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Census Geographic Data Initiative

Census Enumeration Districts

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The Census Geographic Data Initiative is a project of the University of Connecticut Center for Geographic Information and Analysis. The UCCGIA was founded in 1997 with support from the Homer Babbidge Library, the Department of Geography, and the College of Liberal Arts and Sciences. The mission of the Center is to advance the use of geographic data and spatial analytic techniques in research, teaching, and service at the University of Connecticut and in the region it serves.
The purpose of the UCCGIA’s Census Geographic Data Initiative is threefold:

First, we want to increase understanding and use of U.S. Census geographic data in the University community and in the state.

Second, we are in the process of designing and creating a digital geographic database of Connecticut census geography for each decennial census from 1790 to 2000.

Third, we are working with colleagues in the Library’s Information Technology section to develop search and discovery tools that will use this database to find information.
This is the last of four workshops. The first workshop covered the reporting units of the 2000 census. The second showed you how to navigate the census web site to acquire geographic data. The third overviewed the census geography items in the Homer Babbidge Collection. Today’s workshop focuses on the collection geography of the Census.
The purpose of this presentation is to provide an historical overview of the census itself, the procedures used to collect census data, and geographic units involved in the collection of the census over time.

The presentation again uses almost exclusively examples from Connecticut.
Historical Background

Constitution, Article 1, Section 2

“Representatives and direct taxes shall be apportioned among the several States which may be included within this Union according to their respective numbers …”

The mandate for conducting the U.S. Census is Article 1, section 2 of the Constitution.

Representation in the new Congress was to be apportioned among the states based on the respective populations of the states. This meant that the population of each state needed to be determined.
An ACT providing for the enumeration of the inhabitants of the United States was passed on March 1, 1790.

This act outlined who would conduct the first census and how they would conduct it. It went beyond the mandate of the constitution to be more than a simple tabulation of total population within each state. The first census was to record the name of every head of family and a crude age/sex breakdown, and the separate counting of free persons and slaves.

The latter distinction was necessary because of the “3/5’s compromise” in which slaves counted as 3/5 of free persons for enumerating the population of each state for purpose of its congressional apportionment.

Excluded from enumeration were “Indians not taxed”.

“… the marshals of the several districts of the United States shall be … required to cause the number of the inhabitants within their districts to be taken … the marshals shall have the power to appoint as many assistants within their districts as to them shall appear necessary; assigning to each assistant a certain division of his district, which division shall consist of one or more counties, cities, towns, townships, hundreds or parishes, or of a territory plainly and distinctly bounded by water courses, mountains, or public roads …”
Consequences of the Act

• Census conducted by Marshals of federal districts

• Assistants to Marshals have the responsibility for enumerating the population

• Each District subdivided into geographic Divisions (later called Subdivisions) assigned to each Assistant.

There were numerous consequences of this act for how a census would be conducted. First, U.S. Marshals of the Federal Judiciary Courts were given the charge for conducting the census. Early census taking was a temporary job assigned to existing federal employees.

Second, the Marshals would hire Assistants who would actually collect the census data. These Assistants were the first census enumerators.

Each federal district would be subdivided into smaller geographic units assigned to each Assistant. Initially these units were called Divisions of the District, This was the first collection geography for the census.
The recording of the head of each family meant that census records would later become a database for genealogists. The first crude description of individuals within a family meant that the census would collect attribute information regarding the population.

The name of each head of family recorded and individuals within the family described

• Tabulation by place of residence
• Both citizens and aliens counted

Very importantly, the census was to be a tabulation of everyone who resided in a place. It did not matter whether the individual was a citizen of the United States or not. The 1790 and 1800 censuses did not have a question about citizenship. It was to be a total enumeration. Only Indians not taxed were excluded from the tabulation. This is still true today. Illegal as well as legal immigrants are counted in our census. The Supreme Court has ruled against challenges to this principle and would probably require an amendment to the Constitution for this to change.
Over time the census expanded in scope and changed organizationally. US Marshals retained authority for the collection of the census until 1880 when a Census Office was created in the Department of the Interior.

