

Supplemental Geography for ACS Microdata from IPUMS

Jonathan Schroeder
jps@umn.edu

MPC



UNIVERSITY OF MINNESOTA

IPUMS.ORG

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Historical and contemporary time use data from 1965 to the present.



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Survey data on the science and engineering workforce in the U.S. from 1993 to the present.

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CALENDAR

APRIL 27, 2017

Population Association of America
Hilton Chicago

JUNE 25-27, 2017

Academy Health
Hyatt Regency, New Orleans, LA

JULY 16-21, 2017

61st ISI World Statistics Congress



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U.S. GEOGRAPHIC SUMMARY DATA AND BOUNDARY FILES

The National Historical Geographic Information System (NHGIS) provides population, housing, agricultural, and economic data, along with GIS-compatible boundary files, for geographic units in the United States from 1790 to the present.

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WHAT IS IPUMS?

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IPUMS NHGIS NEWS

[NEW ARTICLE ON NHGIS STANDARDIZED TIME SERIES](#) | [2011-2015 ACS 5-YEAR SUMMARY FILE & 2015 BOUNDARY FILES NOW AVAILABLE](#) | [2015 ACS 1-YEAR SUMMARY FILE NOW AVAILABLE](#) | [MORE NEWS...](#)

IPUMS PROJECTS

Summary data

Table

nhgis0214_ds82_1950_tract.csv

	GISJOIN	YEAR	STATE	STATEA	COUNTY	COUNTYA	PRETRACTA	TRACTA	POSTTRACTA	AREANAME	BZ8001
	G240510000084	1950	Maryland	24	Baltimore Ci	510	<Null>	0008	4	STCTY-24510 TRACT- 0008-4 IN BALTIMORE MD	4124
	G240510000085	1950	Maryland	24	Baltimore Ci	510	<Null>	0008	5	STCTY-24510 TRACT- 0008-5 IN BALTIMORE MD	6037
	G240510000086	1950	Maryland	24	Baltimore Ci	510	<Null>	0008	6	STCTY-24510 TRACT- 0008-6 IN BALTIMORE MD	6461
	G240510000087	1950	Maryland	24	Baltimore Ci	510	<Null>	0008	7	STCTY-24510 TRACT- 0008-7 IN BALTIMORE MD	8430
	G240510000091	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	1	STCTY-24510 TRACT- 0009-1 IN BALTIMORE MD	5627
	G240510000092	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	2	STCTY-24510 TRACT- 0009-2 IN BALTIMORE MD	2958
	G240510000093	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	3	STCTY-24510 TRACT- 0009-3 IN BALTIMORE MD	5268
	G240510000094	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	4	STCTY-24510 TRACT- 0009-4 IN BALTIMORE MD	3095
	G240510000095	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	5	STCTY-24510 TRACT- 0009-5 IN BALTIMORE MD	2954
	G240510000096	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	6	STCTY-24510 TRACT- 0009-6 IN BALTIMORE MD	5205
	G240510000097	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	7	STCTY-24510 TRACT- 0009-7 IN BALTIMORE MD	4794
	G240510000098	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	8	STCTY-24510 TRACT- 0009-8 IN BALTIMORE MD	7425
	G240510000099	1950	Maryland	24	Baltimore Ci	510	<Null>	0009	9	STCTY-24510 TRACT- 0009-9 IN BALTIMORE MD	7768
	G240510000101	1950	Maryland	24	Baltimore Ci	510	<Null>	0010	1	STCTY-24510 TRACT- 0010-1 IN BALTIMORE MD	9376
	G240510000102	1950	Maryland	24	Baltimore Ci	510	<Null>	0010	2	STCTY-24510 TRACT- 0010-2 IN BALTIMORE MD	7987
	G240510000103	1950	Maryland	24	Baltimore Ci	510	<Null>	0010	3	STCTY-24510 TRACT- 0010-3 IN BALTIMORE MD	2441
	G240510000111	1950	Maryland	24	Baltimore Ci	510	<Null>	0011	1	STCTY-24510 TRACT- 0011-1 IN BALTIMORE MD	3194
	G240510000112	1950	Maryland	24	Baltimore Ci	510	<Null>	0011	2	STCTY-24510 TRACT- 0011-2 IN BALTIMORE MD	6651
	G240510000113	1950	Maryland	24	Baltimore Ci	510	<Null>	0011	3	STCTY-24510 TRACT- 0011-3 IN BALTIMORE MD	3396
	G240510000114	1950	Maryland	24	Baltimore Ci	510	<Null>	0011	4	STCTY-24510 TRACT- 0011-4 IN BALTIMORE MD	8129
	G240510000121	1950	Maryland	24	Baltimore Ci	510	<Null>	0012	1	STCTY-24510 TRACT- 0012-1 IN BALTIMORE MD	3495
	G240510000122	1950	Maryland	24	Baltimore Ci	510	<Null>	0012	2	STCTY-24510 TRACT- 0012-2 IN BALTIMORE MD	7746
	G240510000123	1950	Maryland	24	Baltimore Ci	510	<Null>	0012	3	STCTY-24510 TRACT- 0012-3 IN BALTIMORE MD	5965
	G240510000124	1950	Maryland	24	Baltimore Ci	510	<Null>	0012	4	STCTY-24510 TRACT- 0012-4 IN BALTIMORE MD	5840
	G240510000125	1950	Maryland	24	Baltimore Ci	510	<Null>	0012	5	STCTY-24510 TRACT- 0012-5 IN BALTIMORE MD	6813

