integrates demographic information.

Documentation provided by the Census Bureau is generally on a pdf file on your disk in a folder marked "doc". It can be viewed using Adobe Acrobat Reader®. A specific Help section to explain the Map Viewer is available in the main Help contents and in the Map Viewer. The Neighborhood Change Database (NCDB) and the GeocodeCD have unique interfaces. Please refer to each one's own unique user guide.

B. Installation

When installing the CensusCD no part of the path name can exceed 8 characters.

We recommend that you use the default path when installing the CD. However, if you choose to reassign the path, no part of that path can exceed 8 characters. For products that come in multiple disk sets such as the 2000 Long Form, you only need to install it once from any one of the CDs provided (the 1990 Long Form in 2000 Boundaries has its own installation disk). To use the program, the original CD must be in the same CD-ROM drive in which it was installed at all times. Otherwise the program starts, but you will not be able to run reports.

1. Insert the CensusCD disk into your CD-ROM drive

2. You can install the disk through the Windows Program Manager or "My Computer" icon

    a. In the Windows Program Manager, choose "Run" from the "Start" menu
    b. Type in D:\set.exe (assuming D is the letter of your CD-ROM drive), click OK

    OR

    a. Click on the "My Computer" icon and choose the CD drive (often D:\)

b. Click on the "Set Up" icon (it looks like a small blue computer)

3. Follow the on-screen instructions.

Note: if you have previously installed the same CensusCD product, you must uninstall it now. The software will prompt you through the uninstall process.

4. When prompted, enter your name, the name of your organization, and your serial number, which can be found on the CensusCD Product Serial Number(s) page. This page came with your CensusCD as a separate sheet. Type the serial number with no spaces or dashes. It is very important that the number is exact. You must make sure that you type the serial number for the actual CensusCD product you are installing. Each product comes with its own serial number if you purchased more than one product.

5. After the installation is complete, you can start the product at any time by double clicking on the corresponding CensusCD icon or from the Windows "Start" button.

C. Five Steps to Producing Files and Maps

With CensusCD Products, you can produce files, run reports, and make maps in 5 easy steps:

1. <u>Select the Area of Interest</u> – The next step is to select the area that you want to study. This is the entire area of your study. For example, if you want to look at census tracts in a given county, your geographic **area** is the **county** you are studying. The tracts are the subarea, which is how you want to see the variables broken out. In most cases, when selecting an area of interest you have two options. You can either select a predetermined geographic area (such as nation, state, county, tract, etc.) or you can select a specific location (latitude/longitude coordinate) and get a circular radius around that point.

a. <u>Select a Geographic Area</u> – When selecting a geographic area, you have many different levels of geography to choose from depending upon the product.

Census defined geographies include Nation, States, Counties, Tracts, Block Groups, and Blocks. Other geographies that are available include MCD/CCD, Places, Congressional Districts, Zip (ZCTA), MSA/CMSA, CMSA/PMSA, American Indian Reservations, Voting Districts, and School Districts.

Select the geographic area that you want; a pull down menu will walk you through the specific selection. For example, if you select "Counties" you will first select the state the county is in and then select the counties you want.
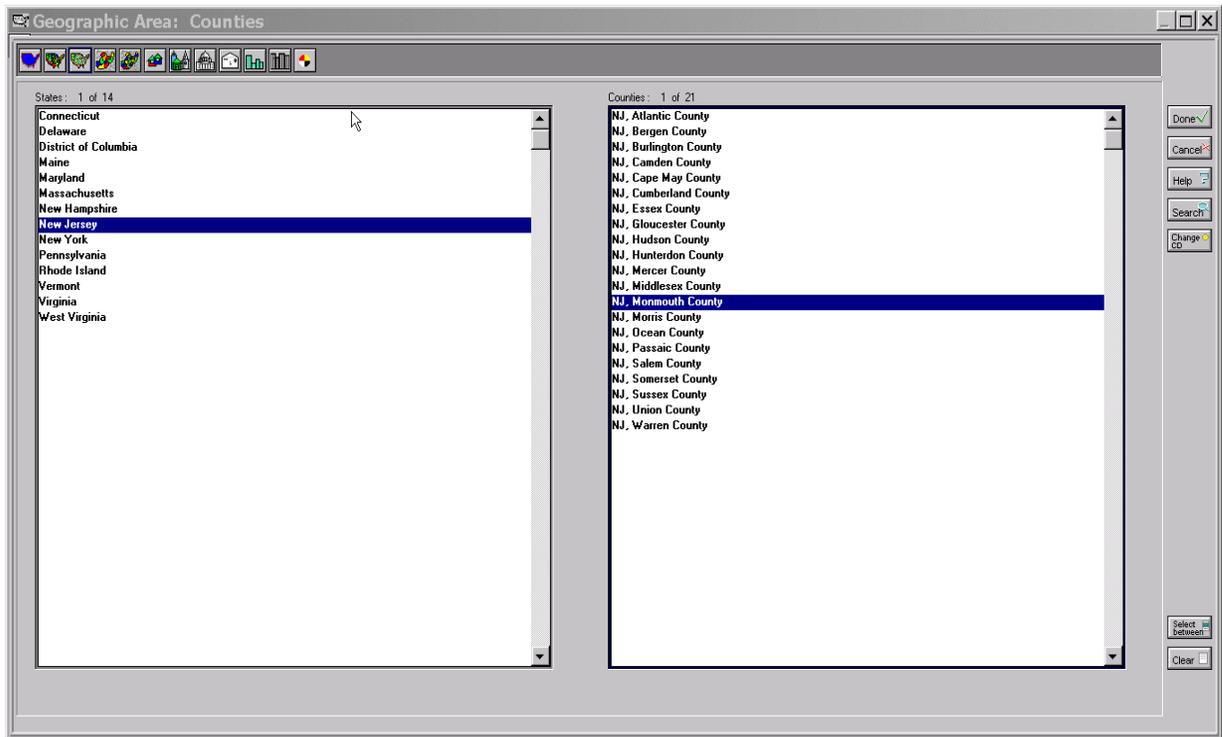
You can select an area up to 240 areas of the same type. If you need more than 240 areas you should probably select a bigger "Area" when you begin. For example, to select and view all of the tracts in a state, you select the "Area" as State and the "Subarea" as Tract. This gives the larger geography of the State broken down into tract level detail.