1880 was also the year in which the description Census Enumerators was used for the individuals who collected the data and Census Districts for the area that they covered.

The Census Bureau today is part of the Department of Commerce after residing in other Departments.
Another important characteristic of how our census is conducted is that it is a cross-sectional enumeration of the population. In a cross-sectional dataset, data are recorded for an individual for a “snapshot” in time. This is in contrast to a longitudinal dataset, which records data for an individual over time. Longitudinal data usually take the form of a registry.

The decennial census takes a snapshot of our population once every ten years.

For the early censuses the snapshot was taken for the first Monday in the month of August. For most of the nineteenth century it was June 1 and since 1930 it has been April 1.
Change in Data Collection Methods

- 1790 – 1950: Enumerators go door-to-door
- 1940: First use of statistical methods and sample
- 1960: First use of the mail to collect returns and film optical scanning device for computer tabulation
- 1970: First mail out of optical scanning forms and use of Address Coding Guides for metropolitan areas
- 1980: Creation and use of GBF/DIME files
- 1990: Creation and use of TIGER file
- 2010: American Community Survey replaces long form

The mechanics of how the data were collected have also changed over time. From 1790 until 1950, enumerators went door-to-door to collect information on individuals at each residence.

The first “modern” census was in 1940 for which data were collected for a sample of the population regarding more detailed information. “Short form” information was collected for 100% of the families and “long form” information was collected for a 25% sample of the families.

In 1960, the post office dropped a short form questionnaire at every residence. The census enumerator then visited every residence and transcribed the completed short forms to a special form that could be read by an optical scanning device. The enumerator also brought a long form to be filled out at every fourth house.

1970 was the first mailout-mailback system used in metropolitan areas representing about 60% of residences. The 1960 methods were used in the other parts of the country. Address Coding guides were compiled by the Census Bureau to enable the returns to be assigned to census reporting units.

In 1980, GBF/DIME files were created that not only associated addresses with census reporting units but also enabled the geographic coordinate to be assigned to each address. TIGER expanded and improved GBF/DIME files.

The next census will no longer have long forms. They have been replaced by the American Community Survey.
There are several levels of geography associated with the collection of census data. At the lowest level is the individual family or dwelling house. Data collected at this level are strictly confidential, although these data are released 72 years after the census was taken.

A Manuscript Census is the federal population census returns that enumerate every person or head of family. Because multiple families and houses would be recorded on the same form, a single manuscript census sheet is an aggregation of families and houses. Until the 1960 census, enumerators used blank sheets on which they recorded the family information.

A Collection Block is a physical block enumerated as a single geographic area, regardless of any legal or statistical boundaries passing through it except for state boundaries.

An Enumeration District consists of the collection blocks or geographic area covered by a single enumerator. Since 1970, this is more for quality control than for direct collection of data. Until 1890 the name of the enumerator was listed for each enumeration district.
Manuscript Census Schedules

No standard form used to conduct the first census in 1790

The early censuses were recorded on informal forms kept in notebooks or ledgers. Each sheet would be a page of names.

The order of sheets was geographical from the beginning of the Census.

These historic documents are preserved by the National Archives and Records Administration (NARA). The 1790 through 1930 manuscript census collections are on microfilm. The microfilm collection for Connecticut is located on Level 3 of the Homer Babbidge Library in the United States Bureau of the Census section. The original documents are released 72 years after the Census. The 1930 schedules were released in 2002 and the 1940 schedules should be released in 2012 (hopefully not in microfilm format).
The first standard form issued by the federal government was for the fifth census of 1830. However individual states provided their own forms for earlier censuses. Connecticut had forms for aggregated schedules after the 1800 census.
Manuscript Census Sheets

Enumerators usually wrote town names on the early schedules.

