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ArcView 2.1 and Bureau of the Census Data Sets

John S. Walters, Utah State University
Logan, UT

Using ArcView 2.1, produced by Environmental Systems Research Institute (ESRI), in conjunction with Extract, a free software program produced by the Bureau of the Census (BOC), users are now able to access and manipulate BOC data sets and represent them as thematic maps or reports.

Software

ArcView is a desktop Geographical Information System (GIS) that allows users to readily extract and manipulate dBase data sets directly from the Census CD-ROMs in preparation to joining the data with an associated thematic map. ArcView requires a minimum 486 processor and at least 16 MB RAM. The approximate cost of ArcView is \$800.00.

Extract enables easy and rapid location of data sets available on most Census Bureau CD-ROMs. Designed to run on a DOS platform, Extract works with any IBM-compatible PC (386 or later) with a minimum of RAM (425kb). Extract is available from the 1992 Economic Census CD-ROMs, several of the other census discs, or via the World Wide Web at the following URL: <http://www.census.gov/ftp/pub/epcd/www/extract.html>.

Example

Create a map showing the percent of households that have income less than \$10,000 per year and another map showing percent households with income greater than \$100,000, both by USA Counties.

1. Use Extract to identify appropriate files and fields using the Census Bureau's STF 3C disc.

1990 Census of Population and Housing STF 3C Disc

File Fields Description

301 p0050001 Total Households (the denominator when calculating the percent)

314 p0800001 Households with income **less than** \$5,000

" p0800002 Households with income greater than \$5,000 and **less than** \$10,000

" p0800023 Households with income greater than \$100,000 and **less than** \$124,999

" p0800024 Households with income greater than \$125,000 and **less than** \$149,999

" p0800025 Households with income greater than \$150,000 and more

2. Use ArcView to pull the identified files and fields from the Census CD-ROM.

3. Once in ArcView, the identified files (301 and 314) need to be modified to limit them to only the data files necessary for creating our specific map (household income). Fortunately, we can use the ArcView Table menu and choose Properties to select only the fields we need, in this case:

- *Sumlev* (field which assigns all county level data with a sumlev of 50);
- *Statefp* and *Cnty* (*fips* code needed to join our census data with the mapping data)
- *Household Fields* that we previously identified (p08...).

Next, we need to *query* the table and eliminate data we are not interested in. We do this by setting up a query that asks for data sets for the county level only, *sumlev=50*. Once this is done, we can export the table. We follow these steps until we have all our tables trimmed to just the information we need.

4. Next, we open the newly modified tables in ArcView for further editing. Specifically, we need to create a new field called *fips* that is simply the *statefp* and *cnty* fields combined (*fips=statefp+cnty*). The *fips* field is necessary since this will be our common field between the BOC data and the ArcView's thematic map tables. Following this, we combine the data sets for relevant household income levels. Using the Calculate menu option we can now create a new field showing the percent of households with the required income levels: **pct_hsllds_inc** = (hsllds_inc<10,000 \ tot_hsllds) * 100

5. Using ArcView, open the map, or *View*, showing the USA Counties and then open its associated table. Selecting the *fips* field, that is now common to both tables, we can join the two tables.

6. Once joined, we select the window box "View I," double-click on the legend, select the box with the drop-down menu labeled Field. Locate the field **pct_hsllds_inc** which can now be mapped. We can choose one of three different classification schemes, Quantile, Equal Interval, or Unique Interval. We can then choose varying colors from the color palette and finally draw our final map.