--OR--

b. <u>Select a Radius</u> – The second type of area is radius, a circular area around a point. You can use this type of area view to get information around a specific location. Use an exact latitude and longitude to specify the center of the radius. Then, enter the distance from the center of the radius to specify the distance around that point.

For example, if you want to view a 10-mile radius around a specific location, first enter the latitude and longitude. Then put the "Distance: To" as 10.

You can also do a doughnut study around a specific point for ring analysis. For example, enter "Distance: From" as 10 and the "Distance: To" as 25. This gives you a double ringed circle around a point, with the area coverage lying between 10 miles and 25 miles around a specific location. Below is a doughnut of total population distribution by census block around a point in Nashville, TN.
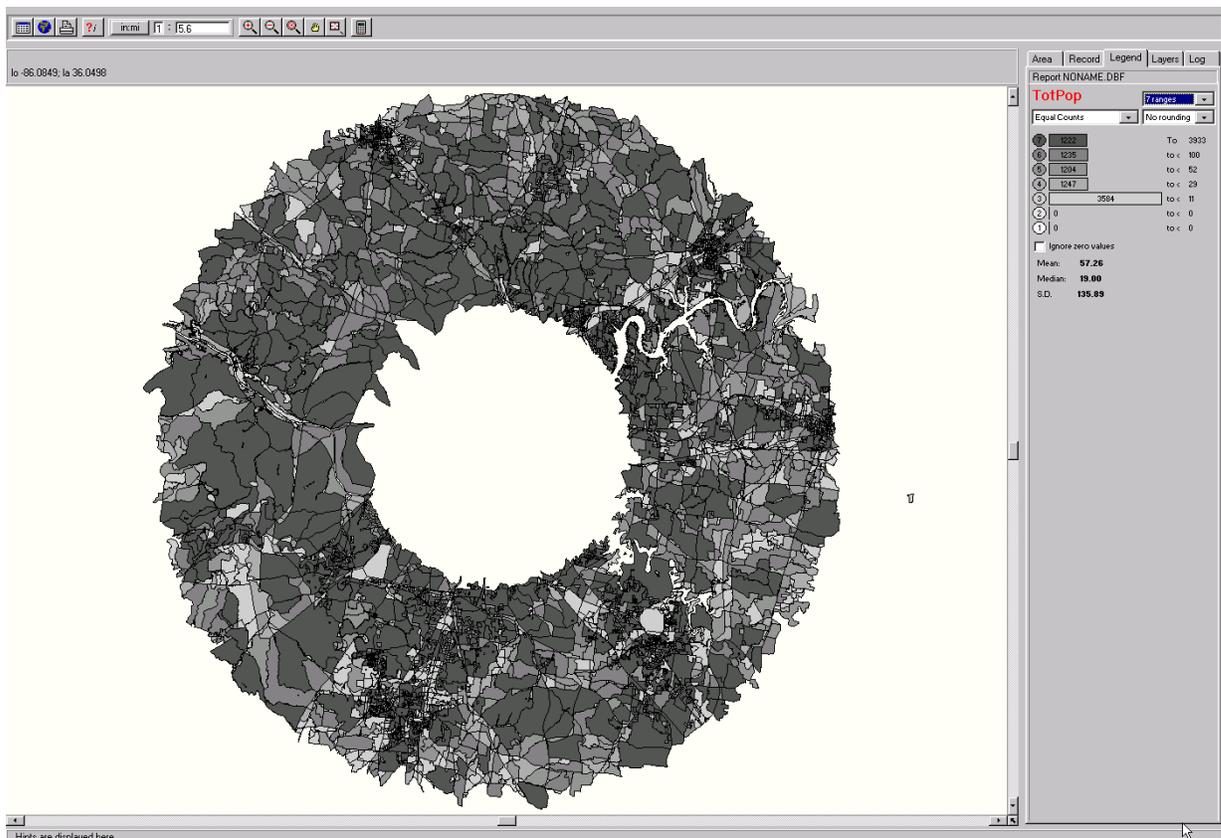
2. <u>Select the Subarea</u> – The subarea tells the program what level to present and view the data. Other than in a snapshot, **you must always select a subarea.** For example, you can choose the counties in a state, the tracts in a county, or the zip codes in a state. In these examples the subarea is the county, tract, and zip code. The only products in which you do not select a subarea are our Census Block products, because the subarea in these products will always be the Census Block. The Neighborhood Change Database (NCDB) also does not have subarea because all data is reported at the tract level (see the NCDB User Guide).

