

Guidance for Calculating Incidence by Census Tract Poverty Level Using 2010 Census and 2006-2010 ACS

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Outline

- Linking Outcome (disease) data with 2010 census tract
- Accessing the U.S. Census Bureau's American Community Survey (ACS) 2006-2010 data to get census tract poverty level
- Accessing the U.S. Census Bureau's Census 2010 data to get the census tract level denominator data
- Linking cases to census tract poverty
- Linking census tract poverty to denominator data
- Calculating incidence/prevalence by census tract poverty level

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Linking Outcome (disease) data with 2010 census tract

Delete

	A	B	C	D	E	F	G	H	I	J
1	CaseID	Last Name	First Name	Age	Race *	Address	City	State	Zip_Code	Census_TractID
2	CT1112A0001	Allen	Ashley	39	White	10 York Street	New Haven	CT	06510	09009140200
3	CT1112A0002	Burrough	Brian	71	Black	20 Westfield Avenue	Ansonia	CT	06401	09009125300
4	CT1112A0003	Chin	Charles	62	Asian	30 Howard Avenue	New Haven	CT	06510	09009140300
5	CT1112A0004	Dougherty	David	49	White	40 Plymouth Street	New Haven	CT	06519	09009140300
6	CT1112A0005	Edward	Eleanor	79	Black	50 Terrace Avenue	West Haven	CT	06516	09009154400
7	CT1112A0006	Fort	Frank	56	White	60 Wildwood Drive	Orange	CT	06477	09009157300
8	CT1112A0007	Gutierrez	Gertrude	43	White	70 State Street	Hamden	CT	06517	09009165100
9	CT1112A0008	Holmes	Henry	65	Black	80 Putnam Avenue	Hamden	CT	06517	09009165400
10	CT1112A0009	Ike	Irvin	27	White	90 Elm Street	North Haven	CT	06473	09009167201
11	CT1112A00010	Jones	Jessica	19	Black	100 Willow Street	Meriden	CT	06450	09009171000

- Using ArcGIS or another software, geocode patients' addresses such that a census tract code is associated with each case.
- Export the data to a Microsoft Excel spreadsheet.
- Keep only the necessary data (i.e., case identification number, name, demographic information, and census tract code). Addresses can be removed. This will be your case line list.
- If the **Census_TractID** for your state had a leading zero, remove the leading zeros by doing a find and replace.
- Save a copy of the table. In this case, we will call the file **Case_List**.

* For simplicity, race rather than race-ethnicity is used in this example. Ideally, would use race-ethnicity

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Accessing the U.S. Census Bureau's American Community Survey (ACS) Data

Slide 6

Data & Documentation

The screenshot shows the U.S. Census Bureau American Community Survey website. A red arrow points to the 'Data & Documentation' tab in the navigation menu. The page features several sections:

- Latest Updates:** Includes links to 2010 ACS Content Test Evaluation Reports, 2006-2010 ACS 5-year PUMS, and a preliminary report comparing 2010 ACS and 2010 Census.
- Language Brochures:** Provides questions and answers about the ACS in 11 languages, including Arabic, Chinese, English, French, Haitian Creole, Korean, Polish, Portuguese, Russian, Spanish, and Vietnamese.
- Did You Receive a Survey?:** Includes a link to learn why you were selected and how to protect your privacy.
- New Data Every Year!:** Announces 2006-2010 ACS 5-Year Estimates and provides a link to get ACS estimates on American FactFinder.
- 2006-2010 ACS 5-year Estimates:** States that the 2006-2010 American Community Survey 5-year estimates are now available and provides a link to learn more about the 5-year Data Release.
- 2010 ACS Data Profile:** Offers quick links to Nation or State Level Profile and a dropdown menu for United States.
- Right Sidebar:** Includes a search bar, a 'GET EMAIL UPDATES' button, and links to 'Contact ACS', 'Frequently Asked Questions', 'Site Map', and 'Website Feedback'. It also features '2010 ACS 1-Year Estimates' and 'Data by Topic' (Age and Sex, Ancestry, Disability, Commuting to Work, Education, Employment, Family/Relationships, Income and Earnings, Language, Origins, Population Change, Poverty, Race and Ethnicity, Veterans).
- Footer:** Contains links for Privacy Policy, 2010 Census, Data Tools, Information Quality, Product Catalog, Contact Us, and Help.

- Access the U.S. Census Bureau's American Community Survey (ACS) data by going to: <http://www.census.gov/acs/www/>.
- Click on the **Data & Documentation** tab.

Accessing the U.S. Census Bureau's American Community Survey (ACS) Data

Slide 7

U.S. Census Bureau

American Community Survey

You are here: [Census.gov](#) > [American Community Survey](#) > Data & Documentation: Data

Main | About the Survey | Guidance for Data Users | **Data & Documentation** | Methodology | Library

Data

- 2010 Data Release
- 2009 Data Release
- 2008 Data Release
- Product Descriptions
- 2007 Data Release

Documentation

Geography

Downloadable data via FTP

Summary File

Public Use Microdata

Data

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Data Releases

We release 1-year, 3-year and 5-year data every year.

Get 2010 Data Release information

View Data Online

We publish data in many forms on the Census Bureau's [American FactFinder website](#), including:

- Data Profiles - social, economic, housing and demographic data tables
- Geographic Comparison Tables - tables comparing selected data characteristics for geographies.
- And more
 - Browse [product descriptions](#)
 - Get data products on [American FactFinder](#)

- Under Data Releases, click on **2010 Data Release**.

U.S. Census Bureau

American Community Survey

You are here: [Census.gov](#) > [American Community Survey](#) > Data & Documentation: Data > 2010 Data Release

Main | About the Survey | Guidance for Data Users | **Data & Documentation** | Methodology | Library

Data

- 2010 Data Release**
- Product Changes
- Release Schedule
- ACS Briefs

2009 Data Release

2008 Data Release

Product Descriptions

2007 Data Release

Documentation

Geography

2010 Data Release

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New and Notable

2006-2010 ACS 5-year estimates

2006-2010 5-year estimates released December 8 **Details** posted December 8, 2011

2006-2010 ACS 5-year estimates are available in the [New American FactFinder](#) for geographic areas down to the census tract level. Download the list of 2006-2010 [ACS 5-year detailed tables](#). [xlsx 47KB]

Block group estimates available only in the Summary File **Details**

- Click **Details** next to 2006-2010 5-year estimates released December 8.
- Click on **New American FactFinder**.

New American FactFinder

Selecting State-Specific Census Tract Data

- Dataset: 2010 ACS 5-year estimates should appear under Your Selections.
- Click on **Geographies** located in the left hand column.

U.S. Census Bureau

MAIN SEARCH WHAT WE PROVIDE USING FACTFINDER

Search - Use the options on the left (topics, geographies, ...) to narrow your search results

Your Selections

Search using...
Dataset:
2010 ACS 5-year estimates

Search using the options below:

Topics
(age, income, year, dataset, ...)

Geographies
(states, counties, places, ...)

Race and Ethnic Groups
(race, ancestry, tribe)

Industry Codes
(NAICS industry, ...)

The 2010 American Community Survey (ACS) 1-year estimates, 2008-2010 ACS 3-year estimates, and the 2006-2010 ACS 5-year estimates are available in the new American FactFinder. ACS available in the new American FactFinder in late 2011 or early 2012.

ACS Data Products on the Legacy American FactFinder

Search Results: 1-25 of 2,305 tables and other products match "Your Selections"

Selected: View Download Compare Clear All

Search for: GO

ID	Table, File or Document Title	Dataset	About
☐ DP02	SELECTED SOCIAL CHARACTERISTICS IN THE UNITED STATES	2010 ACS 5-year estimates	?
☐ DP02PR	SELECTED SOCIAL CHARACTERISTICS IN PUERTO RICO	2010 ACS 5-year estimates	?
☐ DP03	SELECTED ECONOMIC CHARACTERISTICS	2010 ACS 5-year estimates	?
☐ DP04	SELECTED HOUSING CHARACTERISTICS	2010 ACS 5-year estimates	?
☐ DP05	ACS DEMOGRAPHIC AND HOUSING ESTIMATES	2010 ACS 5-year estimates	?
☐ S0101	AGE AND SEX	2010 ACS 5-year estimates	?
☐ S0102	POPULATION 60 YEARS AND OVER IN THE UNITED STATES	2010 ACS 5-year estimates	?
☐ S0102PR	POPULATION 60 YEARS AND OVER IN PUERTO RICO	2010 ACS 5-year estimates	?
☐ S0103	POPULATION 65 YEARS AND OVER IN THE UNITED STATES	2010 ACS 5-year estimates	?
☐ S0103PR	POPULATION 65 YEARS AND OVER IN PUERTO RICO	2010 ACS 5-year estimates	?
☐ S0501	SELECTED CHARACTERISTICS OF THE NATIVE AND FOREIGN-BORN POPULATIONS	2010 ACS 5-year estimates	?
☐ S0502	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY PERIOD OF ENTRY INTO THE UNITED STATES	2010 ACS 5-year estimates	?
☐ S0502PR	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY PERIOD OF ENTRY INTO PUERTO RICO	2010 ACS 5-year estimates	?
☐ S0503	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: EUROPE	2010 ACS 5-year estimates	?
☐ S0504	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: AFRICA, NORTHERN AMERICA, AND OCEANIA	2010 ACS 5-year estimates	?
☐ S0505	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: ASIA	2010 ACS 5-year estimates	?
☐ S0506	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: LATIN AMERICA	2010 ACS 5-year estimates	?
☐ S0601	SELECTED CHARACTERISTICS OF THE TOTAL AND NATIVE POPULATIONS IN THE UNITED STATES	2010 ACS 5-year estimates	?
☐ S0601PR	SELECTED CHARACTERISTICS OF THE TOTAL AND NATIVE POPULATIONS IN PUERTO RICO	2010 ACS 5-year estimates	?
☐ S0701	GEOGRAPHIC MOBILITY BY SELECTED CHARACTERISTICS IN THE UNITED STATES	2010 ACS 5-year estimates	?
☐ S0701PR	GEOGRAPHIC MOBILITY BY SELECTED CHARACTERISTICS IN PUERTO RICO	2010 ACS 5-year estimates	?
☐ S0702	MOVERS BETWEEN REGIONS	2010 ACS 5-year estimates	?
☐ S0801	COMMUTING CHARACTERISTICS BY SEX	2010 ACS 5-year estimates	?
☐ S0802	MEANS OF TRANSPORTATION TO WORK BY SELECTED CHARACTERISTICS	2010 ACS 5-year estimates	?
☐ S0804	MEANS OF TRANSPORTATION TO WORK BY SELECTED CHARACTERISTICS FOR WORKPLACE GEOGRAPHY	2010 ACS 5-year estimates	?

Selected: View Download Compare Clear All

Selecting State-Specific Census Tract Data

- The **Select Geographies** pop-up box will appear.
- Under the **Geography Filter Options**, expand the **Geographic Type** by clicking on the + sign and select **Census Tract**.

U.S. Census Bureau

MAIN SEARCH WHAT WE PROVIDE USING FACTFINDER

Search - Use the options on the left (topics, geographies, ...) to narrow your search results

Your Selections

Search using...
Dataset:
2010 ACS 5-year estimates

clear all selections and start a new search

Search using the options below:

Topics
(age, income, year, dataset, ...)

Geographies
(states, counties, places, ...)

Race and Ethnic Groups
(race, ancestry, tribe)

Industry Codes
(NAICS industry, ...)

Select Geographies

Name Address Map

Enter a geography name or use the Geography Filter Options below:
Enter a geography name (Alabama, Marengo County, ...)