1 (0 out of *4000 Selected)

nhgis0214_ds82_1950_tract.csv



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IPUMS-USA DATA UPDATES

Microdata

Relation
to head

Marital
status

Education

Occupation

0000980001001002	1000	0791	220	2208021	120	390099900	990	000000001
0000980001002001	2000	0642	220	2208022	120	310099900	990	000000002
0000980001003000	4100	0231	100	2208022	120	100083200	269	000001202
0000980001004000	4100	0132	100	2208012	120	330099900	990	000000002
0000988001001002	1000	0351	210	2208022	311	230072300	527	000000302
0000988001002001	2000	0412	210	2208022	120	310099900	990	000000002
0000988001003000	3000	0172	100	2208022	212	230099800	990	000000002
0000988001004000	3000	0162	100	2208022	212	310099900	990	000000002
0000988001005006	4910	0192	210	2208022	212	310099900	990	000000002
0000988001006005	4910	0271	210	2208022	312	100012200	011	000009602
0000988001007000	4100	0002	100	2208000	000	000099900	990	999999992
0000988001008000	4910	0221	100	2208022	311	100061100	011	000002801
0001005001001002	1000	0451	210	2208012	212	100061100	011	000002002
0001005001002001	2000	0342	210	2208012	221	310099900	990	000000002
0001005001003000	3000	0122	100	2208012	212	330099900	990	000000002
0001013001001002	1000	0651	220	2207022	120	343099900	990	000000002
0001013001002001	2000	0652	220	2208022	120	310099900	990	000000002
0001013001003000	3000	0332	350	2208022	221	310099900	990	000000002
0001013001004000	4100	0152	100	2208012	221	330099900	990	000000002
0001013001005000	4100	0132	100	2208012	212	330099900	990	000000002
0001013001006000	4100	0021	100	2208000	000	000099900	990	999999992

Summary data

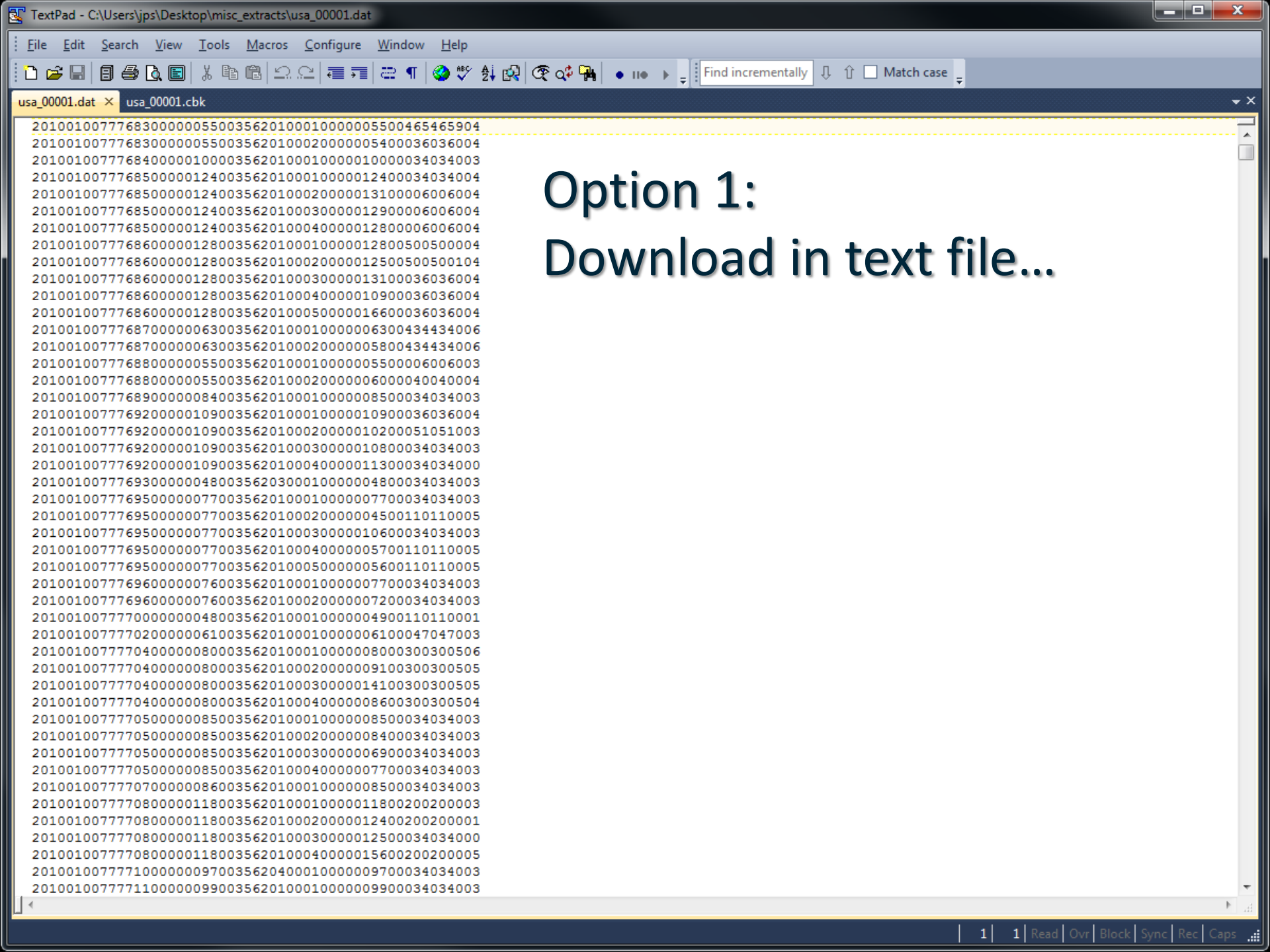
- Premade or published tables of aggregate characteristics
- Enable examination of small geographic areas
- Limitations: limited content, grouped intervals, and suppression for small counts

Microdata

- Show full range of responses for individuals & households
- Enable custom tables and individual-level analyses
- Limitations: geography, smaller samples, and item level suppression