If you want data for 5 zip codes, then select Area as Zip **and** the Subarea as Zip. The subarea can be the same as the area.

The subarea is either the same as the area or it needs to be a smaller, wholly contained section of the area. For example, you cannot run the zip codes of a county because zip codes cross county lines. To build an association for these types of relationships you need to run the state as the area with zip code as the subarea. Then add county as a layer over the map. Alternatively, you can run the county at the block level (if you have a block product from us) with the Geographic Indicators for both zip code and county, then you can see which blocks are in a given zip code and county. We also sell these association files as custom reports and datasets.

Below is a map of Middlesex County, NJ. The gray area in the left-hand box is the county line. Superimposed over it are the zip code boundaries. As you can see in the blown-up version on the right, zip code 08540 has a small corner that is within the county lines, but most of it is outside the county. Likewise, most of zip code 08512 is within Middlesex County, but not all of the zip code is.
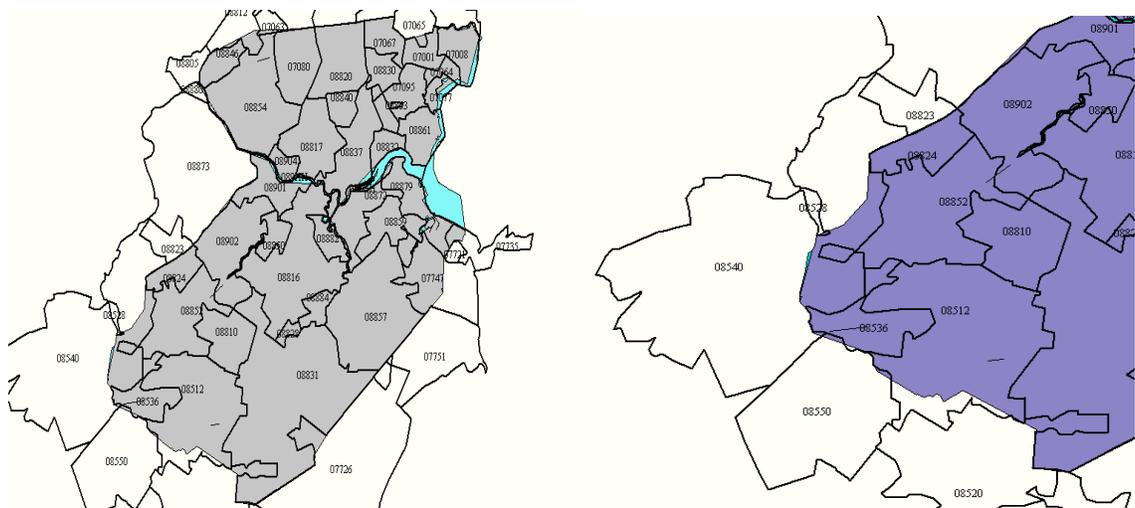

There are some areas that cannot be broken into smaller subdivisions. In these cases the only option under subarea that appears will be the same as the area you chose. For

example, "place" can only be summed at the place level. Even though this is the same as area, you still need to click on it to confirm your subarea selection with the program.

3. <u>Select the Counts (Variables)</u> – Next, you need to specify the census counts or variables. "Counts" are the actual demographic and geographic variables that you want to include in your file. Any of the counts can be selected using the pull down menu. For a complete list of variables and data tables, go to our web site www.geolytics.com and select the link to the CensusCD product that you have. Then select the tab for "Variables".

The census counts are broken down into groups such as geographic indicators, population, and housing. Each group is a theme related collection of tables, with the table comprised of multiple counts (variables). You can select counts from more than one group at a time.