Your Geography Filters

Your Geography Filters is empty

Geography Filter Options

Geographic Type

- Nation (1)
- State (3,007)
- County (58,753)
- City or Town (153,190)
- Congressional District (2,294)
- Census Tract (269,633)
- Metro/Micro Area (2,912)
- Other (32,825)

Summary Level

- Within State

Include in results:

- ☒ All geographies
- ☐ Individual geographies
- ☐ Groups of geographies

☐ Show Geographic Components (e.g., urban, rural)

Search using geographic codes

FIPS codes

GO

Select geographies to add to Your Selections

Select from:
☐ most requested summary levels ☒ all summary levels ☐ individual blocks

Geography Results: 1-25 of 542,629

Selected: Add Check All Clear All

Geography Name	Geography Type	About
☐ United States	United States	?
☐ All States within United States	State	?
☐ Alabama	State	?
☐ Alaska	State	?
☐ Arizona	State	?
☐ Arkansas	State	?
☐ California	State	?
☐ Colorado	State	?
☐ Connecticut	State	?
☐ Delaware	State	?
☐ District of Columbia	State	?
☐ Florida	State	?
☐ Georgia	State	?
☐ Hawaii	State	?
☐ Idaho	State	?
☐ Illinois	State	?
☐ Indiana	State	?
☐ Iowa	State	?
☐ Kansas	State	?
☐ Kentucky	State	?

Selecting State-Specific Census Tract Data

- Under Geography Results/Geography Name, click directly on **All Census Tracts within State** (the state of interest to you; Connecticut is used in this example) OR click on the box next to it then click **Add** at the top.

Census Tract: All Census Tracts within *State* should now appear under Your Selections.

The screenshot shows the U.S. Census Bureau Factfinder interface. On the left, there are navigation tabs: MAIN, SEARCH, WHAT WE PROVIDE, and USING FACTFINDER. The SEARCH tab is active. Below the tabs, there's a search bar and a section for 'Your Selections' showing the dataset '2010 ACS 5-year estimates'. The 'Select Geographies' section is open, displaying a list of geography results. The first result, 'All Census Tracts within Connecticut', is selected. A red box highlights the 'Add' button next to this selection. The 'Geography Filter Options' section on the left shows various filters like 'Summary Level', 'Within State', 'Within Region', etc.

The screenshot shows the 'Your Selections' section of the U.S. Census Bureau Factfinder interface. It displays the dataset '2010 ACS 5-year estimates' and the selected geography 'All Census Tracts within Connecticut'. Below this, there's a section for 'Search using the options below:' with a dropdown menu for 'Topics' (age, income, year, dataset, ...). The 'Search Results' section is partially visible on the right.

- Close out of the Select Geographies pop-up box.

Selecting State-Specific Census Tract Data

Your Selections	Search Results: 1-75 of 854 tables and other products match "Your Selections"				
Search using... Dataset: 2010 ACS 5-year estimates Census Tract All Census Tracts within Connecticut clear all selections and start a new search					
Search using the options below: Topics (age, income, year, dataset, ...) ▶					
Geographies (states, counties, places, ...) ▶					
Race and Ethnic Groups (race, ancestry, tribe) ▶					
Industry Codes (NAICS industry, ...) ▶					
	☐	S1201	MINIMUM INCOME	estimates	
	☐	S1301	FERTILITY	2010 ACS 5-year estimates	
	☐	S1401	SCHOOL ENROLLMENT	2010 ACS 5-year estimates	
	☐	S1501	EDUCATIONAL ATTAINMENT	2010 ACS 5-year estimates	
	☐	S1601	LANGUAGE SPOKEN AT HOME	2010 ACS 5-year estimates	
	☐	S1602	NO ONE AGE 14 AND OVER SPEAKS ENGLISH ONLY OR SPEAKS ENGLISH VERY WELL	2010 ACS 5-year estimates	
	☐	S1603	CHARACTERISTICS OF PEOPLE BY LANGUAGE SPOKEN AT HOME	2010 ACS 5-year estimates	
	☒	S1701	POVERTY STATUS IN THE PAST 12 MONTHS	2010 ACS 5-year estimates	
	☐	S1702	POVERTY STATUS IN THE PAST 12 MONTHS OF FAMILIES	2010 ACS 5-year estimates	
	☐	S1703	SELECTED CHARACTERISTICS OF PEOPLE AT SPECIFIED LEVELS OF POVERTY IN THE PAST 12 MONTHS	2010 ACS 5-year estimates	
	☐	S1901	INCOME IN THE PAST 12 MONTHS (IN 2010 INFLATION-ADJUSTED DOLLARS)	2010 ACS 5-year estimates	
	☐	S1902	MEAN INCOME IN THE PAST 12 MONTHS (IN 2010 INFLATION-ADJUSTED DOLLARS)	2010 ACS 5-year estimates	

➤ Select Poverty Status (S1701) in the Past 12 Months.

Note: may have to search for it by scrolling down or using the search function.

Downloading State-Specific Census Tract Data

- After selecting the variable(s) of interest, click **Download** at the top of the page.

U.S. Census Bureau

MAIN SEARCH WHAT WE PROVIDE USING FACTFINDER

Search - Use the options on the left (topics, geographies, ...) to narrow your search results

Your Selections

Search using...
 Dataset:
 2010 ACS 5-year estimates
 Census Tract
 All Census Tracts within
 Connecticut

clear all selections and start a new search

Search using the options below:

Topics
 (age, income, year, dataset, ...)

Geographies
 (states, counties, places, ...)

Race and Ethnic Groups
 (race, ancestry, tribe)

Industry Codes
 (NAICS industry, ...)

The 2010 American Community Survey (ACS) 1-year estimates, 2008-2010 ACS 3-year estimates, and the 2006-2010 ACS 5-year estimates are available in the new American FactFinder. ACS estimates from earlier years are currently available only in the legacy American FactFinder.

ACS Data Products on the Legacy American FactFinder

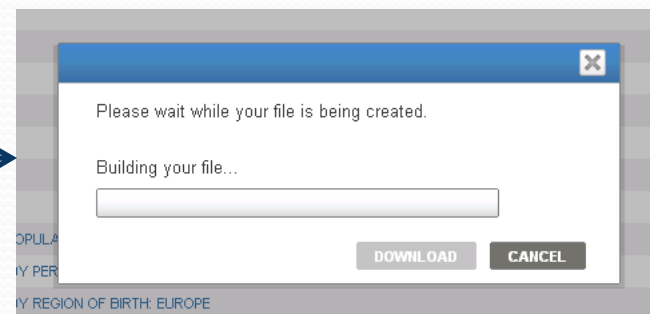
Search Results: 1-75 of 854 tables and other products match 'Your Selections'

3 Selected: View **Download** Compare Clear All ?

Search for: GO

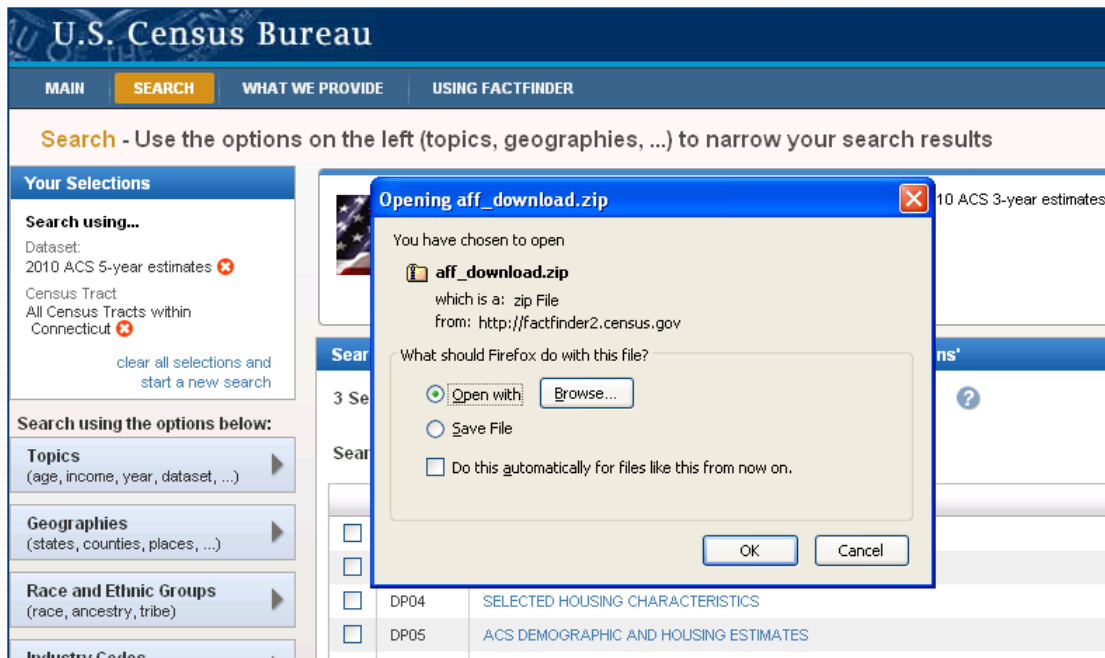
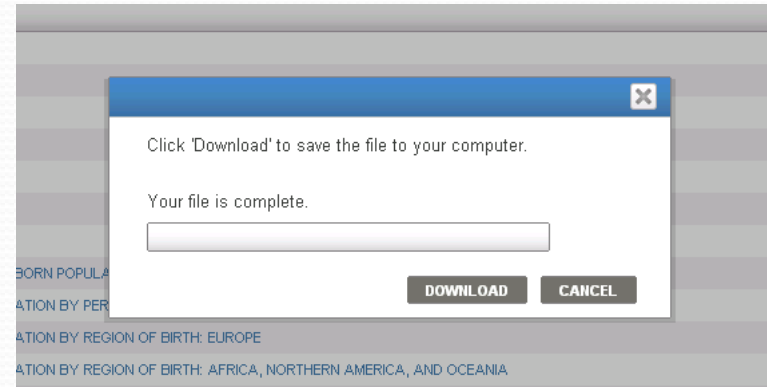
ID	Table, File or Document Title	Dataset	About
☐ DP02	SELECTED SOCIAL CHARACTERISTICS IN THE UNITED STATES	2010 ACS 5-year estimates	?
☐ DP03	SELECTED ECONOMIC CHARACTERISTICS	2010 ACS 5-year estimates	?
☐ DP04	SELECTED HOUSING CHARACTERISTICS	2010 ACS 5-year estimates	?
☐ DP05	ACS DEMOGRAPHIC AND HOUSING ESTIMATES	2010 ACS 5-year estimates	?
☒ S0101	AGE AND SEX	2010 ACS 5-year estimates	?
☐ S0102	POPULATION 60 YEARS AND OVER IN THE UNITED STATES	2010 ACS 5-year estimates	?
☐ S0103	POPULATION 65 YEARS AND OVER IN THE UNITED STATES	2010 ACS 5-year estimates	?

- Since the data file may be too large, a zip file will need to be created. Click **OK**.