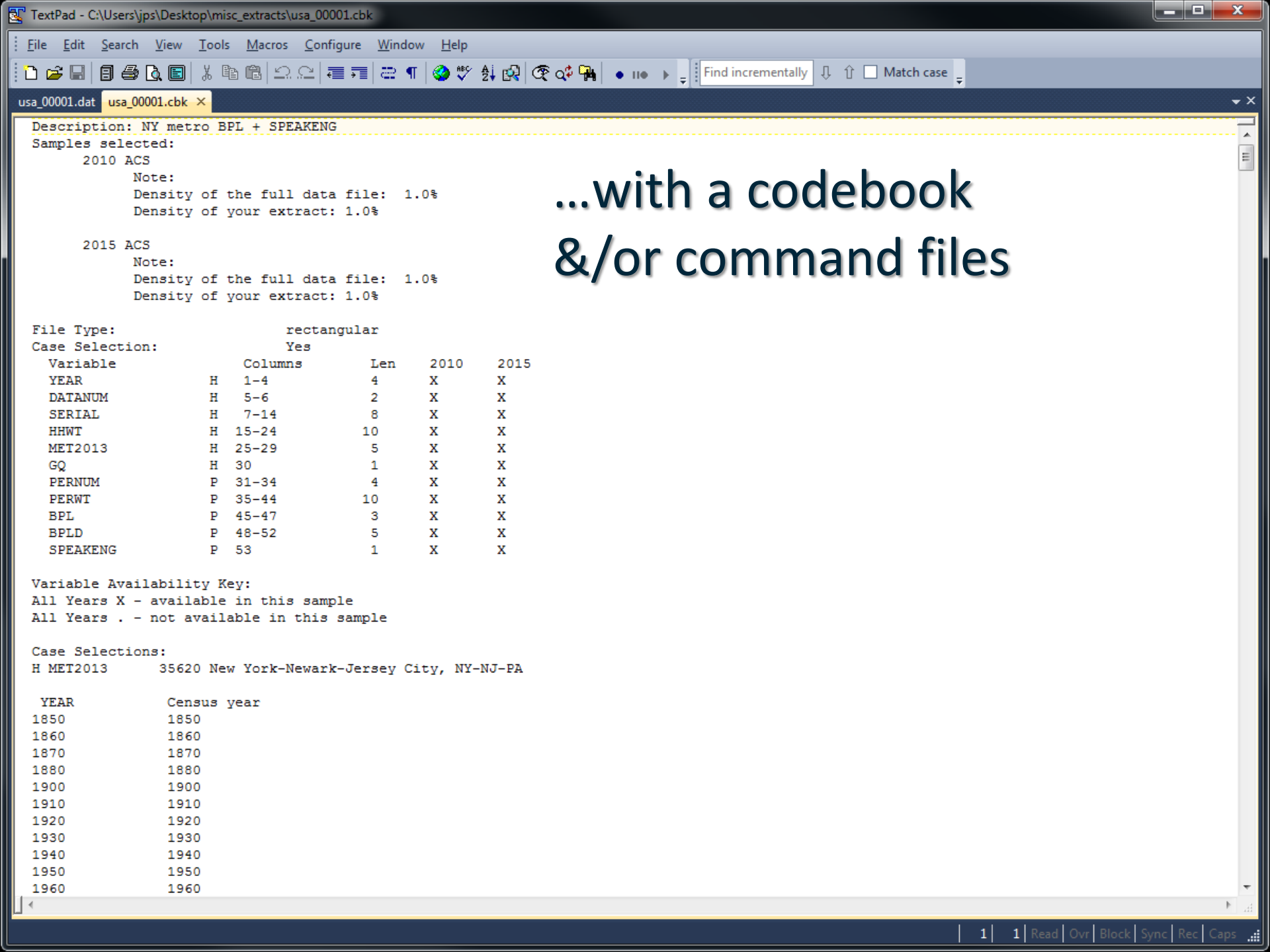
Microdata in IPUMS USA

- U.S. decennial censuses (1850-2010)
- American Community Survey (2000-2015 *ff.*)
- Samples from Puerto Rico (1910-2015 *ff.*)
- Complete-count datasets:
1850, 1880, 1920, 1930 & 1940
 - Working to complete: 1850-1940



Option 1:
Download in text file...

```
20100100777683000000550035620100010000005500465465904
20100100777683000000550035620100020000005400036036004
20100100777684000001000035620100010000010000034034003
20100100777685000001240035620100010000012400034034004
20100100777685000001240035620100020000013100006006004
20100100777685000001240035620100030000012900006006004
20100100777685000001240035620100040000012800006006004
20100100777686000001280035620100010000012800500500004
20100100777686000001280035620100020000012500500500104
20100100777686000001280035620100030000013100036036004
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20100100777689000000840035620100010000008500034034003
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20100100777693000000480035620300010000004800034034003
20100100777695000000770035620100010000007700034034003
20100100777695000000770035620100020000004500110110005
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20100100777704000000800035620100040000008600300300504
20100100777705000000850035620100010000008500034034003
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20100100777705000000850035620100040000007700034034003
20100100777707000000860035620100010000008500034034003
20100100777708000001180035620100010000011800200200003
20100100777708000001180035620100020000012400200200001
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20100100777708000001180035620100040000015600200200005
20100100777710000000970035620400010000009700034034003
20100100777711000000990035620100010000009900034034003
```



Description: NY metro BPL + SPEAKENG

Samples selected:

2010 ACS

Note:

Density of the full data file: 1.0%

Density of your extract: 1.0%

2015 ACS

Note:

Density of the full data file: 1.0%

Density of your extract: 1.0%

File Type: rectangular

Case Selection: Yes

Variable	Columns	Len	2010	2015
YEAR	H 1-4	4	X	X
DATANUM	H 5-6	2	X	X
SERIAL	H 7-14	8	X	X
HHWT	H 15-24	10	X	X
MET2013	H 25-29	5	X	X
GQ	H 30	1	X	X
PERNUM	P 31-34	4	X	X
PERWT	P 35-44	10	X	X
BPL	P 45-47	3	X	X
BPLD	P 48-52	5	X	X
SPEAKENG	P 53	1	X	X

Variable Availability Key:
 All Years X - available in this sample
 All Years . - not available in this sample

Case Selections:
 H MET2013 35620 New York-Newark-Jersey City, NY-NJ-PA

YEAR	Census year
1850	1850
1860	1860
1870	1870
1880	1880
1900	1900
1910	1910
1920	1920
1930	1930
1940	1940
1950	1950
1960	1960

...with a codebook
&/or command files

Option 2: online analysis tool

Variable Selection: [Help](#)

Selected:

Copy to:

Mode: Append Replace

- 2011-2015, ACS 5-year sample
 - Household - Technical
 - Household - Geographic
 - Household - Group Quarters
 - Household - Economic Characteristic
 - Household - Dwelling Characteristic
 - Household - Appliances, Mechanical, Other
 - Household - Household Composition
 - Household - Housing Data Quality Flags
 - Person - Technical
 - Person - Family Interrelationship
 - Person - Demographic
 - Person - Race, Ethnicity, and Nativity
 - race - Race
 - raced - Race
 - hispan - Hispanic origin
 - hispan d - Hispanic origin
 - bpl - Birthplace
 - bpl d - Birthplace
 - ancestr1 - Ancestry, first response
 - ancestr1 d - Ancestry, first response
 - ancestr2 - Ancestry, second response
 - ancestr2 d - Ancestry, second response
 - citizen - Citizenship status
 - ymatur - Year naturalized
 - yrimmig - Year of immigration
 - yrusa1 - Years in the United States
 - yrusa2 - Years in the United States, intervalled
 - language - Language spoken