The only geographic information that was consistent for the first federal census of Connecticut was the county. Most enumerators usually wrote the town names on the early sheets but the enumerator for New London County did not list any town names. Also in Litchfield County the sheets for many Litchfield County towns were listed under Litchfield town. In 1800 and later censuses, town names appeared on their appropriate sheets.
Connecticut's 2000 Census Geography

Manuscript Census Schedules

1830 form had a column for the town and county name such as the Town of Monroe in the County of Fairfield.
Over time, the standard form provided space for recording geographic data in the header of the form.
Over time, geographic information was added also to the variables collected. In 1850, there was a column entitled “Dwelling houses numbered in the order of visitation”. This was not an address but it enabled an association between families and dwelling houses. By 1880 columns for recording street addresses in cities were added.
Manuscript Census Schedules

In 20th century, address information collected for rural and urban areas

By 1920, address information was also collected in rural areas. Until, the 1960 census, the space for the address was blank and the enumerator filled in the information as the visits were made. After 1960, the address was used to mail the questionnaires to the residents.
Name Indexes

1790 sheets printed and in Ref. F 93 J33 1978 and available online at http://www2.census.gov/prod2/decennial/documents/1790b-01.pdf

Because these sheets are a major reference source for genealogists, a number of censuses have been transcribed and a name index provided.

The 1790 guide is the only one that has the names organized in close to original form by geography as well as an index that is alphabetical.

The 1790 guide also includes the names of the assistants who compiled the enumeration.

Organizations such as Ancestry.com have also converted all of the microfilm records into a digital format which can be accessed online.
The name indexes for Censuses after 1790 only give an alphabetical listing of names.

For each name the indexes also provide the county of residence and the page number on the microfilm. Except for 1800, the indexes also provide the name of the town in which each person resided.
Until 1990, enumerators collected data on a block by block basis. Starting in 1920, instructions were given to enumerators to make their visits on a block by block basis rather than from one side of a street to the other side of the street. Interest grew in using blocks as the foundation for both collecting and reporting the census. The 1990 census ended the practice of collecting on a block by block basis as the entire country was enumerated by mail.

Today a census block itself is a geographic area bounded by visible and/or invisible features. Collection blocks may be split by the boundary of any legal or statistical entity recognized by the Census Bureau as seen in the figure. However, a tabulation block used in reporting the census cannot be split by the boundary of any legal or statistical entity. Therefore, if a collection block is split, each part will be a different tabulation block; if a collection block is not split, the same area may be a tabulation block. Collection block numbers are available only in the TIGER/Line data products.
The enumeration district was traditionally the geographic area canvassed by a single enumerator. As mentioned before, it is the basic organizational unit for the organization of the collection of the census and the order of manuscript census sheets on microfilm.

Over time the terminology has changed as divisions became subdivisions which became enumeration districts which since 1990 are known as Address Register Areas.
In the early censuses the territory of an enumerator roughly corresponded to a county. In 1790 there were more divisions than counties as both Fairfield County and Litchfield County were subdivided. In 1800 there were only 8. Notice in these maps, however, the number of towns, the town boundaries and the county boundaries are not the same as they are today. In 1790 there were 104 towns and in 1800 there were 109 towns. Hartland and Southbury changed counties between 1790 and 1800.
<table>
<thead>
<tr>
<th>Year</th>
<th>Enumerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1810</td>
<td>24 divisions</td>
</tr>
<tr>
<td>1820</td>
<td>39 divisions</td>
</tr>
<tr>
<td>1830</td>
<td>23 divisions</td>
</tr>
<tr>
<td>1840</td>
<td>38 divisions</td>
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<tr>
<td>1850</td>
<td>38 subdivisions</td>
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<tr>
<td>1860</td>
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</tr>
<tr>
<td>1870</td>
<td>98 subdivisions</td>
</tr>
<tr>
<td>1880</td>
<td>not calculated</td>
</tr>
<tr>
<td>1890</td>
<td>397 EDs</td>
</tr>
<tr>
<td>1900</td>
<td>549 EDs</td>
</tr>
<tr>
<td>1910</td>
<td>609 EDs</td>
</tr>
<tr>
<td>1920</td>
<td>870 EDs</td>
</tr>
<tr>
<td>1930</td>
<td>976 EDs</td>
</tr>
<tr>
<td>1940</td>
<td>1,680 EDs</td>
</tr>
<tr>
<td>1950</td>
<td>2,636 EDs</td>
</tr>
</tbody>
</table>

Over time as the population increased and became more dense, the area associated with each ED became smaller. Also over time, the recommended population size for an ED was reduced.