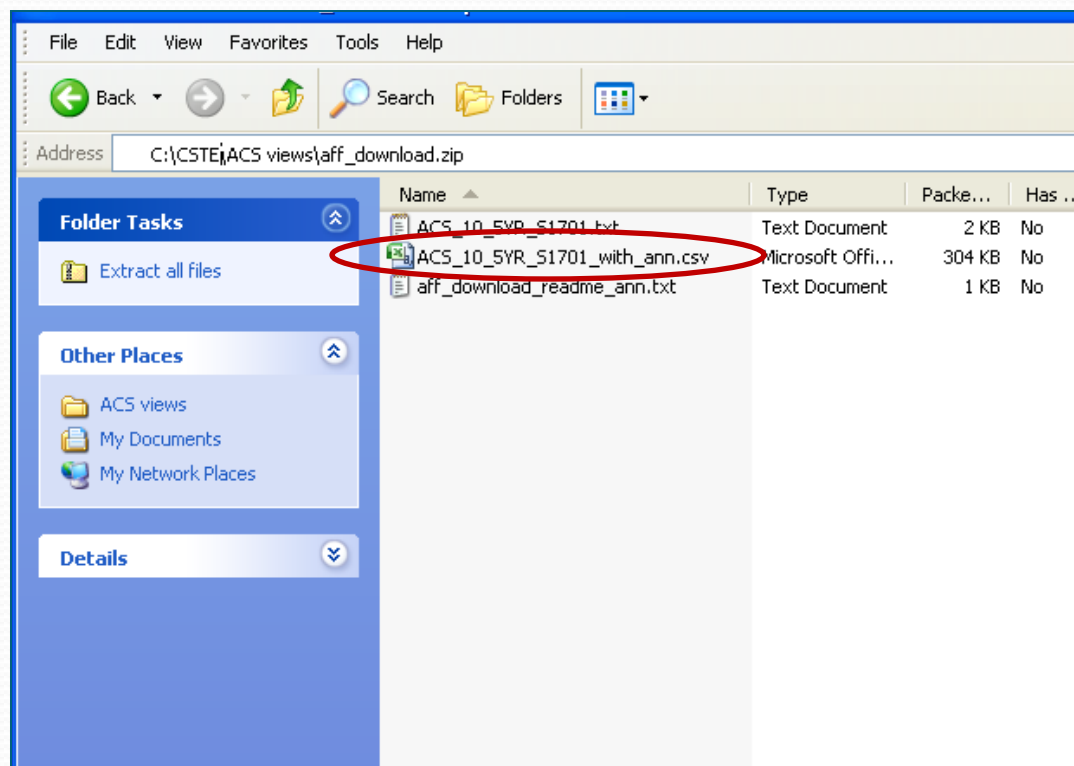
Downloading State-Specific Census Tract Data

- After the file is built, click on the **Download** button.



- Click **OK** to open the file.

Downloading State-Specific Census Tract Data



- When you open the zip file, you will see **.TXT** and **.CSV** (MS Office) files. The **.TXT** files provide background information related to the file. The **.CSV** file contains the actual data, which can be opened by Excel or other programs.
- Open the **.CSV** file.

- Save a copy of the table. You may want to create a new folder for these data files as this is only the first of many.

Cleaning the Data

PctBelowPov.csv - Microsoft Excel																			
Home		Insert		Page Layout		Formulas		Data		Review		View							
Clipboard		Font		Alignment		Number		Conditional Formatting		Styles		Cell Styles							
Cells		Cells		Cells		Cells		Cells		Cells		Cells							
K30		156																	
A		B		C		D		E		F		G		H		I		J	
1		Census_TractID				VC01		VC01		VC01		VC01		VC01		VC01		VC03	
2						Populatio		Populatio		Populatio		Populatio		Population for whom poverty		Populatio		AGE	
3																		Under 18	
4						HC01		HC01		HC02		HC02		HC03		HC03		HC01	
5						Total		Total		Below pov		Below pov		Percent below poverty level		Percent b		Total	
6		GEO.id		GEO.id2		GEO.displ		EST		MOE		EST		MOE		EST		MOE	
7		Id		Id2		Geograph		Estimate		Margin of		Estimate		Margin of		Estimate		Margin of	
8		1400000US09001010101		9001010101		Census Tr		3851		269		62		50		1.6		1.3	
9		1400000US09001010102		9001010102		Census Tr		4815		549		115		120		2.4		2.5	
10		1400000US09001010201		9001010201		Census Tr		3346		369		60		64		1.8		1.9	
11		1400000US09001010202		9001010202		Census Tr		4826		482		150		91		3.1		1.8	
12		1400000US09001010300		9001010300		Census Tr		3847		241		62		36		1.6		1	
13		1400000US09001010400		9001010400		Census Tr		5181		490		231		181		4.5		3.5	
14		1400000US09001010500		9001010500		Census Tr		5242		517		534		367		10.2		6.9	
15		1400000US09001010600		9001010600		Census Tr		1684		263		125		79		7.4		4.5	
16		1400000US09001010700		9001010700		Census Tr		3647		390		225		139		6.2		3.9	
17		1400000US09001010800		9001010800		Census Tr		3334		223		107		66		3.2		2	
18		1400000US09001010900		9001010900		Census Tr		5054		312		142		103		2.8		2	
19		1400000US09001011000		9001011000		Census Tr		5127		332		23		25		0.4		0.5	

- Create another row above the first row.
- In this row, rename the “GEO.id2” and “Percent below poverty level” variables for enhanced clarity. In this case, we will call them **Census_TractID** (the variable name used in the case line list) and **PctBelowPov**. You will only need to rename the estimate (EST) column.
- **Delete** the rows after the first row and before the estimated numbers.

Cleaning the Data

PctBelowPov.csv - Microsoft Excel

Home

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General

Conditional Formatting

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Alignment

Number

Styles

Cells

Editing

K31

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	A	B	C	D	E	F	G	H	I	J	K	
1		Census_TractID						PctBelowPov				
2	1400000US09001010101	9001010101	Census Tr	3851	269	62	50		1.6	1.3	1115	151
3	1400000US09001010102	9001010102	Census Tr	4815	549	115	120		2.4	2.5	1401	163
4	1400000US09001010201	9001010201	Census Tr	3346	369	60	64		1.8	1.9	1282	248
5	1400000US09001010202	9001010202	Census Tr	4826	482	150	91		3.1	1.8	1291	204
6	1400000US09001010300	9001010300	Census Tr	3847	241	62	36		1.6	1	961	101
7	1400000US09001010400	9001010400	Census Tr	5181	490	231	181		4.5	3.5	1333	268
8	1400000US09001010500	9001010500	Census Tr	5242	517	534	367		10.2	6.9	1056	260
9	1400000US09001010600	9001010600	Census Tr	1684	263	125	79		7.4	4.5	199	106
10	1400000US09001010700	9001010700	Census Tr	3647	390	225	139		6.2	3.9	742	204
11	1400000US09001010800	9001010800	Census Tr	3334	223	107	66		3.2	2	845	115
12	1400000US09001010900	9001010900	Census Tr	5054	312	142	103		2.8	2	1585	209
13	1400000US09001011000	9001011000	Census Tr	5127	332	23	25		0.4	0.5	1612	178
14	1400000US09001011100	9001011100	Census Tr	4800	323	48	32		1	0.7	1788	179
15	1400000US09001011200	9001011200	Census Tr	1952	171	0	123		0	1.8	493	103
16	1400000US09001011300	9001011300	Census Tr	3643	369	260	245		7.1	6.7	913	232
17	1400000US09001020100	9001020100	Census Tr	3778	597	750	305		19.9	7.2	343	147
18	1400000US09001020200	9001020200	Census Tr	4001	680	432	614		10.8	13.8	876	128
19	1400000US09001020300	9001020300	Census Tr	6977	296	11	18		0.2	0.3	1974	167
20	1400000US09001020400	9001020400	Census Tr	2204	187	26	20		1.4	0.8	862	77

W10

	A	B
1	Census_TractID	PctBelowPov
2	9001010101	1.6
3	9001010102	2.4
4	9001010201	1.8
5	9001010202	3.1
6	9001010300	1.6
7	9001010400	4.5
8	9001010500	10.2
9	9001010600	7.4
10	9001010700	6.2
11	9001010800	3.2
12	9001010900	2.8
13	9001011000	0.4
14	9001011100	1
15	9001011200	0
16	9001011300	7.1
17	9001020100	19.9
18	9001020200	10.8
19	9001020300	0.2
20	9001020400	1.1
21	9001020500	1.4
22	9001020600	2.7
23	9001020700	0.8
24	9001020800	8.1
25	9001020900	8.3
26	9001021000	2.8
27	9001021100	10.6

- Delete all of the other columns, keeping only **Census_TractID** and **PctBelowPov**.
- Don't forget to save your table! Save As if you would like to keep a copy of the original data for later reference. We will call the file **ACS_Poverty**.

Outline

- Linking Outcome (disease) data with 2010 census tract
- Accessing the U.S. Census Bureau's American Community Survey (ACS) 2006-2010 data to get census tract poverty level
- **Accessing the U.S. Census Bureau's Census 2010 data to get the census tract level denominator data**
- Linking cases to census tract poverty
- Linking census tract poverty to denominator data
- Calculating incidence/prevalence by census tract poverty level

Accessing the U.S. Census Bureau's Census 2010 Data

Slide 19

U.S. Census Bureau

AMERICAN
FactFinder

MAIN

SEARCH

WHAT WE PROVIDE

USING FACTFINDER

Your Selections

Search using...
Program:
American Community Survey 
[clear all selections and start a new search](#)

Search using the options below:

Topics
(age, income, year, dataset, ...)

Geographies
(states, counties, places, ...)

Race and Ethnic Groups
(race, ancestry, tribe)

Industry Codes
(NAICS industry, ...)

Getting Detailed Data

The following data are available on American FactFinder:

- Decennial Census**
Taken every 10 years to collect information about the people and housing of the United States
- American Community Survey**
An ongoing survey that provides data about your community every year
- Puerto Rico Community Survey**
The equivalent of the American Community Survey for Puerto Rico
- Economic Census**
Profiles the U.S. economy every 5 years
- Population Estimates Program**
Population numbers between censuses
- Annual Economic Surveys**
Data from the Annual Survey of Manufactures, County Business Patterns, Nonemployer Statistics and more

[more >](#)

Your source for population, housing, economic, and geographic information

Quick Start

Enter search term(s) and click 'GO' 

topic or table name

state, county or place (optional)

for

☒ topics ☐ race/ancestry ☐ industries

Or use the options on the left to begin your search

News and Notes

 [GET EMAIL UPDATES](#)

Mar 01, 2012
The Census Bureau is releasing Summary File 2 data on a state-by-state flow basis from December 2011 through April 2012. Data has been released for: NV, NM, CT, DC, OK, OR, FL, MA, MS, WA, ND, RI, TN, TX, AR, HI, IA, and MD. SF 2 provides detailed data on age, sex, households, families, the group quarters population, and occupied housing units for up to 331 race, Hispanic or Latino origin, and tribal population groups. Presentation of SF 2 tables for a population group is subject to a threshold of 100 or more people of a particular group in a particular geographic area. [more >](#)

Feb 16, 2012
The Census Bureau is releasing Summary File 2 data on a state-by-state flow basis from December 2011 through April 2012. Data has been released for: NV, NM, CT, DC, OK, OR, FL, MA, MS, WA, ND, RI, TN, and TX. SF 2 provides detailed data on age, sex, households, families, the group quarters population, and occupied housing units for up to 331 race, Hispanic or Latino origin, and tribal population groups. Presentation of SF 2 tables for a population group is subject to a threshold of 100 or more people of a particular group in a particular geographic area. [more >](#)

Feb 09, 2012
The Census Bureau is releasing Summary File 2 data on a state-by-state flow basis from December 2011 through April 2012. Data has been released for: NV, NM, CT, DC, OK, OR, FL, MA, MS, and WA. SF 2 provides detailed data on age, sex, households, families, the group quarters population, and occupied housing units for up to 331 race, Hispanic or Latino origin, and tribal population groups. Presentation of SF 2 tables for a population group is subject to a threshold of 100 or more people of a particular group in a particular geographic area. [more >](#)

Jan 26, 2012
The Census Bureau is releasing Summary File 2 data on a state-by-state flow basis from December 2011 through April 2012. Data has been released for: NV, NM, CT, DC, OK, and OR. SF 2 provides detailed data on age, sex, households, families, the group quarters population, and occupied housing units for up to 331 race, Hispanic or Latino origin, and tribal population groups. Presentation of SF 2 tables for a population group is subject to a threshold of 100 or more people of a particular group in a particular geographic area. [more >](#)

[Census Newsroom >](#)

 Access the U.S. Census Bureau's Census 2010 data by going to:
<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

 Select **Decennial Census**.