REQUIRED Variable names to specify

Row:

OPTIONAL Variable names to specify

Column:

Control:

Selection Filter(s): Example: age(18-50)

Weight:

TABLE OPTIONS

Percentaging:
 Column Row Total
 Confidence intervals Level:
 Standard error of each percent

N of cases to display:
 Unweighted Weighted

Summary statistics
 Question text Suppress table
 Color coding Show Z-statistic
 Include missing-data values

CHART OPTIONS

Type of chart:

Bar chart options:
Orientation: Vertical Horizontal
Visual Effects: 2-D 3-D

Show percents: Yes

Palette: Color Grayscale

Size - width: height:

Title:

Change number of decimal places to display

For percents and confidence intervals:

For std. errors (relative to percents):

For DEFT:

For weighted N's:

For summary statistics and Z-statistic:

SDA 3.5: Tables

2011-2015, ACS 5-year sample

May 04, 2017 (Thu 11:29 AM CDT)

Variables					
Role	Name	Label	Range	MD	Dataset
Row	met2013	Metropolitan area, 2013 OMB delineations	0-49740		1
Column	hispan	Hispanic origin	0-4		1
Weight	hhwt	Household weight	1.00-502.00		1

Frequency Distribution

Cells contain: -Row percent -Weighted N		hispan					
		0 Not Hispanic	1 Mexican	2 Puerto Rican	3 Cuban	4 Other	ROW TOTAL
0: Not in identifiable area		92.3 61,086,339.0	5.9 3,895,918.0	.5 336,127.0	.1 85,463.0	1.2 808,154.0	100.0 66,212,001.0
10420: Akron, OH		98.2 665,972.0	.9 5,993.0	.4 2,890.0	.0 250.0	.4 2,929.0	100.0 678,034.0
10580: Albany-Schenectady-Troy, NY		95.5 754,566.0	.6 4,896.0	2.4 18,624.0	.2 1,473.0	1.4 10,890.0	100.0 790,449.0
10740: Albuquerque, NM		52.3 434,242.0	27.5 228,719.0	.5 4,301.0	.4 2,959.0	19.3 160,720.0	100.0 830,941.0
10780: Alexandria, LA		98.0 22,550.0	1.8 416.0	.0 .0	.1 12.0	.1 33.0	100.0 23,011.0
10900: Allentown-Bethlehem-Easton, PA-NJ		85.3 691,767.0	1.0 8,466.0	8.5 68,519.0	.2 1,976.0	4.9 40,035.0	100.0 810,763.0
11020: Altoona, PA		98.7 25,853.0	.0 11.0	1.0 251.0	.0 .0	.3 89.0	100.0 26,204.0
11100: Amarillo, TX		72.3	25.4	.2	.1	1.9	100.0

ACS microdata samples

- Full survey responses for 1% of US population per year
- Yearly samples & multi-year samples
- Suppression for confidentiality
 - Names, addresses
 - Income top coding
 - Geographic limitations

Geography in ACS microdata

- Regions, divisions, states & ...
- ***Public Use Microdata Areas (PUMAs):***
 - At least 100,000 residents
 - 2010 average: 131,000, max: 269,000
 - In use since 1970*
 - *Called “county groups” in 1970 & 1980
 - IPUMS has also defined 1960 PUMAs

PUMA problems

1. Limited spatial precision
2. Not consistent with counties, cities, metro areas, *etc.*
3. Boundaries are revised after each census
 - Change in ACS PUMAs between 2011 & 2012...
 - Inconsistent *within* 5-year samples

IPUMS-USA geographic resources

- Supplementary variables, based on PUMAs
 - Counties, cities, metro areas, metro status
 - “ConsPUMAs”: Sets of PUMAs with *consistent* extents across time
- GIS shapefiles & online maps
 - PUMAs
 - Migration & Place of Work PUMAs
 - ConsPUMAs
- Detailed documentation & crosswalks



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GEOGRAPHIC TOOLS

Boundary files, maps, component lists, and relationship files for geographic areas identified in IPUMS-USA samples

GIS BOUNDARY FILES

We provide GIS-compatible boundary files for the most commonly used geographic units.

- [All IPUMS-USA boundary files](#)

RESOURCES FOR PUBLIC USE MICRODATA AREAS (PUMAS) & COUNTY GROUPS

2010 Census and 2012-onward ACS/PRCS

- [2010 PUMAs](#)
- [2010 Migration PUMAs](#)
- [2010 Place of Work PUMAs](#)

2000 Census and 2005-2011 ACS/PRCS

- [2000 PUMAs and Super-PUMAs](#)
- [2000 Migration PUMAs and Super-PUMAs](#)
- [2000 Place of Work PUMAs and Super-PUMAs](#)

1960-1990 Samples

- [1990 PUMAs](#) - 1% and 5% sample versions
- [1980 County Groups](#) - 1% and 5% sample versions
- [1970 County Groups](#) - Metro samples
- [1960 PUMAs and mini-PUMAs](#) - 5% sample

Consistent PUMAs (ConsPUMAs)

- [1980-1990-2000 ConsPUMAs](#) - 1980-2011 samples
- [2010 ConsPUMAs](#) - 2000-onward samples

RESOURCES FOR METROPOLITAN AREAS

- 1960-2011: [Incompletely identified metropolitan areas](#)
- 1900-2011: [Components of metropolitan areas that existed in 2000](#)
- 1850-2011: [Components of metropolitan areas that existed in 1900](#)

RESOURCES FOR OTHER AREAS



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2010 PUMA DEFINITIONS

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The 2010 version of Public Use Microdata Areas ([PUMAs](#)) is the lowest level of geography identified in 2010 census samples and in samples from the American Community Survey (ACS) and Puerto Rico Community Survey (PRCS) for 2012 and later years.

The Census Bureau redraws PUMA boundaries every 10 years based on population information gathered from the most recent decennial census. ACS/PRCS samples incorporate the new PUMAs within a few years of the Decennial Census. 2012 was the first ACS/PRCS sample to use the 2010 PUMAs. Detailed maps of each individual 2010 PUMA can be downloaded from the [Census Bureau's Reference Map](#) page.