For example, if you have the CensusCD 2000 Long Form, the variables are grouped under the headings Geographic Identifiers, Population 1, and Housing 1. Population 2 and Housing 2 are cross-tabulated variables or low incidence variables (i.e. country of ancestry) that cannot be selected at the block group level to protect the anonymity of the population. If you want to look at Population 2 or Housing 2 variables, you must select them at the tract level geography or higher.
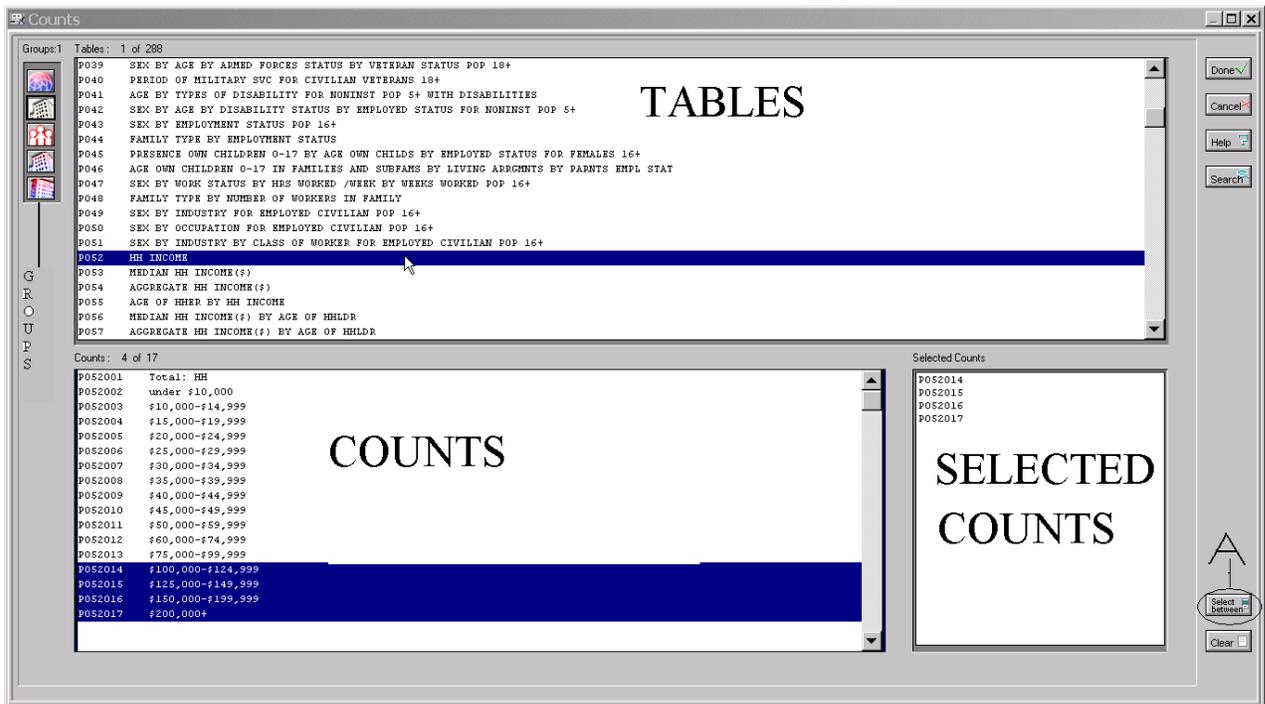
a. To begin, select "Counts" from the menu across the top of the page.
b. From the pull down menu, select the group(s).
c. In the window marked "Tables", the demographic categories will appear. Scroll down and select the ones you want. When you select a Table all of the Counts in that Table will open into the Counts section of the screen.

d. In the bottom window marked "Counts", the selections within the categories will appear. Select all the counts that you want included in your file. For example, you may choose the table "Household Income". Click on it and in the bottom left hand box will appear the variables under income. There will be multiple income brackets that you can select. Click on any or all of the variables and they will show up in the bottom right hand box under "Select Counts". Click on "Done" in the top right corner and you are ready to go.

Certain CensusCD products, such as the 2000 Redistricting CD and the Estimates and Projections CDs, do not have count tables because there are so few variables. For these, just select the variables you want from the "Counts" window.

You can determine if a count is selected when you see its short description ID in the "Selected Counts" window to the left. Tagging the first and last counts that you want in a series, and then clicking on the "Select Between" button (A above) to the far left, will select a whole group of counts.

4. <u>Name Your File</u> **(8 characters or less)** – You may want to save your report request depending on the number of area and variable counts you selected. In some cases, it takes a lot of time to define the area of analysis and to select the specific counts that you want. Therefore, you may want to save your request so you can quickly run the report again at a later date or to change the parameters of your report request. However, often it takes very little time to select new variables or geographies, and you may want to run reports again and again without saving them until you get the exact set of counts and geographic boundaries that you need.