For Connecticut from 1790 to 1850, all EDs were primarily aggregations of towns. On occasion an ED covered only part of a town. In 1810, the City of New Haven was a separate division on its own. In the same census, the City of Middletown was in a separate division from the portion of Middletown that was outside the city limits. In 1820 the City of Hartford was in a different division from the rest of Hartford town. In 1860 the Borough of Litchfield was separate from the remainder of the town and the Newington Society was separate from the remainder of the Town of Wethersfield. After 1860 there were more and more subdivisions of towns that became EDs of their own. By 1950 Hartford had 302 EDs of its own.
Descriptions of Enumeration Districts

• 1790-1930: Manuscript Census Schedules
• 1830-1950: NARA Microfilm series T1224
• Since 1880: Census Maps

For Censuses prior to 1830, the only method for determining the geographic extent of an enumeration district is examining the microfilm of the Manuscript Census schedules. There are different pieces of information contained in this microfilm besides the town names written on different pages.
The assistants were also required by law to give sworn affidavits regarding the validity of their enumerations. These affidavits often contained a list of the towns in their division such as the towns of Monroe, Bridgeport, Weston, and Fairfield in this 1830 division.
Almost always there are also division summaries of the population by town. These summaries follow the individual schedules for the last town in a division.
ED boundaries could be determined from the Manuscript Census sheets until 1930 but it would be an exhaustive quest after 1900. NARA also provides a text description of the ED extents in the T1224 microfilm series. The text description for 1830 is not very helpful as it contains the county and the number of towns but not a list of the town names. The 1880 ED descriptions for Connecticut are not part of that series. These two censuses can only be determined from the Manuscript census schedules. The 1920 descriptions in cities like Hartford are below the Ward level consisting of just several blocks.
Maps of their canvas areas were first given to enumerators in 1880. By 1890, enumeration district maps were prepared for the entire country. Most of these early maps have been lost. More complete sets of ED maps start with the 1930 series. Bill Miller reported on the ED maps located in the map library in the last workshop.

NARA has the full set of 1930 ED maps on microfilm series M1930. Connecticut is on roll 5 of that series.
In 1990 the collection procedures changed as data were collected more through the mail out-mail back system. The enumeration district was renamed an Address Register Area. Enumerators still went into the field but it was more for special populations, quality control and newly constructed housing. An Address Register Area is the size of a block group or part of a block group that is assigned to a single enumerator.

The change occurred because of the conceptual restructuring of how the census is conducted. Whereas addresses were once secondary information collected by enumerators as they physically walked the landscape, addresses are now the mechanism that drives the collection of census data.

For 2000, the census created the Master Address file (MAF) which is geocoded and linked to the TIGER database. The master Address File is a compilation of all individual living quarters in the United States. It is an outgrowth of the 1990 Address Control File (ACF) used for mail out and quality control in that census and the US Postal Services Delivery Sequence File. The MAF is also the sampling frame for the American Community Survey.

A permanent database is maintained now by the census of all addresses in the country. For the 2000 census the name was changed again to an Assignment Area.
Workshop Materials On-line

- Workshop Presentations and Handouts in .pdf format
- Center’s Digital Commons site
  http://digitalcommons.uconn.edu/uccgia/

This concludes our workshop series on the geography of the US Census.

Copies of all workshop presentations and handouts are available after the workshop presentation at the Library’s Digital Commons site under the Center for Geographic Information and Analysis and MAGIC user community listing in the Connecticut Census Geography Initiative series.

Thank you for participating.