In [Multi-Year](#) ACS/PRCS files, the version of PUMAs identified depends on the year of interview (see [MULTIYEAR](#)). For example, in the 2010-2012 3-year ACS sample, 2000 PUMA codes are reported for 2010 and 2011 respondents, and 2010 PUMA codes are reported for 2012 respondents.

Relationships between 2000 and 2010 PUMAs:

- [2000-2010 PUMA Crosswalk](#) (Excel spreadsheet)
 - Includes 2000 population, 2010 population, land area, and [0010 ConsPUMA](#) codes for each area of intersection

The map below shows both the 2010 (in blue) and 2000 (in yellow) PUMA definitions. Clicking on the map will highlight and identify the county, 2000 PUMA, and 2010 PUMA for the selected location. You can select which boundaries you want to view using the Layers menu at the top of the map. There is also a [larger map](#) containing the same information.





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CHANGE IN PUMA BOUNDARIES, 2000 TO 2010

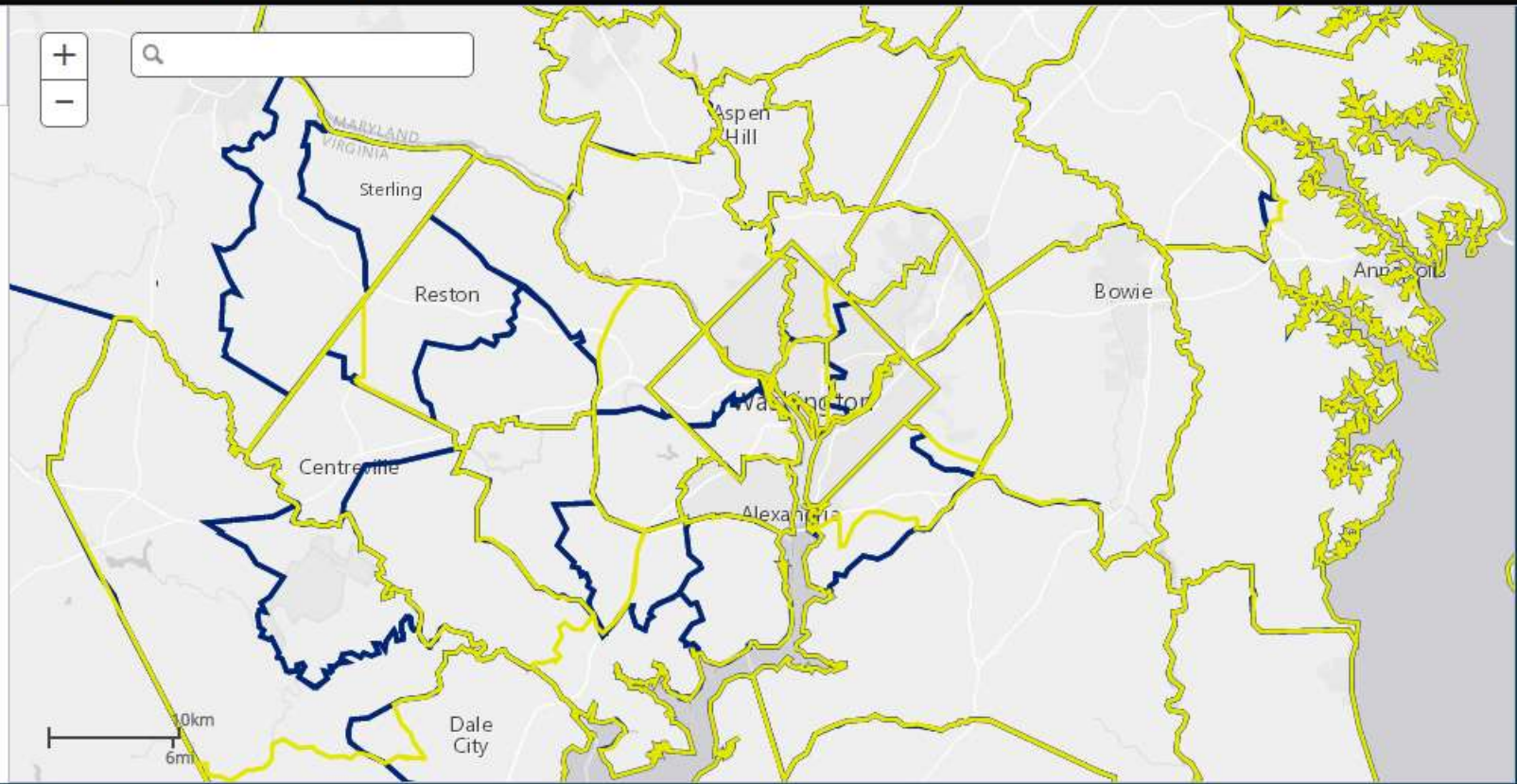
Layers Switch Basemap

Click to select feature(s)