Accessing the U.S. Census Bureau's Census 2010 Data

Slide 20

U.S. Census Bureau

AMERICAN
FactFinder

MAIN SEARCH WHAT WE PROVIDE USING FACTFINDER

Feedback FAQs Glossary Help

Decennial Census

Historic Snapshot of the Nation

The official U.S. Census is described in Article I, Section 2 of the Constitution of the United States. It calls for an actual enumeration of the people every ten years, to be used for apportionment of seats in the House of Representatives among the states. The first official Census was conducted in 1790 under Thomas Jefferson, who was the Secretary of State. That census, taken by U.S. marshals on horseback, counted 3.9 million inhabitants. Since that time, the decennial Census has been conducted every ten years, generally on April 1 in years ending in a zero.



Besides providing the basis for congressional redistricting, Census data are used in many other ways. Since 1975, the Census Bureau has had responsibility to produce small-area population data needed to redraw state legislative and congressional districts. Other important uses of Census data include the distribution of funds for government programs such as Medicaid; planning the right locations for schools, roads, and other public facilities; helping real estate agents and potential residents learn about a neighborhood; and identifying trends over time that can help predict future needs. Most Census data are available for many levels of geography, including states, counties, cities and towns, ZIP codes, census tracts and blocks, and much more.

About the 2010 Census

The 2010 Census represented the most massive participation movement ever witnessed in our country. Approximately 74 percent of the households returned their census forms by mail; the remaining households were counted by census workers walking neighborhoods throughout the United States. National and state population totals from the 2010 Census were released on December 21, 2010. Redistricting data, which include additional state, county and local counts, was released starting in February 2011.

For the 2000 Census, additional questions were asked of a sample of persons and housing units (generally 1 in 6 households) on topics such as income, education, place of birth and more. Information on those topics are now available as part of the [American Community Survey](#).

Links

- [Decennial Census Data](#)
- [2010 Census Home](#)
- [Count Question Resolution Program](#)
- [Census 2000 Gateway](#)

What We Ask

For the 2010 Census, 10 questions were asked of every person and housing unit in the United States. Information is available on:

- Age
- Sex
- Hispanic or Latino origin
- Tenure (whether the home is owned or rented)
- Household relationship
- Vacancy characteristics
- Race

United States
Census
2010

Understanding the Results

The results from the 2010 Census are available in a number of datasets in American FactFinder:

- **2010 Census Redistricting Data (Public Law 94-171) Summary File** - used for congressional and state redistricting - [get data »](#)
- **2010 Demographic Profile Data** - 100-percent data asked of all people and about every housing unit - [get data »](#)
- **2010 Census Summary File 1** - counts and basic cross tabulations of information collected from all people and housing units - [get data »](#)
- **Summary File 2 (SF 2)** - population and housing characteristics iterated for many detailed race and Hispanic or Latino categories, and American Indian and Alaska Native tribes - *(to be released December 2011 – April 2012)*

Other decennial data sets:

- **2010 Census Same-Sex Couple Households Summary File** - [get data »](#)
- **American Indian and Alaska Native Summary File (AIANSF)** - population and housing characteristics iterated for many detailed American Indian and Alaska Native tribes - *(to be released December 2012)*
- **Congressional District Summary File (113th Congress)** - *(to be released January 2013)*
- **State Legislative District Summary File** - *(to be released June 2013)*

➤ Select **Get Data** next to the line **2010 Census Summary File 1**.

Selecting State-Specific Census Tract Data

- Dataset: 2010 SF1 100% Data should appear under **Your Selections**.
- Click on **Geographies** located on the left hand column.

U.S. Census Bureau

MAIN **SEARCH** WHAT WE PROVIDE USING FACTFINDER

Search - Use the options on the left (topics, geographies, ...) to narrow your search results

Your Selections

Search using...
Dataset:
2010 SF1 100% Data 

Clear all selections and start a new search

Search using the options below:

Topics
(age, income, year, dataset, ...)

Geographies
(states, counties, places, ...)

Race and Ethnic Groups
(race, ancestry, tribe)

Industry Codes
(NAICS industry, ...)

New information on same-sex couples from the 2010 Census will be released, including the number of married couples and a set of preferred estimates of same-sex spouses and unmarried partners at the national and state levels. These estimates were developed to account for data capture errors that make it difficult to measure same-sex couple households. Estimates from the 2010 American Community Survey (ACS), along with a brief analyzing the ACS estimates are available here.
[Information on same-sex couples](#)

The 2010 Demographic Profile is now available for geographies down to the Census Tract Level.

2010 Population
Population Totals
Data Profiles

The 2010 Census
sex, households
categories. Data
[More](#)

Search Results: 1-25 of 658 tables and other products match 'Your Selections'

Selected:  View  Download  Compare  Clear All 

Search for: **GO**

ID	Table, File or Document Title	Dataset	About
☐ QT-H1	General Housing Characteristics: 2010	2010 SF1 100% Data	
☐ QT-H2	Tenure, Household Size, and Age of Householder: 2010	2010 SF1 100% Data	
☐ QT-H3	Household Population and Household Type by Tenure: 2010	2010 SF1 100% Data	
☐ QT-P1	Age Groups and Sex: 2010	2010 SF1 100% Data	
☐ QT-P10	Hispanic or Latino by Type: 2010	2010 SF1 100% Data	
☐ QT-P11	Households and Families: 2010	2010 SF1 100% Data	
☐ QT-P12	Household Relationship and Group Quarters Population: 2010	2010 SF1 100% Data	
☐ QT-P13	Group Quarters Population by Sex, Age, and Type of Group Quarters: 2010	2010 SF1 100% Data	
☐ QT-P2	Single Years of Age and Sex: 2010	2010 SF1 100% Data	
☐ QT-P3	Race and Hispanic or Latino Origin: 2010	2010 SF1 100% Data	
☐ QT-P4	Race, Combinations of Two Races, and Not Hispanic or Latino: 2010	2010 SF1 100% Data	
☐ QT-P5	Race Alone or in Combination: 2010	2010 SF1 100% Data	
☐ QT-P6	Race Alone or in Combination and Hispanic or Latino: 2010	2010 SF1 100% Data	
☐ QT-P7	Race Reporting for the American Indian and Alaska Native Population by Selected Tribes: 2010	2010 SF1 100% Data	
☐ QT-P8	Race Reporting for the Asian Population by Selected Categories: 2010	2010 SF1 100% Data	
☐ QT-P9	Race Reporting for the Native Hawaiian and Other Pacific Islander Population by Selected Categories: 2010	2010 SF1 100% Data	
☐ H1	HOUSING UNITS	2010 SF1 100% Data	
☐ H10	TOTAL POPULATION IN OCCUPIED HOUSING UNITS	2010 SF1 100% Data	
☐ H11	TOTAL POPULATION IN OCCUPIED HOUSING UNITS BY TENURE	2010 SF1 100% Data	

Selecting State-Specific Census Tract Data

➤ The Select Geographies pop-up box will appear.

➤ Under the Geography Filter Options, expand the Geographic Type by clicking on the + sign and select **Census Tract**.

U.S. Census Bureau

MAIN SEARCH WHAT WE PROVIDE USING FACTFINDER

Search - Use the options on the left (topics, geographies, ...) to narrow your search results

Your Selections

Search using...
Dataset: 2010 SF1 100% Data

clear all selections and start a new search

Search using the options below:

Topics (age, income, year, dataset, ...)

Geographies (states, counties, places, ...)

Race and Ethnic Groups (race, ancestry, tribe)

Industry Codes (NAICS industry, ...)

Select Geographies

2010 Demographic Profile is now available for geographies down to the Census Tract Level.

Name Address Map

Enter a geography name or use the Geography Filter Options below:

Enter a geography name (Alabama, Marengo County, ...) GO

Your Geography Filters

'Your Geography Filters' is empty

Geography Filter Options

Geographic Type

- Nation (1)
- State (53)
- County (4,821)
- City or Town (89,383)
- Congressional District (2,294)
- Census Tract (144,980)
- MetroMicro Area (1,136)
- ZIP Code/ZCTA (67,025)
- Other (149,235)

Summary Level

Within State

Include in results:

- ☒ All geographies
- ☐ Individual geographies
- ☐ Groups of geographies

☐ Show Geographic Components (e.g., urban, rural)

Search using geographic codes

FIPS codes

GO

Select geographies to add to Your Selections

Select from:

- ☒ most requested summary levels
- ☐ all summary levels
- ☐ individual blocks

Geography Results: 1-25 of 458,928

Selected: Add Check All Clear All

Geography Name	Geography Type	About
☐ United States	United States	?
☐ All States within United States	State	
☐ Alabama	State	?
☐ Alaska	State	?
☐ Arizona	State	?
☐ Arkansas	State	?
☐ California	State	?
☐ Colorado	State	?
☐ Connecticut	State	?
☐ Delaware	State	?
☐ District of Columbia	State	?
☐ Florida	State	?
☐ Georgia	State	?
☐ Hawaii	State	?
☐ Idaho	State	?

Selecting State-Specific Census Tract Data

- Under Geography Results/Geography Name, click directly on **All Census Tracts within State** (the state of interest to you; Connecticut in this example) OR click on the box next to it then click **Add** at the top.

U.S. Census Bureau

MAIN SEARCH WHAT WE PROVIDE USING FACTFINDER

Search - Use the options on the left (topics, geographies, ...) to narrow your search results

Your Selections

Search using...
Dataset:
2010 SF1 100% Data

clear all selections and start a new search

Search using the options below:

Topics
(age, income, year, dataset, ...)

Geographies
(states, counties, places, ...)

Race and Ethnic Groups
(race, ancestry, tribe)

Industry Codes
(NAICS industry, ...)

Select Geographies 2010 Demographic Profile is now available for geographies down to the Census Tract level.

Name Address Map

Enter a geography name or use the Geography Filter Options below:
Enter a geography name (Alabama, Marengo County, ...) GO

Your Geography Filters

Geographic Type:
Census Tract

clear all filters

Select geographies to add to Your Selections

Select from:
☒ most requested summary levels ☐ all summary levels ☐ individual blocks

Geography Results: 1-25 of 144,980

Selected: Add Check All Clear All

Geography Name	Geography Type	About
☐ All Census Tracts within Alabama	Census Tract	
☐ All Census Tracts within Alaska	Census Tract	
☐ All Census Tracts within Arizona	Census Tract	
☐ All Census Tracts within Arkansas	Census Tract	
☐ All Census Tracts within California	Census Tract	
☐ All Census Tracts within Colorado	Census Tract	
☐ All Census Tracts within Connecticut	Census Tract	
☐ All Census Tracts within Delaware	Census Tract	
☐ All Census Tracts within District of Columbia	Census Tract	
☐ All Census Tracts within Florida	Census Tract	
☐ All Census Tracts within Georgia	Census Tract	
☐ All Census Tracts within Hawaii	Census Tract	
☐ All Census Tracts within Idaho	Census Tract	
☐ All Census Tracts within Illinois	Census Tract	
☐ All Census Tracts within Indiana	Census Tract	
☐ All Census Tracts within Iowa	Census Tract	
☐ All Census Tracts within Kansas	Census Tract	
☐ All Census Tracts within Kentucky	Census Tract	
☐ All Census Tracts within Louisiana	Census Tract	
☐ All Census Tracts within Maine	Census Tract	
☐ All Census Tracts within Maryland	Census Tract	
☐ All Census Tracts within Massachusetts	Census Tract	

Geography Filter Options

Summary Level

- ☒ Within State
- ☐ Within Region
- ☐ Within Division
- ☐ Within County
- ☐ Type of County
- ☐ Within Place
- ☐ Place Program Type
- ☐ Type of Place
- ☐ Within County Subdivision
- ☐ Type of County Subdivision
- ☐ Within Census Tract
- ☐ Type of American Indian Area
- ☐ Within American Indian Area
- ☐ Type of Alaska Native Area
- ☐ Within Alaska Native Area
- ☐ Type of Native Hawaiian Area
- ☐ Within Native Hawaiian Area
- ☐ Within Combined Statistical Area

Include in results:

- ☒ All geographies
- ☐ Individual geographies
- ☐ Groups of geographies

☐ Show Geographic Components (e.g., urban, rural)

Search using geographic codes

FIPS codes

GO

Census Tract: All Census Tracts within *State* should now appear under Your Selections.