To name a new report request or open an existing request, go to the "File" menu. The File and Subdirectory names must be 8 characters or less, and cannot contain spaces. If you don't name your file, it will be titled "noname" by default and can be found in the CensusCD subdirectory for each specific product. You can change the directory by selecting "Save Request As" and then changing either the File and/or the Subdirectory names. Once you name your request file it is automatically saved.
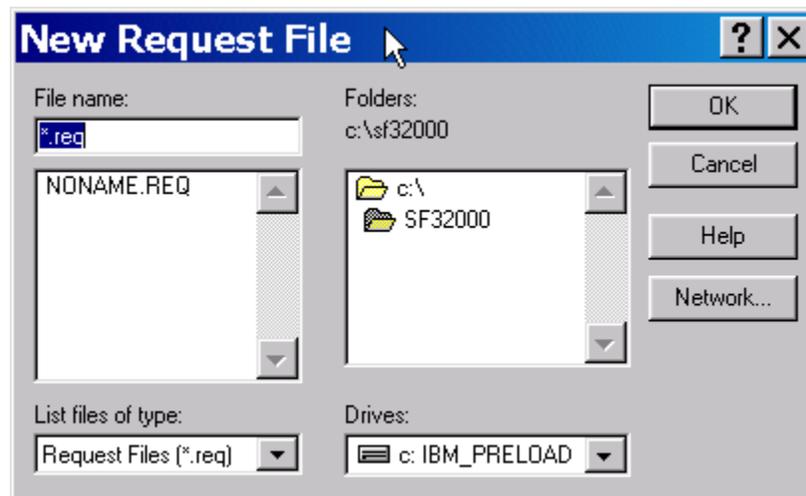
The request file controls the directory where the output files will be written (including reports, dBase files, or maps). Changing the drive or directory of the request file will control where the file is produced. Output files will have the same name as the request file with a different extension. For example, if the request file name is changed to "a:myfile.req", then the file can be written as "a:myfile.rpt" (a Summary Report), "a:myfile.csv" (ASCII), or "a:myfile.dbf" (dBase).

New Request	Creates a new request; allows you to select the geographies and variables from the start
Open Request	Opens existing saved requests
Save Request	Saves current request parameters giving it the same name and path
Save Request As	Used to start a new series of files and controls the path/name of subsequent files

Note: A request tells CensusCD the information you want and how you want it. The request file stores the information about the Area, Subarea, and Counts, which is passed to the database to produce a file.

5. <u>Run a Report</u> – Now that you have selected your area, subarea, and counts (variables), you are ready to run a report. Go to "Run" and select the type of report that you want. These options may include Summary, DBase, ASCII, or Map. There is also an "All Counts" and a "Snapshot" option. However, please note that running the All Counts report creates a very large file and you do not want to print all the counts that are available, as you will have an enormous print job. You can use the report you create as an input into other systems, such as (SAS, SPSS), database (Access, Oracle), spreadsheet (Excel, 1-2-3), or mapping (ArcGIS, MapInfo).

a. Summary – a total for the area (without listing subarea numbers) for the counts selected. This report is a good idea to run as a quick check of population sums. This is also an easy way to get a list of the variable code and the full descriptive name of the variable. This is very useful for adding labels to an excel spreadsheet or statistical program.
b. Dbf – a dBase compatible data table with a .dbf extension that can be easily imported into statistical and spreadsheet programs. Each variable will be a column and each subarea will be a row.
c. ASCII – a file with .txt or .csv extensions that can be easily imported into statistical and spreadsheet packages. It is available in tab or comma delimited format with or without headers. Like the dbf file, each row is the subarea and each column is an individual count.

d. Map – viewed in our internal map viewer. You can manipulate and alter the map. Polygons can be exported as either shape or mid/mif files and will have an accompanying .dbf file under the same name. You can import these files into ArcGIS, MapInfo, and other mapping software packages. See Section F of the User Guide.

e. Snapshot/All Counts – these two reports give a pre-set count selection. The Snapshot (4 page report) gives a basic look at the overall demographics of the area. Percentages are included for many of the counts (variables). The All Counts report will be several hundred pages – listing <u>ALL</u> variables available on the disk.

Your output file can be found under the subdirectory and file name that you selected when named the request file. If you did not name the request file, then your output file will be found under the subdirectory you installed the CensusCD product on, with the file name of "noname.req".

The directory and subdirectory with the name of the file are at the **top of the page**. In the example below the report will be on the "C" drive in the folder (subdirectory) "SF32000" and the file will be titled "noname".

In addition to the output file you requested, there will also be a .doc file created that will have the full name of the variables and geographies that you selected.

A file is run in a multi-tasking mode so that you can go on selecting other files, or doing other tasks, while the system accesses the CensusCD database for the information you want. When the file is finished being compiled, a viewer or map window will open and you can view your file. You can view any file using CensusCD viewer. While browsing the file, you can search for information, copy to clipboard, or print the file.

Recommendation: it is a good idea to run a Summary Report when you are reviewing your data. The Summary Report will give you the variable codes and definitions, as well as the sums of your selected variables. You can print out the Summary Report and use it as a label key when reviewing your data. After running a Summary Report, rerun the report request again in your preferred output mode (dbf, ascii, map, etc.).