Map Information

Legend

- 2000 PUMA
 - 
- 2010 PUMA
 - 





CHANGE IN PUMA BOUNDARIES, 2000 TO 2010

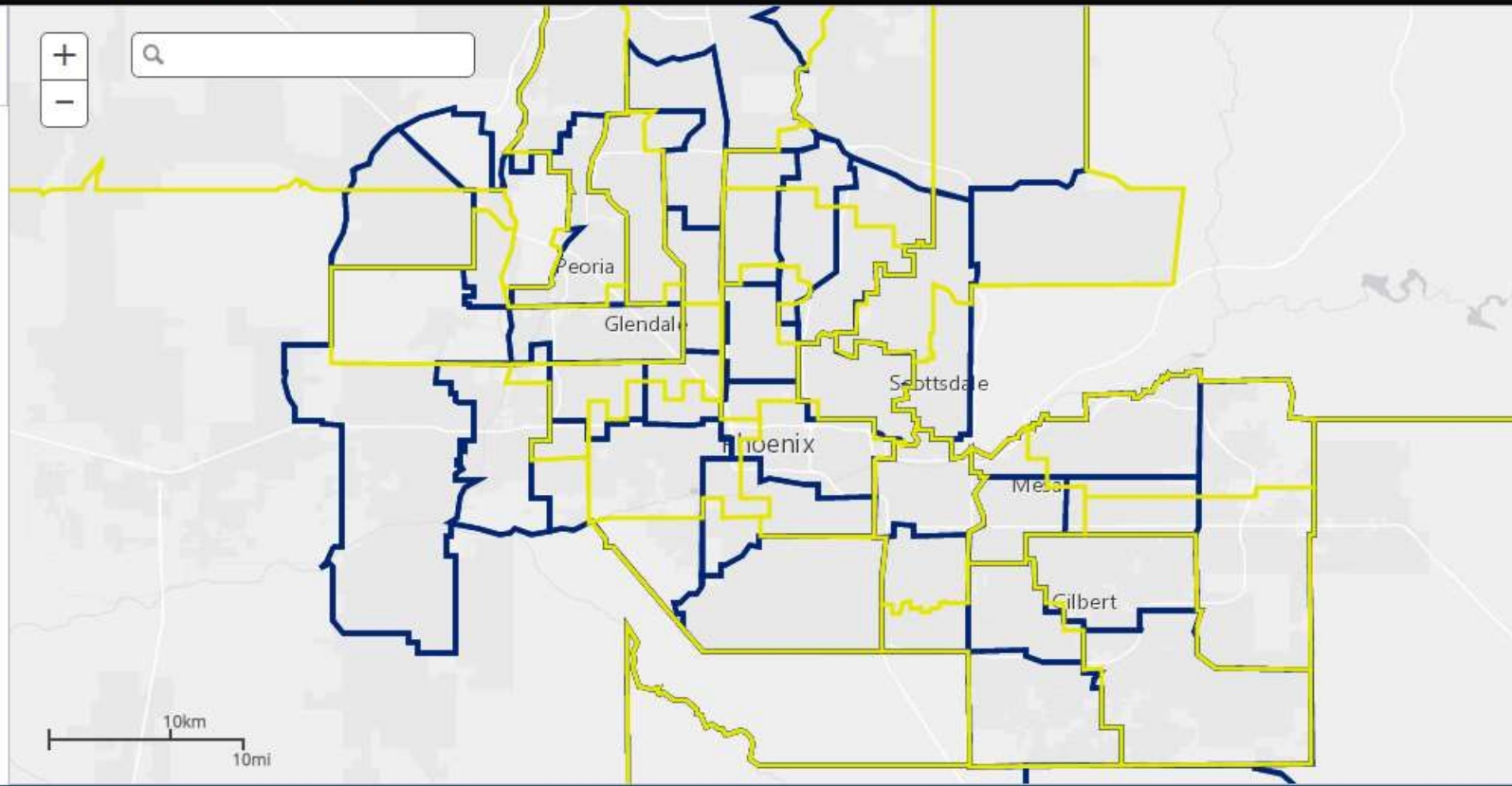
Layers Switch Basemap

Click to select feature(s)

Map Information

Legend

- 2000 PUMA
 - 
- 2010 PUMA
 - 





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IPUMS USA collects, preserves and harmonizes U.S. census microdata and provides easy access to this data with enhanced documentation. Data includes decennial censuses from 1790 to 2010 and American Community Surveys (ACS) from 2000 to the present.

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WHAT IS IPUMS?

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.

IPUMS-USA DATA UPDATES



DATA CART
YOUR DATA EXTRACT
0 VARIABLES
0 SAMPLES

SELECT VARIABLES

HOUSEHOLD ▾	PERSON ▾	A-Z ▾	SEARCH
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SELECT SAMPLES

[HELP](#)
[DISPLAY OPTIONS](#)



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DATA CART

YOUR DATA EXTRACT

0 VARIABLES
0 SAMPLES

SELECT VARIABLES

HOUSEHOLD PERSON A-Z SEARCH

SELECT SAMPLES

HELP
DISPLAY OPTIONS

- TECHNICAL
- GEOGRAPHIC**
- GROUP QUARTERS
- ECONOMIC CHARACTERISTIC
- DWELLING CHARACTERISTIC
- APPLIANCES, MECHANICAL, OTHER
- HOUSEHOLD COMPOSITION
- HISTORICAL OVERSAMPLE
- HISTORICAL TECHNICAL
- 1970 NEIGHBORHOOD

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SELECT VARIABLES

HOUSEHOLD PERSON A-Z SEARCH

SELECT SAMPLES

HELP
DISPLAY OPTIONS

AN "X" INDICATES THE VARIABLE IS AVAILABLE IN THAT DATASET.

GEOGRAPHIC VARIABLES -- HOUSEHOLD [TOP]

Add to cart	Variable	Variable Label	Type	Codes	2015 acs	2014 acs	2013 acs	2012 acs	2011 acs	2010 acs	2009 acs	2008 acs	2007 acs	2006 acs	2005 acs	2004 acs	2003 acs	2002 acs	2001 acs	2000 5pct	1990 5pct	1980 5pct	1970 met2	1970 met1	1960 5pct
+	REGION	Census region and division	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
+	STATEICP	State (ICPSR code)	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
+	STATEFIP	State (FIPS code)	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
+	COUNTY	County	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	X	X	X	X	X
+	COUNTYFIPS	County (FIPS code)	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	X	X	X	X	X
+	URBAN	Urban/rural status	H	codes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	i	i	i	i
+	METRO	Metropolitan status	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	i	X	i	i	X
+	METAREA	Metropolitan area	H	codes	.	.	.	.	X	X	X	X	X	X	X	.	X	.	.	X	X	X	X	X	X
+	MET2013	Metropolitan area, 2013 OMB delineations	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	.	.	.	.	.
+	MET2013ERR	Coverage error in MET2013 variable	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	.	.	.	.	.
+	CITY	City	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	X	X	.	.	X
+	CITYERR	Coverage error in CITY variable	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	X	.	.	.	X
+	CITYPOP	City population	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	X	.	.	.	.
+	SIZEPL	Size of place	H	codes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	X	.	.
+	NENGPOP	New England population in minor civil division	H	codes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
+	URBPOP	Population of urban places	H	codes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
+	CNTYGP97	County group, 1970	H	codes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	X	.
+	CNTYGP98	County group, 1980	H	codes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
+	PUMA	Public Use Microdata Area	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	X	.	.	.	X
+	PUMARES2MIG	Public Use Microdata Area matching MIGPUMA	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	.	.	.	.	.
+	PUMAMINI	Areas of 50000 for 1960s	H	codes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X
+	PUMASUPR	Super Public Use Microdata Area	H	codes	.	.	.	.	X	X	X	X	X	X	X	.	.	.	.	X	.	.	.	.	.
+	CONSPUMA	Consistent PUMA, 1980-1990-2000	H	codes	.	.	.	.	X	X	X	X	X	X	X	.	.	.	.	X	X	X	.	.	.
+	CPUMA0010	Consistent PUMA, 2000-2010	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	.	.	.	.	.
+	APPAL	Appalachian region	H	codes	.	.	.	.	X	X	X	X	X	X	X	.	.	.	.	X	X	X	.	.	.
+	HOMELAND	American Indian, Alaska Native, or Native Hawaiian homeland area	H	codes	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.	X	.	.	.	.	.