U.S. Census Bureau

MAIN SEARCH WHAT WE PROVIDE

Search - Use the options on the left (to narrow your search results)

Your Selections

Search using...
Dataset:
2010 SF1 100% Data

Census Tract
All Census Tracts within Connecticut

clear all selections and start a new search

Select Geographies

Name

Enter a geography name or use the Geography Filter Options below:
Enter a geography name (Alabama, Marengo County, ...) GO

Search using the options below:

Topics
(age, income, year, dataset, ...)

- Close out of the **Select Geographies** pop-up box.

Selecting State-Specific Census Tract Data

U.S. Census Bureau

MAIN SEARCH WHAT WE PROVIDE USING FACTFINDER

Search - Use the options on the left (topics, geographies, ...) to narrow your search results

Your Selections

Search using...

Dataset:
2010 SF1 100% Data

Census Tract
All Census Tracts within Connecticut

[clear all selections and start a new search](#)

Search using the options below:

Topics
(age, income, year, dataset, ...)

Geographies
(states, counties, places, ...)

Race and Ethnic Groups
(race, ancestry, tribe)

Industry Codes
(NAICS industry, ...)

Search Results: 76-150 of 338 tables and other products match 'Your Selections'

1 Selected: [View](#) [Download](#) [Compare](#) [Clear All](#) [?](#)

Search for: [GO](#)

ID	Table, File or Document Title	Dataset	About
☐ HCT2	TENURE BY PRESENCE AND AGE OF OWN CHILDREN	2010 SF1 100% Data	i
☐ HCT3	TENURE BY PRESENCE AND AGE OF RELATED CHILDREN	2010 SF1 100% Data	i
☐ HCT4	TENURE BY PRESENCE AND AGE OF PEOPLE UNDER 18 YEARS BY HOUSEHOLD TYPE (EXCLUDING HOUSEHOLDERS, SPOUSES, AND UNMARRIED PARTNERS)	2010 SF1 100% Data	i
☒ P1	TOTAL POPULATION	2010 SF1 100% Data	i
☐ P10	RACE FOR THE POPULATION 18 YEARS AND OVER	2010 SF1 100% Data	i
☐ P11	HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE FOR THE POPULATION 18 YEARS AND OVER	2010 SF1 100% Data	i
☐ P12	SEX BY AGE	2010 SF1 100% Data	i
☐ P12A	SEX BY AGE (WHITE ALONE)	2010 SF1 100% Data	i

➤ Select (for this demonstration):

Total Population (P1)

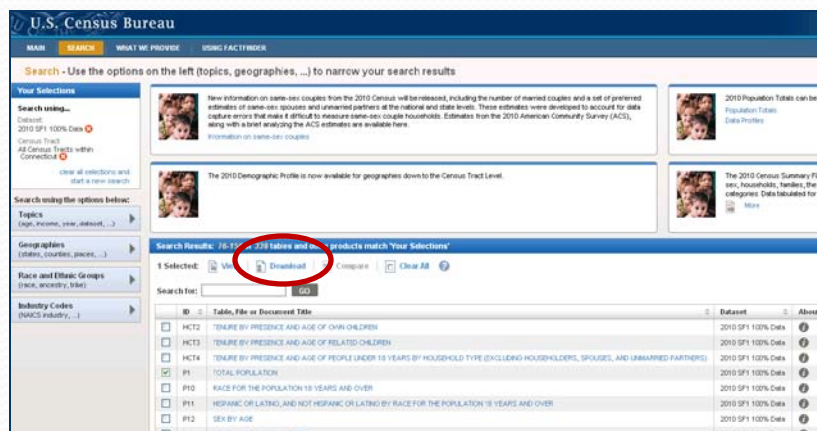
Race (P3)

Age Groups and Sex: 2010 (QT-P1)

then **Download**.

See next page for more detailed files for race-ethnicity and race-ethnicity by age

Selecting State-Specific Census Tract Data



- Ideally, should use race-ethnicity instead of race alone. Should use this file:

Hispanic or Latino and not Hispanic by Race (P9)

Note: will have 8 mutually exclusive race-ethnic groups

- May need more detailed file of race-ethnic groups by age to enable age-standardization. The following files provide this:

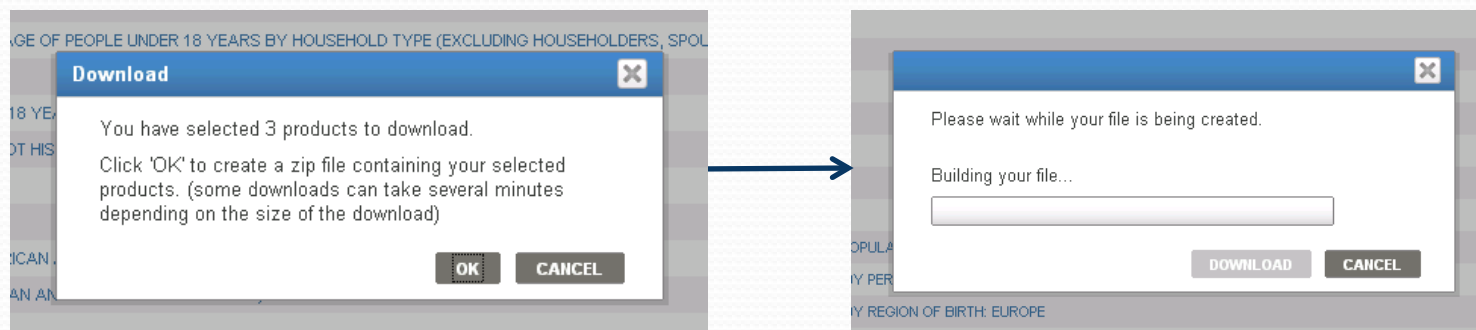
Sex by Age (in single year increments) for various mutually exclusive race-ethnic groups (8 files, PCT 12H through PCT 12O)

PCT 12H – Sex by Age Hispanic; PCT 12I – Sex by Age non-Hispanic whites; PCT 12J – Sex by Age non-Hispanic blacks; etc.

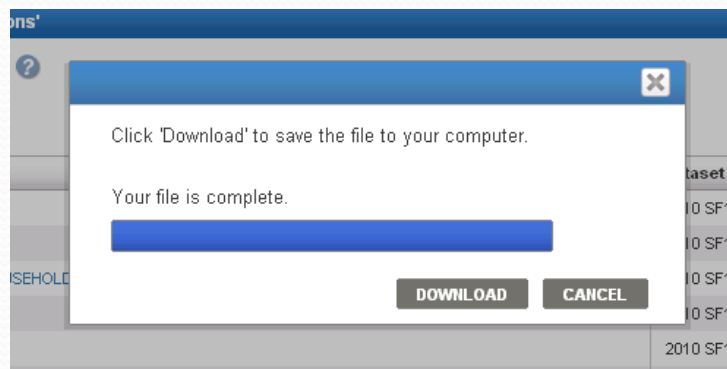
If select these, handle using the same steps as in the demonstration: Download, then clean.

Downloading State-Specific Census Tract Data

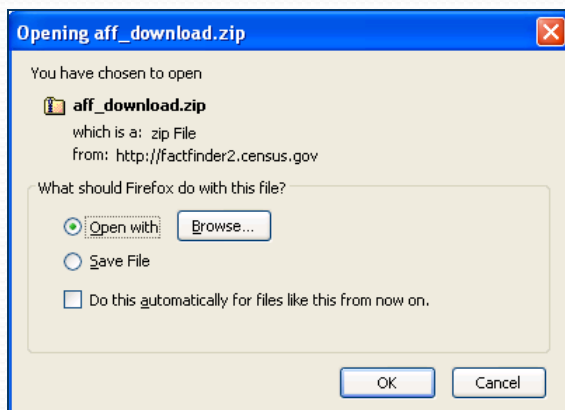
- Since the data files may be too large, a zip file will need to be created. Click **OK**.



- After the file is built, click on the **Download** button.