D. Search Counts (Variables)

Searching for Counts (Variables) – Using the "Search" function is the easiest way to find variables instead of manually scrolling through all of the tables. The search function looks through counts and returns a list that matches the search word (or part of a word) that you entered. For example, to find counts of "disability" or "disabled", you can search for the fragment "disab"

and it will bring up a list of counts that include this fragment string. You can then select any of the variables that are found and "Add" them to your counts.

E. Saving Your Data

Saving your report is automatically done for you. Your output file can be found under the subdirectory and file name that you selected when you named the request file. If you didn't save the request file, then your output file is found under the subdirectory you installed the CensusCD Product on with the file name "noname". There will also be a .doc file with the same name as your report that has the full names of each of the counts (variables) and geographies that you selected for your report. This can be helpful for labeling spreadsheet columns.

F. Using the Map Viewer

When you create a map with a CensusCD product, you can use the map viewer to view and change data themes, ranges, and color schemes. The map viewer allows you to print your map
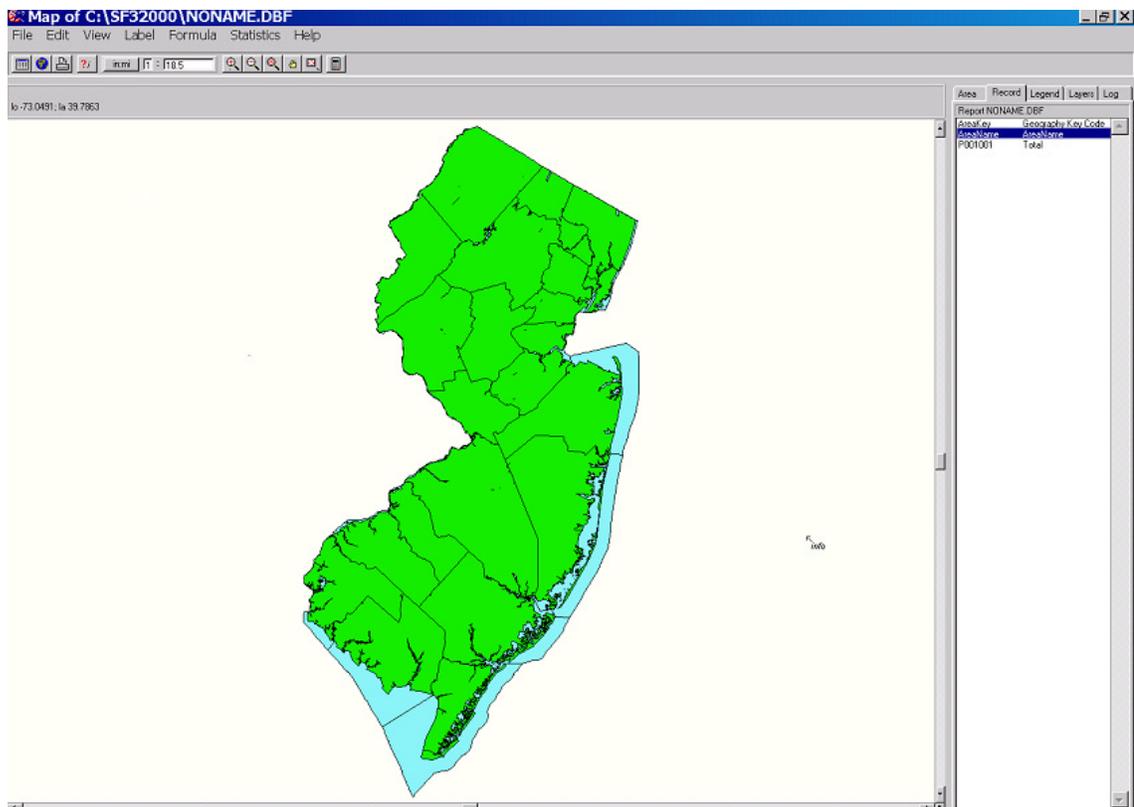
as well as export boundaries and data in desktop mapping formats (ArcGIS or MapInfo).

To print it use the icon of the printer at the top of the page or pull down the "File" menu and select print. To export ArcGIS / ArcView shape files or MapInfo mid/mif files, go to "File" at the top left-hand of the menu and select "Export", then select "ArcView's Shape" or "MapInfo's MIF".

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Your exported shape file or mid/mif file will be located in the subdirectory where you installed the CensusCD product, along with the associated dbf file.

To save the map as a bitmap (.bmp) file, which can be imported or pasted into most word processing, spreadsheet, and graphics software packages, go to the "File" and select "Save as Bitmap".