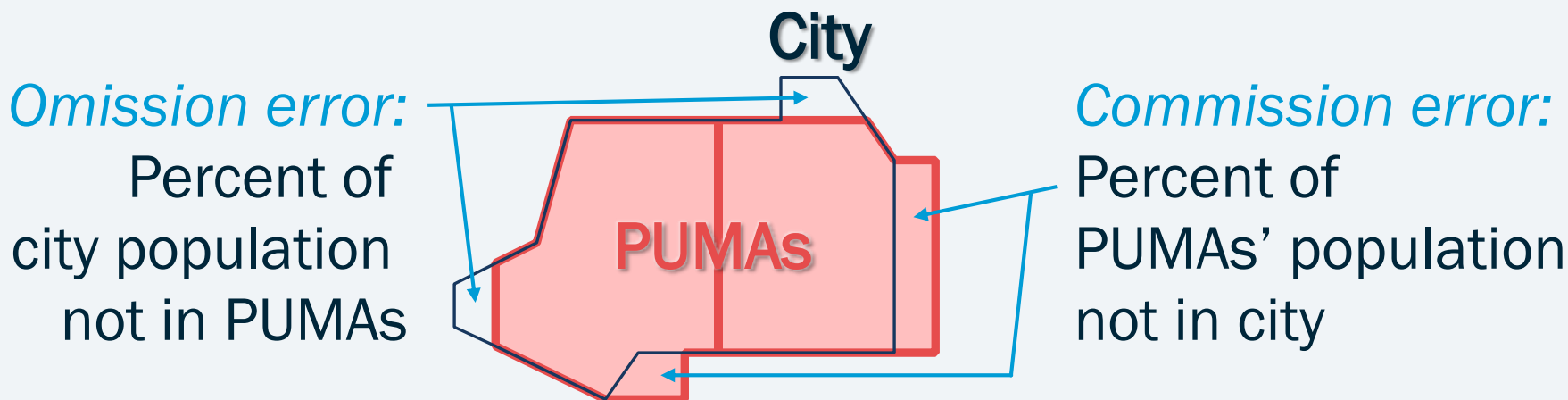
Counties

- Two variables...
 - **COUNTY**: ICPSR codes
 - Covers historical counties
 - **COUNTYFIPS**: FIPS codes
 - Covers only samples since 1950
- Identify only counties that match PUMA(s)
 - \leq 2011 ACS: 376 counties (59% US population)
 - \geq 2012 ACS: 429 counties (64%)

Cities

- A.k.a. census “places”
- Protocol:
 - Identify city in which the *majority* of the PUMA’s population lives
 - Identify city *only if* match with PUMAs is “good”
 - Omission error + commission error < 10%

Measuring mismatch



Decline in identifiable cities

Samples	Cities identified	50 largest cities
≤ 2011 ACS	184	37
≥ 2012 ACS	104	25

New PUMAs:

All are built from counties & tracts →
Less consistency with city boundaries

City-PUMA match info on IPUMS

- Crosswalks between large places & PUMAs
- Mismatch errors by city...
 - In spreadsheet
 - In “CITYERR” variable

Metropolitan areas

- METAREA (1850 – 2011)
 - Extents vary with decennial MSA definitions
 - ACS codes based on 1999 MSAs
 - Identified if & only if a PUMA nests within a MSA
 - No commission errors, but unlimited omission errors
- MET2013 (2000 – 2015 *ff.*)
 - Uses fixed 2013 MSA definitions
 - Protocol like CITY's with mismatch limit of 15%

Metro areas identified by MET2013

Samples	MSAs identified	100 largest MSAs
≤ 2011 ACS	266	96*
≥ 2012 ACS	260	98*

*Omitted in all ACS: Tulsa-OK & Madison-WI

Omitted before 2012: Columbia-SC & Des Moines-IA

Metro-PUMA match info on IPUMS

- Crosswalks between 2013 MSAs & PUMAs
- Mismatch errors by MSA...
 - In spreadsheet
 - In “MET2013ERR” variable
- For METAREA, web pages identify:
 - County composition of each metro
 - Percent of metro’s population left unidentified

Metropolitan status

- METRO variable
 - Codes for metro / non-metro population, *and* in / not in principle city
 - “Not identifiable” codes where PUMAs straddle boundaries...
 - Decline in identifiability of principle city status:
 - 2011: 47% of US population
 - 2012: 37%

ConsPUMAs

- CONSPUMA (1980 – 2011)
 - Consistent aggregations of 1990 & 2000 PUMAs & 1980 county groups
 - Defined by visual inspection
 - Some mergers where affected populations are small, some changes ignored where populations are large
- CPUMA0010 (2000 – 2015 *ff.*)
 - Consistent aggregations of 2000 & 2010 PUMAs
 - Algorithm: “iterative mismatch reduction”
 - No mismatch errors $\geq 1\%$ population

ConsPUMAs

- Size variability:
 - 1,085 ConsPUMAs in 0010 version
 - 955 (88%) with population < 500,000
 - 41 (4%) with population > 1,000,000
 - Avg. population: 288,000
 - Max population: 4.5 million