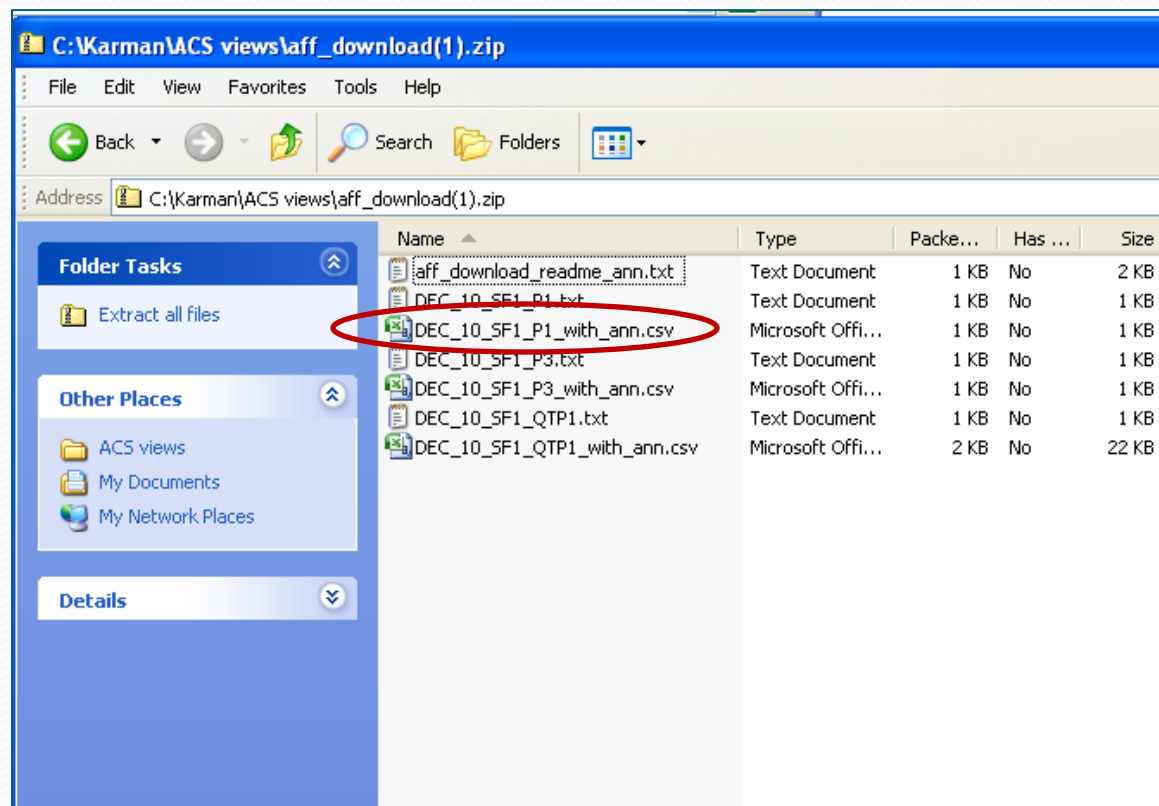


Downloading State-Specific Census Tract Data

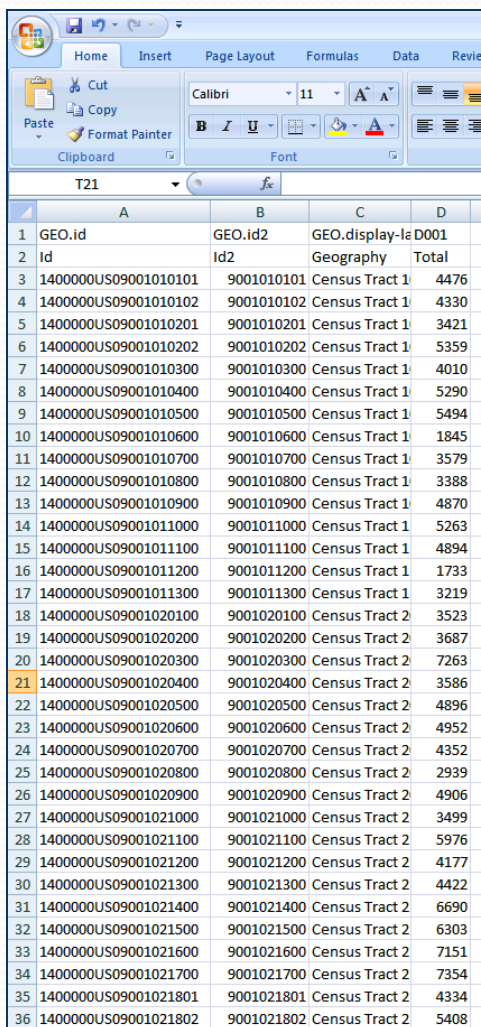


➤ Click **OK** to open the file.

- There will be a number of .TXT and .CSV files. The .TXT files provide background information about the data files.
- Open the .CSV file for Total Population (P1).

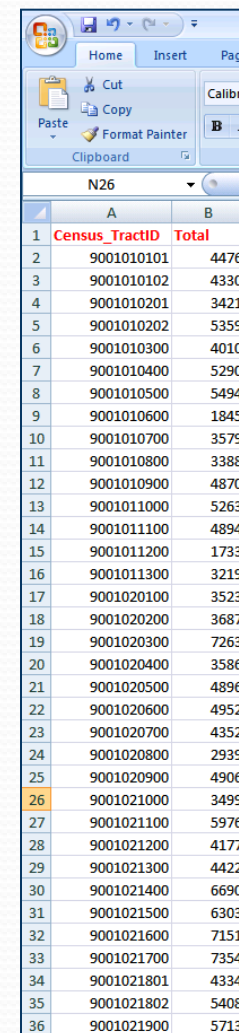


Selecting State-Specific Census Tract Data



	A	B	C	D
	GEO.id	GEO.id2	GEO.display-label	Total
1				
2	Id	Id2	Geography	Total
3	1400000US09001010101	9001010101	Census Tract 1	4476
4	1400000US09001010102	9001010102	Census Tract 1	4330
5	1400000US09001010201	9001010201	Census Tract 1	3421
6	1400000US09001010202	9001010202	Census Tract 1	5359
7	1400000US09001010300	9001010300	Census Tract 1	4010
8	1400000US09001010400	9001010400	Census Tract 1	5290
9	1400000US09001010500	9001010500	Census Tract 1	5494
10	1400000US09001010600	9001010600	Census Tract 1	1845
11	1400000US09001010700	9001010700	Census Tract 1	3579
12	1400000US09001010800	9001010800	Census Tract 1	3388
13	1400000US09001010900	9001010900	Census Tract 1	4870
14	1400000US09001011000	9001011000	Census Tract 1	5263
15	1400000US09001011100	9001011100	Census Tract 1	4894
16	1400000US09001011200	9001011200	Census Tract 1	1733
17	1400000US09001011300	9001011300	Census Tract 1	3219
18	1400000US09001020100	9001020100	Census Tract 2	3523
19	1400000US09001020200	9001020200	Census Tract 2	3687
20	1400000US09001020300	9001020300	Census Tract 2	7263
21	1400000US09001020400	9001020400	Census Tract 2	3586
22	1400000US09001020500	9001020500	Census Tract 2	4896
23	1400000US09001020600	9001020600	Census Tract 2	4952
24	1400000US09001020700	9001020700	Census Tract 2	4352
25	1400000US09001020800	9001020800	Census Tract 2	2939
26	1400000US09001020900	9001020900	Census Tract 2	4906
27	1400000US09001021000	9001021000	Census Tract 2	3499
28	1400000US09001021100	9001021100	Census Tract 2	5976
29	1400000US09001021200	9001021200	Census Tract 2	4177
30	1400000US09001021300	9001021300	Census Tract 2	4422
31	1400000US09001021400	9001021400	Census Tract 2	6690
32	1400000US09001021500	9001021500	Census Tract 2	6303
33	1400000US09001021600	9001021600	Census Tract 2	7151
34	1400000US09001021700	9001021700	Census Tract 2	7354
35	1400000US09001021801	9001021801	Census Tract 2	4334
36	1400000US09001021802	9001021802	Census Tract 2	5408

- Save a copy of the table.
- Delete the first row.
- Rename **Id2** as **Census_TractID**.
- Delete the other columns, keeping only **Census_TractID** and **Total**.
- Save the file (Save or Save As depending on whether you would like to keep a copy of the original file). In this case, we will call the file **Census_Total**.



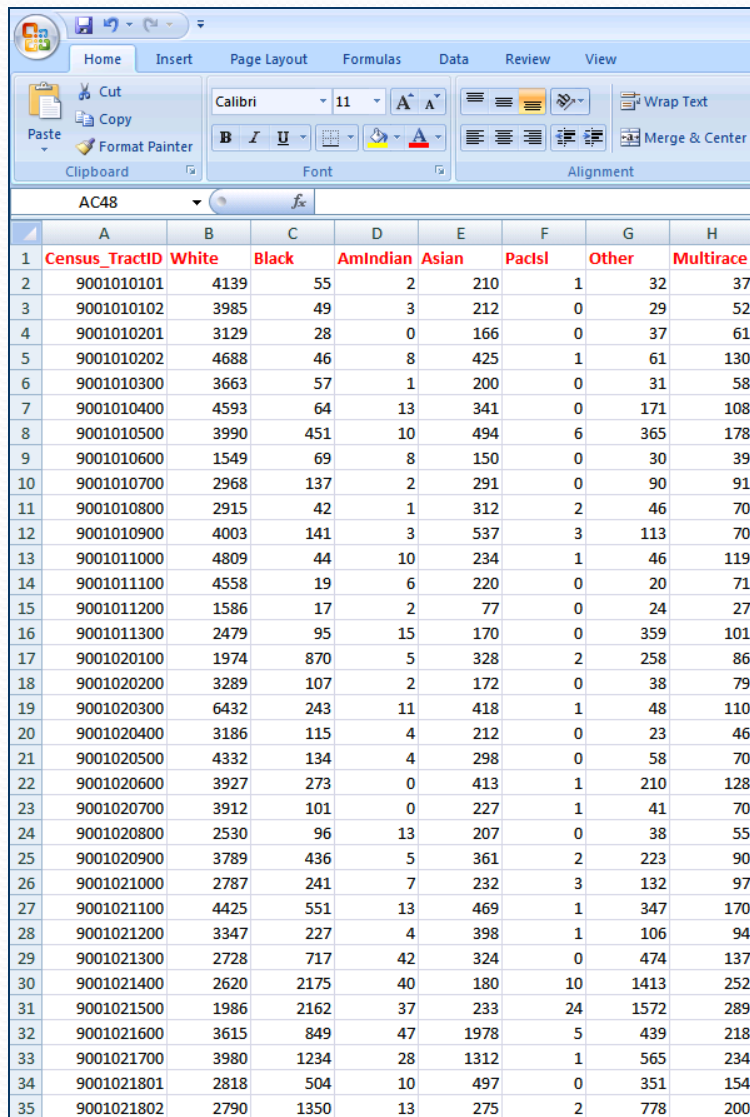
	A	B
	Census_TractID	Total
1		
2	9001010101	4476
3	9001010102	4330
4	9001010201	3421
5	9001010202	5359
6	9001010300	4010
7	9001010400	5290
8	9001010500	5494
9	9001010600	1845
10	9001010700	3579
11	9001010800	3388
12	9001010900	4870
13	9001011000	5263
14	9001011100	4894
15	9001011200	1733
16	9001011300	3219
17	9001020100	3523
18	9001020200	3687
19	9001020300	7263
20	9001020400	3586
21	9001020500	4896
22	9001020600	4952
23	9001020700	4352
24	9001020800	2939
25	9001020900	4906
26	9001021000	3499
27	9001021100	5976
28	9001021200	4177
29	9001021300	4422
30	9001021400	6690
31	9001021500	6303
32	9001021600	7151
33	9001021700	7354
34	9001021801	4334
35	9001021802	5408
36	9001021900	5713

Selecting State-Specific Census Tract Data

	A	B	C	D	E	F	G	H	I	J	K	L
	GEO.id	GEO.id2	GEO.displ	Total:	Total:	Total:	Total:	Total:	Total:	Total:	Total:	
	Id	Id2	Geography	White alo	Black or A	American	Asian alor	Native Ha	Some Oth	Two or More Races		
1	1400000U	9E+09	Census Tr	4476	4139	55	2	210	1	32	37	
2	1400000U	9E+09	Census Tr	4330	3985	49	3	212	0	29	52	
3	1400000U	9E+09	Census Tr	3421	3129	28	0	166	0	37	61	
4	1400000U	9E+09	Census Tr	5359	4688	46	8	425	1	61	130	
5	1400000U	9E+09	Census Tr	4010	3663	57	1	200	0	31	58	
6	1400000U	9E+09	Census Tr	5290	4593	64	13	341	0	171	108	
7	1400000U	9E+09	Census Tr	5494	3990	451	10	494	6	365	178	
8	1400000U	9E+09	Census Tr	1845	1549	69	8	150	0	30	39	
9	1400000U	9E+09	Census Tr	3579	2968	137	2	291	0	90	91	
10	1400000U	9E+09	Census Tr	3388	2915	42	1	312	2	46	70	
11	1400000U	9E+09	Census Tr	4870	4003	141	3	537	3	113	70	
12	1400000U	9E+09	Census Tr	5263	4809	44	10	234	1	46	119	
13	1400000U	9E+09	Census Tr	4894	4558	19	6	220	0	20	71	
14	1400000U	9E+09	Census Tr	1733	1586	17	2	77	0	24	27	
15	1400000U	9E+09	Census Tr	3219	2479	95	15	170	0	359	101	
16	1400000U	9E+09	Census Tr	3523	1974	870	5	328	2	258	86	
17	1400000U	9E+09	Census Tr	3687	3289	107	2	172	0	38	79	
18	1400000U	9E+09	Census Tr	7263	6432	243	11	418	1	48	110	
19	1400000U	9E+09	Census Tr	3586	3186	115	4	212	0	23	46	
20	1400000U	9E+09	Census Tr	4896	4332	134	4	298	0	58	70	
21	1400000U	9E+09	Census Tr	4952	3927	273	0	413	1	210	128	
22	1400000U	9E+09	Census Tr	4352	3912	101	0	227	1	41	70	
23	1400000U	9E+09	Census Tr	2939	2530	96	13	207	0	38	55	
24	1400000U	9E+09	Census Tr	4906	3789	436	5	361	2	223	90	
25	1400000U	9E+09	Census Tr	3499	2787	241	7	232	3	132	97	
26	1400000U	9E+09	Census Tr	5976	4425	551	13	469	1	347	170	
27	1400000U	9E+09	Census Tr	4177	3347	227	4	398	1	106	94	
28	1400000U	9E+09	Census Tr	4422	2728	717	42	324	0	474	137	
29	1400000U	9E+09	Census Tr	6690	2620	2175	40	180	10	1413	252	
30	1400000U	9E+09	Census Tr	6303	1986	2162	37	233	24	1572	289	
31	1400000U	9E+09	Census Tr	7151	3615	849	47	1978	5	439	218	
32	1400000U	9E+09	Census Tr	7354	3980	1234	28	1312	1	565	234	
33	1400000U	9E+09	Census Tr	4334	2818	504	10	497	0	351	154	

- Open the file for Race (P3) and save a copy of the table.
- Delete the first two rows.
- Rename **Id2** to **Census_TractID**.
- Rename the 7 race categories you will keep:
 - White
 - Black
 - AmIndian
 - Asian
 - Paclsl
 - Other
 - Multirace
- Delete the other columns, keeping only **Census_TractID** and the race categories.