The map viewer also provides a variable calculator for creating and displaying virtual variables based on the data in your file. So you can do mapping analysis with a CensusCD product if you do not already have a mapping software package. These calculated fields are held in a temp file but cannot be exported. **Recommendation: take a bitmap image of the map so that you can capture the image.**

Creating a map automatically generates a dBase file, which can be exported to use with other software including statistical (SAS, SPASS), database (Access, Oracle), and spreadsheet (Excel, 1-2-3). A specific help section for the map viewer is available from the main help contents and in the map viewer itself.

To change the scale of the map you can either use the icons at the top, which are magnifying glasses with the "+" and "-" in them to make it bigger or smaller. There is also a scale that shows the ratio of inches: miles. You can change this ratio to enlarge or decrease the size of the map.

There are lots of ways to manipulate the map that you are looking at. On the side of the map is a series of tabs (Area, Record, Legend, Layers, Log).
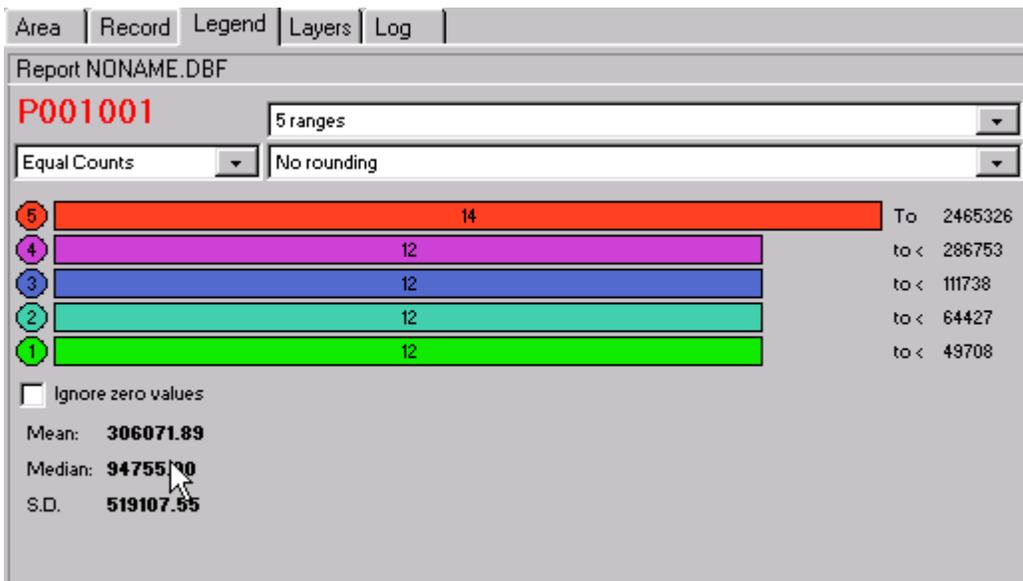
1) Area – Lists each area that is mapped. If you click on an area listed here it will hash out the appropriate location on the map.
2) Record – Lists the counts in a file, change the count being mapped by clicking on a different count. If you left click on a variable in this list you can select it to use as a label.

3) Legend – Choose the ranges and colors for your map. It also shows the mean, median, and standard deviation (see above). With this tab you can make the following changes:
   a. Ranges – instead of having your data broken into 5 ranges you can pull down the arrow at 5 Ranges and increase or decrease the number.
   b. Equal Counts – each range will have the same number of occurrences in the range. You can change this to Equal Range. The vales of each range will be the same from 0 to the top number, above this would be 2,465,326 so instead of getting 12 tracts in each range the ranges would be divided into 5 groups 0-493,065, then 493,066-986,130 etc. You can also customize the ranges. So for example if you wanted to see 0-15, then 16-22, then 23-54 you could change them. Select Custom from the pull-down arrow. Then click on the number after to lowest "to <" in the example above it is 49708. Instead type in the 15. Then go up to the next number above it and type in 22, etc.
   c. Change the colors of the ranges. If you click on the colored circle to the left of the bar a window will open with a palette of colors to choose from.
4) Layers – Control the border thickness and color, add labels, and add internal or external boundary map:
   a. Add a layer – click on the blue "+" at the top of the tab. A window will open over the map with the geographies that are available to be layered over your map. Select the appropriate one and click ok. A status bar will spin and then you will have the new layer over your existing map.
   b. Change the thickness of the new layer – sometimes when you add a layer it is hard to see the boundaries, so you can increase the thickness for better viewing. At the bottom of this tab is a section titled "Properties of Layer 1". There is a box labeled "Thick" with a default 1. Change it to a 2 or 3 for a thicker line. You can also change the color from the default black to another color for the boundary lines of this new layer (though black is usually the easiest to see).
   c. Add labels to the map – in the "Properties" section. Click on the "open book" icon that is labeled "More". This will open a window with the options for the labels. You can select the "Style", "Frequency (always, never, when it fits)" and "Font"
5) Log – Records what has been mapped and how long it took to run.