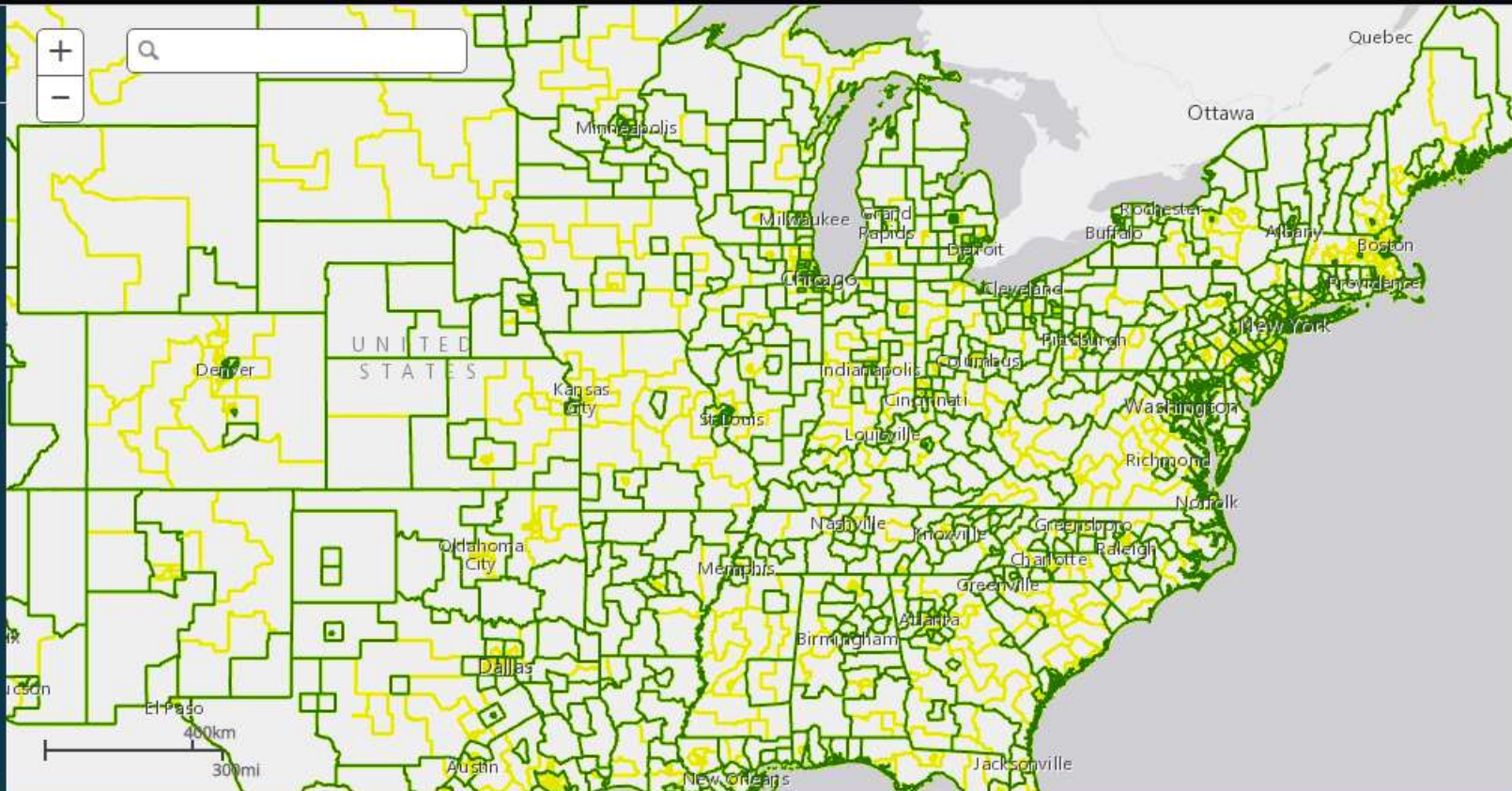


CPUMA0010 BOUNDARY, 2000

Layers

Switch Basemap

Click to select features)



Map Information

Legend

- CPUMA0010_tile
- CPUMA0010
- 2000 PUMA
- US_puma00_2010

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0010 CONSPUMA DEFINITIONS

The [CPUMA0010](#) variable supplies codes for the 0010 version of ConsPUMAs (Consistent Public Use Microdata Areas). Each 0010 ConsPUMA is an aggregation of one or more 2010 PUMAs (Public Use Microdata Areas) that, in combination, align closely (within a 1% population error tolerance) with a corresponding set of 2000 PUMAs.

The 0010 ConsPUMAs are effectively the smallest geographic units that can be consistently identified from the geographic codes available in U.S. Census PUMS from 2000 and later (until 2020 PUMAs take effect sometime after the 2020 Census).

A separate variable, [CONSPUMA](#), identifies sets of 1980, 1990, and 2000 PUMAs that comprise comparable populations for samples from 1980 through 2011.

INTERACTIVE MAPS

- [0010 ConsPUMAs and 2010 PUMAs](#)
- [0010 ConsPUMAs and 2000 PUMAs](#)

COMPOSITION AND RELATIONSHIP FILES

Details on the composition of 0010 ConsPUMAs are provided in Excel spreadsheets via the following links. Each file contains two worksheets: the first contains the main table, and a second "data_dictionary" sheet describes the data fields in the main table.

- [CPUMA0010 Summary](#): Summary of 0010 ConsPUMAs, including counts of associated 2000 and 2010 PUMAs, 2000 and 2010 populations, and population mismatch errors
- [CPUMA0010 2010 PUMA Components](#): Complete listing of the 2010 PUMAs that comprise each 0010 ConsPUMA
- [CPUMA0010 2000 PUMA Assignments](#): Complete listing of the 2000 PUMAs that are assigned to each 0010 ConsPUMA
- [2000-2010 PUMA Crosswalk](#): Crosswalk of 2000 PUMAs to 2010 PUMAs, including 2000 population, 2010 population, land area, and 0010 ConsPUMA codes for each area of intersection

For the specific counties, places, and tracts that comprise each PUMA, see the composition pages for [2000 PUMAs](#) and [2010 PUMAs](#).

BOUNDARY FILE

- [0010 ConsPUMAs](#) (shapefile within a .ZIP file)

BASIS

Future plans

- Geographic variables for new ACS releases
- Extend MET2013 backward
- New variables:
 - Population density, population-weighted density
 - % urban, % metropolitan, % in principal city
- Imputed census tracts

Acknowledgements

Katie Genadek
Josiah Grover
David Van Riper
Steven Ruggles
Catherine Fitch

Funding:

Eunice Kennedy Shriver National Institute of
Child Health & Human Development
(NIH-5R01HD043392)



(NIH/NICHD R24HD041023)