Selecting State-Specific Census Tract Data



	A	B	C	D	E	F	G	H
	Census_TractID	White	Black	AmIndian	Asian	PacIsl	Other	Multirace
1	9001010101	4139	55	2	210	1	32	37
2	9001010102	3985	49	3	212	0	29	52
3	9001010201	3129	28	0	166	0	37	61
4	9001010202	4688	46	8	425	1	61	130
5	9001010300	3663	57	1	200	0	31	58
6	9001010400	4593	64	13	341	0	171	108
7	9001010500	3990	451	10	494	6	365	178
8	9001010600	1549	69	8	150	0	30	39
9	9001010700	2968	137	2	291	0	90	91
10	9001010800	2915	42	1	312	2	46	70
11	9001010900	4003	141	3	537	3	113	70
12	9001011000	4809	44	10	234	1	46	119
13	9001011100	4558	19	6	220	0	20	71
14	9001011200	1586	17	2	77	0	24	27
15	9001011300	2479	95	15	170	0	359	101
16	9001020100	1974	870	5	328	2	258	86
17	9001020200	3289	107	2	172	0	38	79
18	9001020300	6432	243	11	418	1	48	110
19	9001020400	3186	115	4	212	0	23	46
20	9001020500	4332	134	4	298	0	58	70
21	9001020600	3927	273	0	413	1	210	128
22	9001020700	3912	101	0	227	1	41	70
23	9001020800	2530	96	13	207	0	38	55
24	9001020900	3789	436	5	361	2	223	90
25	9001021000	2787	241	7	232	3	132	97
26	9001021100	4425	551	13	469	1	347	170
27	9001021200	3347	227	4	398	1	106	94
28	9001021300	2728	717	42	324	0	474	137
29	9001021400	2620	2175	40	180	10	1413	252
30	9001021500	1986	2162	37	233	24	1572	289
31	9001021600	3615	849	47	1978	5	439	218
32	9001021700	3980	1234	28	1312	1	565	234
33	9001021801	2818	504	10	497	0	351	154
34	9001021802	2790	1350	13	275	2	778	200

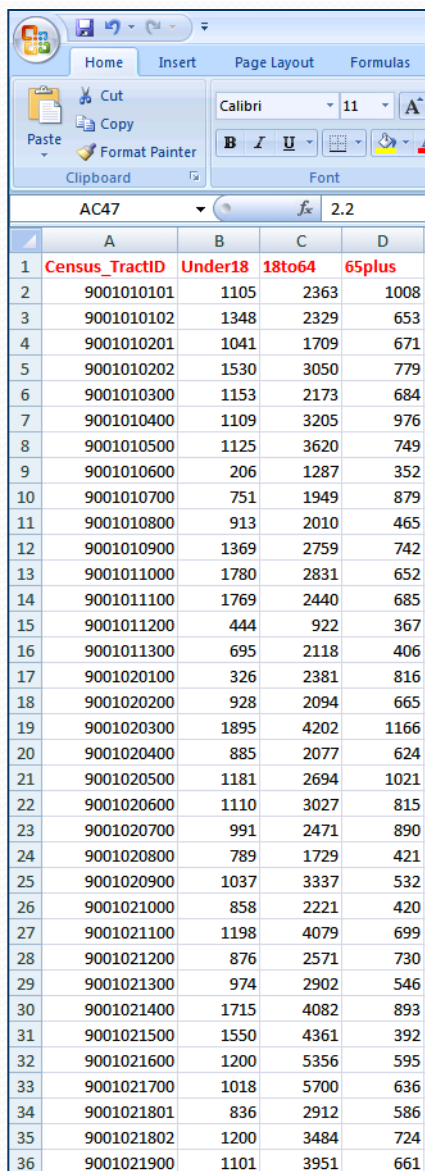
- Save (Save As if you would like to keep an original copy for future reference). In this case, we will call the file Census_Race.

Selecting State-Specific Census Tract Data

	A	B	EN	EU	GY	GZ	HA	HB	HC
1			S21	S22	S30	S30	S30	S30	S30
2			Total population	Total population	Total population	Total population	Total population	Total population	Total population
3			Under 18 years	18 to 64 years	65 years and over	65 years and over	65 years and over	65 years and over	65 years and over
4									
5									
6			SUBHD0101	SUBHD0101	SUBHD0101	SUBHD0101	SUBHD0101	SUBHD0101	SUBHD0101
7	GEO.id	GEO.id2	Number	Number	Number	Number	Number	Percent	Percent
8	Id	Id2	Both sexes	Both sexes	Both sexes	Male	Female	Both sexes	Male
9	1400000US0	9001010101	1105	2363	1008	418	590	22.5	
10	1400000US0	9001010102	1348	2329	653	325	328	15.1	
11	1400000US0	9001010201	1041	1709	671	275	396	19.6	
12	1400000US0	9001010202	1530	3050	779	353	426	14.5	
13	1400000US0	9001010300	1153	2173	684	322	362	17.1	
14	1400000US0	9001010400	1109	3205	976	408	568	18.4	
15	1400000US0	9001010500	1125	3620	749	303	446	13.6	
16	1400000US0	9001010600	206	1287	352	132	220	19.1	
17	1400000US0	9001010700	751	1949	879	296	583	24.6	
18	1400000US0	9001010800	913	2010	465	201	264	13.7	
19	1400000US0	9001010900	1369	2759	742	326	416	15.2	
20	1400000US0	9001011000	1780	2831	652	303	349	12.4	
21	1400000US0	9001011100	1769	2440	685	298	387	14	
22	1400000US0	9001011200	444	922	367	171	196	21.2	
23	1400000US0	9001011300	695	2118	406	172	234	12.6	
24	1400000US0	9001020100	326	2381	816	321	495	23.2	
25	1400000US0	9001020200	928	2094	665	335	330	18	
26	1400000US0	9001020300	1895	4202	1166	560	606	16.1	
27	1400000US0	9001020400	885	2077	624	294	330	17.4	
28	1400000US0	9001020500	1181	2694	1021	436	585	20.9	
29	1400000US0	9001020600	1110	3027	815	334	481	16.5	
30	1400000US0	9001020700	991	2471	890	366	524	20.5	
31	1400000US0	9001020800	789	1729	421	178	243	14.3	
32	1400000US0	9001020900	1037	3337	532	203	329	10.8	
33	1400000US0	9001021000	858	2221	420	165	255	12	
34	1400000US0	9001021100	1198	4079	699	288	411	11.7	
35	1400000US0	9001021200	876	2571	730	294	436	17.5	

- Open the file for Age Groups and Sex: 2010 and save a copy of the table.
- Insert a row at the top.
- In this new row, rename the variables for **Under 18 years: Both sexes**, **18 to 64 years: Both sexes**, and **65 years and over: Both sexes**. In this case, we will call it **Under18**, **18to64**, and **65plus**, respectively.
- Also rename **Id2** to **Census_TractID** in the first row.
- Delete the rows in between the first row and the population estimates.
- NOTE: Columns in this screen shot have been hidden to show relevant variables.

Selecting State-Specific Census Tract Data



	A	B	C	D
1	Census_TractID	Under18	18to64	65plus
2	9001010101	1105	2363	1008
3	9001010102	1348	2329	653
4	9001010201	1041	1709	671
5	9001010202	1530	3050	779
6	9001010300	1153	2173	684
7	9001010400	1109	3205	976
8	9001010500	1125	3620	749
9	9001010600	206	1287	352
10	9001010700	751	1949	879
11	9001010800	913	2010	465
12	9001010900	1369	2759	742
13	9001011000	1780	2831	652
14	9001011100	1769	2440	685
15	9001011200	444	922	367
16	9001011300	695	2118	406
17	9001020100	326	2381	816
18	9001020200	928	2094	665
19	9001020300	1895	4202	1166
20	9001020400	885	2077	624
21	9001020500	1181	2694	1021
22	9001020600	1110	3027	815
23	9001020700	991	2471	890
24	9001020800	789	1729	421
25	9001020900	1037	3337	532
26	9001021000	858	2221	420
27	9001021100	1198	4079	699
28	9001021200	876	2571	730
29	9001021300	974	2902	546
30	9001021400	1715	4082	893
31	9001021500	1550	4361	392
32	9001021600	1200	5356	595
33	9001021700	1018	5700	636
34	9001021801	836	2912	586
35	9001021802	1200	3484	724
36	9001021900	1101	3951	661

- Delete the other columns, keeping only **Census_TractID**, **Under18**, **18to64**, and **65plus**.
- Save (Save As if you would like to keep an original copy for future reference). In this case, we will call the file **Census_Age**.

Outline

- Linking Outcome (disease) data with 2010 census tract
- Accessing the U.S. Census Bureau's American Community Survey (ACS) 2006-2010 data to get census tract poverty level
- Accessing the U.S. Census Bureau's Census 2010 data to get the census tract level denominator data
- **Linking cases to census tract poverty**
- Linking census tract poverty to denominator data
- Calculating incidence/prevalence by census tract poverty level

Linking Cases to Census Tract Poverty

- Open SAS with a new SAS editor.
- Bring in `Case_List.xls` and `ACS_Poverty.xls`. We will call the imported data `Case_List` and `ACS_Poverty`.
- Sort each table by `Census_TractID` then merge the tables by `Census_TractID`. We will call this data `Case_Poverty`.
- We have now created a linelist in which each observation contains case data AND census tract poverty level.
- *See the slide 34a to create a de-identified linelist.*

```

/*Import Case_List*/
proc import
    datafile = 'C:\Data\Case_List.xls'
    dbms = excel
    out = Case_List
    replace;
run;

proc contents data = Case_List;
run;

/*Import ACS_Poverty*/
proc import
    datafile = 'C:\Data\ACS_Poverty.xls'
    dbms = excel
    out = ACS_Poverty
    replace;
run;

proc contents data = ACS_Poverty;
run;

/*Merge Case_List and ACS_Poverty by Census_TractID*/
proc sort data = Case_List;
    by Census_TractID;
run;

proc sort data = ACS_Poverty;
    by Census_TractID;
run;

data Case_Poverty;
    merge Case_List ACS_Poverty;
    by Census_TractID;
    if caseID="" then delete;
run;

proc contents data = Case_Poverty;
run;

```

Creating a De-identified Linelist

- At this point, it is easy to delete the identifiers (name, address, census tract, etc.) leaving a simple linelist containing CaseID and census tract poverty level.
- We will do this in SAS by creating a new dataset called Case_Poverty_No_ID, but it could also be done in Excel or another software program of your choice. We will NOT use the de-identified dataset again in this example.

```

ACS_guidance.sas

/* Create a deidentified linelist containing poverty data */

data Case_Poverty_No_ID;
set Case_Poverty;
keep CaseID PctBelowPov;
run;

proc print data=Case_Poverty_No_ID;
run;