G. Frequently Asked Questions

Why isn't my CensusCD working?!!??
First, take a deep breath. Read the bottom left-hand line on the screen in blue, it will often prompt you for the steps that are missing from your report request.   If it says you can now run a report then check: did you install the software with the correct serial number? Did you install the software into a directory and/or subdirectory with 8 characters or less (if unsure, try reinstalling and using the default settings)? Is the correct disk in the computer when you try to run a report?

How do I save a report that I just ran?
When you run a report it is automatically saved to your computer. When you save your request you name the file and set the path. If you don't save your request, it is given the default name of "Noname" and it's path defaults to the directory and subdirectory where you installed your CensusCD product.

How do I find a report that I just ran?
When you save your request you name the file and set the path. If you don't save your request, it is given the default name of "noname" and it's path defaults to the path that you installed the program under. The list of default path names is at the end of this section. Additionally, the path name is recorded in the blue bar along the top of your screen.

What are the real names of the variables (counts) I selected?
When you run a report an additional file is created called "filename.doc" and it has the same path as the file you ran. When you open this (in Word) it tells you the conditions you selected for your report. The area and all of the variable names are listed. The variables list their code as well as the full descriptive name. Another option that works particularly well with the 2000 Long Form is to run a Summary Report, which will give you the full census name for each variable.

How do I select a gray scale for my map?
When you are looking at a map on the screen and you want to change it to a gray scale, simply go to "View" (one of the choices along the top bar) and using the drop down menu select gray scale. To have the image revert back to multi-color, go to View and un-select gray scale.

How do I change the colors of the map?
When looking at the map, to the right is a column heading with 5 tabs (area, record, legend, layers, log). Select the Legend tab. You will then see the ranges and the color bars. If you select the colored circle next to each range and click on it a palette with lots of color choices will appear, make your selection and click OK. To save the map with these colors go to Statistics and select Save Colors.

How do I change the number of ranges of my data shown on the map?
When looking at the map, to the right is a column heading with 5 tabs (area, record, legend, layers, log). Select the Legend tab. You will then see 3 fields: 5 ranges, equal ranges, and no rounding. Select 5 ranges. This will have a pull down menu where you can select the number of ranges that you want to see your data broken into. Your map will be updated instantly.

How do I find the mean, median and standard deviation of my data?
When looking at the map, to the right is a column heading with 5 tabs (area, record, legend, layers, log). Select the Legend tab. You will then see ranges in colored bars, under that are the mean, median and standard deviation.

How do I label the different areas on my map?
When looking at the map, to the right is a column heading with 5 tabs (area, record, legend, layers, log). Select the Layers tab. The bottom line has 2 colored squares (color and borderclr) between them is an icon that looks like a book and is labeled "More". Select More. A new window will pop up and you can then select the second field. It defaults to Never (show labels). If you select "When Possible" it will label only those areas that are not too close to each other so that you can see the label easily. If you select "Every Object" it will label all areas regardless of whether the labels are superimposed upon each other.

How do I add layers on the map viewer?
When looking at the map, to the right is a column heading with 5 tabs (area, record, legend, layers, log). Select the Layers tab. Click on the "+" sign under the tabs. This will bring up the "Add a new Layer…" box. Here you can click on the layer you wish to add. For example, you have tract level data selected as the subarea and want to overlay the counties as a layer. After you add a layer, you can highlight the layer and change the thickness from "1" to a "2" or "3". This will add more contrast and definition to your new layer, making it easier for viewing.

Looking at the map, how do I tell which variable is which?
There are two ways to do this.

Either you can open Word and go to the document that is affiliated with the map that you just produced and print it out. This will indicate which variables are included in the correct order.

Alternatively, the name of the variables is listed to the right of the map (under the 5 tabs) under "Record". If you can't see the whole name you can move the map viewer screen. If you place your cursor on the column between the map and the column with the counts names you will get the parallel lines sign and you can then drag the column bar over. This will give more screen space to the counts names. However, it will also make your map smaller.

If you are using the CensusCD Product:	The default subdirectory is:
2000 Long Form	SF32000
2000 Short Form	SF12000
2000 Short Form Blocks	SF1Block
2000 Redistricting	CCD2000
2000 Redistricting Blocks	Blk2000
1990 Long Form	CCD1990
1990 Blocks	CCDBlock
1990 Long Form in 2000 Boundaries	CCD9000
1980 Long and Short Form	CCD1980
1970 Long Form	CCD1970
Estimates and Projections (EPCE)	CCDEPCE

H. Help

CensusCD Products contain a help section included in the software package. From the main menu, select "Help" then select "Contents". Also on the bottom bar of your screen (in blue) you will receive automatic advice for "next step" prompting

CensusCD Products also have extensive on-line help, which contains additional information about selecting, mapping, and exporting data and boundaries. Documentation is provided by the creators of the data complied in the CensusCD Products. A specific help section to explain the map viewer is available from the main help contents and in the map viewer itself.

Additionally, if you would like the complete list of variables available for any product, check out our website at http://www.geolytics.com/.

I. Contacting Geolytics, Inc.

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