```

Output - (Untitled)		
The SAS System		
11:43 Monday, April 30, 2012		
Obs	CaseID	Pct BelowPov
1	CT1112A0002	16.3
2	CT1112A0001	63.4
3	CT1112A0003	43.3
4	CT1112A0004	48.8

Linking Cases to Census Tract Poverty

- In this case, the levels that we will be using for poverty are:
0-4.9%, 5-9.9%, 10-20%, and $\geq 20\%$.
- In order to get a case count for each of these levels, we will use the `Case_Poverty` data and perform `proc freqs` for the `PctBelowPov` variable using the `where` option to specify the poverty levels. A `proc freq` will be needed for each poverty level.
- After running the `proc freqs`, the case count can be found by looking at the `Log`.
- We will need the case count by poverty level for incidence calculations.

```
/*Determine Case Count by Poverty Level*/  
proc freq data = Case_Poverty;  
  tables PctBelowPov;  
  where 0 <= PctBelowPov < 5;  
run;  
proc freq data = Case_Poverty;  
  tables PctBelowPov;  
  where 5 <= PctBelowPov < 10;  
run;  
proc freq data = Case_Poverty;  
  tables PctBelowPov;  
  where 10 <= PctBelowPov < 20;  
run;  
proc freq data = Case_Poverty;  
  tables PctBelowPov;  
  where 20 <= PctBelowPov;  
run;
```

Linking Cases to Census Tract Poverty

0-4.9%	<pre> 294 /*Determine Case Count by Poverty Level*/ 295 proc freq data = kt.Case_Poverty; 296 tables PctBelowPov; 297 where 0 <= PctBelowPov < 5; 298 run; </pre> NOTE: There were 391 observations read from the data set KT.CASE_POVERTY. WHERE (PctBelowPov)=0 and PctBelowPov<5); NOTE: PROCEDURE FREQ used (Total process time): real time 0.03 seconds cpu time 0.01 seconds
5-9.9%	<pre> 299 proc freq data = kt.Case_Poverty; 300 tables PctBelowPov; 301 where 5 <= PctBelowPov < 10; 302 run; </pre> NOTE: There were 170 observations read from the data set KT.CASE_POVERTY. WHERE (PctBelowPov)=5 and PctBelowPov<10); NOTE: PROCEDURE FREQ used (Total process time): real time 0.00 seconds cpu time 0.00 seconds
10-19.9%	<pre> 303 proc freq data = kt.Case_Poverty; 304 tables PctBelowPov; 305 where 10 <= PctBelowPov < 20; 306 run; </pre> NOTE: There were 139 observations read from the data set KT.CASE_POVERTY. WHERE (PctBelowPov)=10 and PctBelowPov<20); NOTE: PROCEDURE FREQ used (Total process time): real time 0.01 seconds cpu time 0.01 seconds
≥20%	<pre> 307 proc freq data = kt.Case_Poverty; 308 tables PctBelowPov; 309 where 20 <= PctBelowPov; 310 run; </pre> NOTE: There were 127 observations read from the data set KT.CASE_POVERTY. WHERE PctBelowPov>=20; NOTE: PROCEDURE FREQ used (Total process time): real time 0.01 seconds cpu time 0.01 seconds

Output - (Untitled) Log - (Untitled) ACS_guidance.sas

- After running the `proc freqs`, the case counts by poverty level can be found by looking at the Log.

Linking Cases to Census Tract Poverty

- You will also need to determine the case counts for each race by poverty level. This can be done using Excel or SAS. Ultimately, you will need to determine the case counts as follows

PctBelowPov	White	Black	AmIndian	Asian PacIsl	Other	Multirace
0-4.9%						
5-9.9%						
10-19.9%						
>20%						

- The same is true for age category.

Age Category	Under18	18to64	65plus
0-4.9%			
5-9.9%			
10-19.9%			
>20%			

Outline

- Linking Outcome (disease) data with 2010 census tract
- Accessing the U.S. Census Bureau's American Community Survey (ACS) 2006-2010 data to get census tract poverty level
- Accessing the U.S. Census Bureau's Census 2010 data to get the census tract level denominator data
- Linking cases to census tract poverty
- **Linking census tract poverty to denominator data**
- Calculating incidence/prevalence by census tract poverty level

Linking Census Tract Poverty to Denominator Data

- Bring in `Census_Total.xls`. We will call the imported data `Census_Total`.
- Sort by `Census_TractID` then merge `Census_Total` with `ACS_Poverty` by `Census_TractID`. We will call this data `Poverty_Total`.

```
/*Import Census_Total*/  
❑ proc import  
    datafile = 'C:\Data\Census_Total.xls'  
    dbms = excel  
    out = Census_Total  
    replace;  
run;  
  
/*Merge ACS_Poverty and Census_Total by Cenus_TractID*/  
❑ proc sort data = Census_Total;  
    by Census_TractID;  
run;  
❑ data Poverty_Total;  
    merge ACS_Poverty Census_Total;  
    by Census_TractID;  
run;  
❑ proc contents data = Poverty_Total;  
run;
```

Linking Census Tract Poverty to Denominator Data

- In order to get a population count for each poverty level, we will use the **Poverty_Total** data and perform **proc prints** for the **sum** of the **Total** variable using the **where** option to specify the poverty levels. A **proc print** will be needed for each poverty level.

The SAS System 14:53 Wed

Obs	Census Tract ID	Pct BelowPov	Total
679	9009350100	61.1	4852
680	9009350200	36.0	3355
681	9009350300	50.1	1969
682	9009350400	36.9	2487
683	9009350500	49.8	2498
684	9009350800	35.5	5998
688	9009351200	41.5	3862
690	9009351400	21.3	4352
694	9009351700	48.7	2717
699	9009352200	36.6	2689
710	9009361401	47.3	4933
711	9009361402	33.0	3367
718	9011690400	33.0	2055
719	9011690500	34.8	2827
720	9011690700	22.5	1295
733	9011696400	24.0	6052
736	9011696700	25.9	5915
737	9011696800	27.7	3974
772	9011870300	28.9	6662
785	9013530200	20.2	6177
803	9013881200	65.9	10289
804	9013881300	33.4	6189
809	9015800300	36.5	6430
812	9015800600	28.0	4394
			444093

```

/*Determining Population by Poverty Level*/
proc print data = Poverty_Total;
  sum Total;
  where 0 <= PctBelowPov < 5;
run;
proc print data = Poverty_Total;
  sum Total;
  where 5 <= PctBelowPov < 10;
run;
proc print data = Poverty_Total;
  sum Total;
  where 10 <= PctBelowPov < 20;
run;
proc print data = Poverty_Total;
  sum Total;
  where 20 <= PctBelowPov;
run;

```

- After running the **proc prints**, the population counts can be found by looking at the **Output**.
- These will become the denominators for our incidence calculations.

Linking Census Tract Poverty to Denominator Data

```

/*Import Census_Race*/
proc import
    datafile = 'C:\Data\Census_Race.xls'
    dbms = excel
    out = Census_Race
    replace;

run;

proc contents data = Census_Race;
run;

/*Import ACS_Poverty*/
proc import
    datafile = 'C:\Data\ACS_Poverty.xls'
    dbms = excel
    out = ACS_Poverty
    replace;

run;

proc contents data = ACS_Poverty;
run;

/*Merge Census_Race and ACS_Poverty by Census_TractID*/
proc sort data = Census_Race;
    by Census_TractID;
run;

proc sort data = ACS_Poverty;
    by Census_TractID;
run;

data Race_Poverty;
    merge Census_Race ACS_Poverty;
    by Census_TractID;
run;

proc contents data = Race_Poverty;
run;

```

- The same can be done to determine the population for each race by poverty level.
- Import the `Census_Race` and `ACS_Poverty` files.
- Merge the data sets by `Census_TractID`.
- Run `proc prints` using the `sum` option for each race by poverty level.

```

/*Determine Population by Poverty Level*/
proc print data = Race_Poverty;
    sum White;
    where 0 <= PctBelowPov < 5;
run;

proc print data = race_Poverty;
    sum White;
    where 5 <= PctBelowPov < 10;
run;

proc print data = race_Poverty;
    sum White;
    where 10 <= PctBelowPov < 20;
run;

proc print data = race_Poverty;
    sum White;
    where 20 <= PctBelowPov;
run;

```

Linking Census Tract Poverty to Denominator Data

```

/*Import Census_Age*/
proc import
  datafile = 'C:\Data\Census_Age.xls'
  dbms = excel
  out = Census_Age
  replace;

run;

proc contents data = Census_Age;
run;

/*Import ACS_Poverty*/
proc import
  datafile = 'C:\Data\ACS_Poverty.xls'
  dbms = excel
  out = ACS_Poverty
  replace;

run;

proc contents data = ACS_Poverty;
run;

/*Merge Census_Age and ACS_Poverty by Census_TractID*/
proc sort data = Census_Age;
  by Census_TractID;
run;

proc sort data = ACS_Poverty;
  by Census_TractID;
run;

data Age_Poverty;
  merge Census_Age ACS_Poverty;
  by Census_TractID;
run;

proc contents data = Age_Poverty;
run;

```

- The same can be done to determine the population for each age category by poverty level.
- Import the **Census_Age** and **ACS_Poverty** files.
- Merge the data sets by **Census_TractID**.
- Run **proc prints** using the **sum** option for each age category by poverty level.

```

/*Determine Population by Poverty Level*/
proc print data = Age_Poverty;
  sum Under18;
  where 0 <= PctBelowPov < 5;
run;

proc print data = Age_Poverty;
  sum Under18;
  where 5 <= PctBelowPov < 10;
run;

proc print data = Age_Poverty;
  sum Under18;
  where 10 <= PctBelowPov < 20;
run;

proc print data = Age_Poverty;
  sum Under;
  where 20 <= PctBelowPov;
run;

```

Linking Census Tract Poverty to Denominator Data

- You will also need to determine the denominator for each race by poverty level. This can be done using Excel or SAS. Ultimately, you will need to determine the denominators as follows

PctBelowPov	White	Black	AmIndian	Asian PacIsl	Other	Multirace
0-4.9%						
5-9.9%						
10-19.9%						
>20%						

- The same is true for age category.

Age Category	Under18	18to64	65plus
0-4.9%			
5-9.9%			
10-19.9%			
>20%			

Outline

- Linking Outcome (disease) data with 2010 census tract
- Accessing the U.S. Census Bureau's American Community Survey (ACS) 2006-2010 data to get census tract poverty level
- Accessing the U.S. Census Bureau's Census 2010 data to get the census tract level denominator data
- Linking cases to census tract poverty
- Linking census tract poverty to denominator data
- **Calculating incidence/prevalence by census tract poverty level**

Calculating Incidence/Prevalence by Census Tract Poverty Level

Slide 46

- The incidence for each poverty level is determined as the case count for that poverty level divided by the population for the poverty level.

Incidence (0-4.9% Level) = (Case Count for 0-4.9% Level)/(Population for 0-4.9% Level)

Incidence (5-9.9% Level) = (Case Count for 5-9.9% Level)/(Population for 5-9.9% Level)

Incidence (10-19.9% Level) = (Case Count for 10-19.9% Level)/(Population for 10-19.9% Level)

Incidence ($\geq 20\%$ Level) = (Case Count for $\geq 20\%$ Level)/(Population for $\geq 20\%$ Level)

EXAMPLE

Influenza-Associated Hospitalization Incidence by Census Tract Poverty Level

