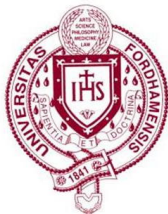


Downloading Map Data and American Community Survey Data

SDGB 7844

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Shape Files for the US (i.e., Map Data)

TIGER/Lines website: [link](#):

- Choose the year which corresponds to the **final** year of your data set. For example, since we are using 5-year American Community Survey data for 2011-2015, then choose: 2015 → Download → [Web interface](#)
- Select 2015 (the webpage may have reverted back to 2016), Choose “Layer type” based on the **smallest unit of geography you need**. For this assignment, you want census tracts, because you want to make a map of New York County made up of census tracts; therefore, census tract is the smallest geographical unit you are interested in.
- After choosing census tract, you will select New York; you will get a map containing all of the census tracts in the state of New York. You will have to remove the census tracts that do not pertain to New York County (like we removed Alaska and Hawaii from the US state map in Lecture 6).
- A folder of files will be downloaded. **Don't change the name of the folder or the files inside.** If you do, R may not be able to read the shapefiles correctly.

More technical stuff on shape files: [link](#)

The American Community Survey

- American Community Survey (ACS) ([link](#)) administered by U.S. Census Bureau
- for statistical purposes ONLY, individual survey data not available to other parts of the government
- demographic, economic, housing, and social characteristics
- used by governments (apportioning funds), businesses, researchers, and us!
- multi-year estimates combine data across several years → interpret as an estimate for entire period
- ** note: only compare multi-year estimates with non-overlapping years
- multi-year estimates ([link](#)):
 - 1-year → geographies with $\geq 65,000$ people
 - 3-year → geographies with $\geq 20,000$ people
 - 5-year → all geographies
- geographies ([link](#)): e.g., states, metropolitan areas, counties, census tracts

Data Source: American FactFinder

- American FactFinder website hosts the U.S. Census Bureau data
- Go to <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- Click on the link “get data” next to the American Community Survey in the “What We Provide” section. This should take you to a screen that looks similar to this:

The screenshot displays the American FactFinder interface. At the top, the U.S. Department of Commerce and United States Census Bureau logos are visible. The main navigation bar includes links for MAIN, COMMUNITY FACTS, GUIDED SEARCH, ADVANCED SEARCH (highlighted), and DOWNLOAD CENTER. Below the navigation bar, a search bar prompts users to refine their search results. The search results section shows a list of tables and documents, including 'AGE AND SEX', 'POPULATION 60 YEARS AND OVER IN THE UNITED STATES', and 'SELECTED CHARACTERISTICS OF THE NATIVE AND FOREIGN-BORN POPULATIONS'. The results are organized into columns: ID, Table, File or Document Title, Dataset, and About. The 'About' column contains icons for each result.

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

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, ...)
- EEO Occupation Codes (executives, analysts, ...)

Search Results: 1-25 of 97,530 tables and other products match "Your Selections" per page: 25

Refine your search results:

topic or table name state, county or place (optional) GO

☒ topics ☐ race/ancestry ☐ industries ☐ occupations

Selected: View Download Compare Clear All Reset Sort

Show results from: All available years All available programs

ID	Table, File or Document Title	Dataset	About
S0101	AGE AND SEX	2014 ACS 1-year estimates	?
S0102	POPULATION 60 YEARS AND OVER IN THE UNITED STATES	2014 ACS 1-year estimates	?
S0102PR	POPULATION 60 YEARS AND OVER IN PUERTO RICO	2014 ACS 1-year estimates	?
S0103	POPULATION 65 YEARS AND OVER IN THE UNITED STATES	2014 ACS 1-year estimates	?
S0103PR	POPULATION 65 YEARS AND OVER IN PUERTO RICO	2014 ACS 1-year estimates	?
S0501	SELECTED CHARACTERISTICS OF THE NATIVE AND FOREIGN-BORN POPULATIONS	2014 ACS 1-year estimates	?
S0502	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY PERIOD OF ENTRY INTO THE UNITED STATES	2014 ACS 1-year estimates	?
S0502PR	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY PERIOD OF ENTRY INTO PUERTO RICO	2014 ACS 1-year estimates	?
S0503	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: EUROPE	2014 ACS 1-year estimates	?
S0504	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: AFRICA, NORTHERN AMERICA, AND OCEANIA	2014 ACS 1-year estimates	?
S0505	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: ASIA	2014 ACS 1-year estimates	?
S0506	SELECTED CHARACTERISTICS OF THE FOREIGN-BORN POPULATION BY REGION OF BIRTH: LATIN AMERICA	2014 ACS 1-year estimates	?
S0601	SELECTED CHARACTERISTICS OF THE TOTAL AND NATIVE POPULATIONS IN THE UNITED STATES	2014 ACS 1-year estimates	?
S0601PR	SELECTED CHARACTERISTICS OF THE TOTAL AND NATIVE POPULATIONS IN PUERTO RICO	2014 ACS 1-year estimates	?

ACS Data

- For your homework assignment, you want to extract information corresponding to:
 - New York County census tracts
 - 5-year ACS estimates for the period 2011-2015
- To get this data:
 - Use blue tabs on the left side of the screen to help you choose the table containing the information in which you are interested.
 - Note the website can be a little finicky so sometimes changing the order of how you select the settings may make a difference.
 - You will have to repeat these steps twice: once to get Table DP03 and once to get Table DP04.
 - Do not change the names of the files and folders! We will not be able to grade your assignment if you do.

ACS Data: Select Geography Parameter

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, ...)

EEO Occupation Codes
(executives, analysts, ...)


Select from: ☒ most requested geographic types ☐ all geographic types

Select a geographic type:

- ✓ -- select a geographic type --
- United States - 010
- Region - 020
- Division - 030
- State - 040
 - County - 050
 - County Subdivision - 060
 - **Census Tract - 140**
 - Block Group - 150
- Equal Employment Opportunity County Set - 902
- Place - 160
- Estimates Universe Place - 162
- Economic Place - E60
- County (or part) - E65
- Consolidated City - 170
- Place within Consolidated City (or part) - 172
- Congressional District - 500
- School District (Elementary)/Remainder - 950
- School District (Secondary)/Remainder - 960
- School District (Unified)/Remainder - 970
- Metropolitan Statistical Area/Micropolitan Statistical Area (or part) - 320
 - Principal City (or part) - 321
 - Area Outside of Metropolitan Statistical Area/Micropolitan Statistical Area (or part) - E32
- Combined Statistical Area (or part) - 340
- New England City and Town Area (or part) - 360
- 5-Digit ZIP Code Tabulation Area - 860
- 5-Digit ZIP Code - 861
- Commodity Flow Survey Area/Remainder - E33
- American Indian Area/Alaska Native Area/Hawaiian Home Land - 250
- Metropolitan Statistical Area/Micropolitan Statistical Area - 310
 - State (or part) - 311
 - Principal City (or part) - 312
- Combined Statistical Area - 330
- Urban Area - 400
- Puerto Rico Planning Region - 904
- American Housing Survey Area - 906
- Commercial Region - E20

Selected: View Download Compare Clear All Reset Sort

ACS Data: Select Geography Parameter Part 2

American Community Survey 

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

[load search](#) | [save 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, ...)

EEO Occupation Codes
(executives, analysts, ...)

Select Geographies

List	Name	Address	Map
------	------	---------	-----

Select geographies to add to Your Selections 

Select from: ☒ most requested geographic types ☐ all geographic types

Select a geographic type:
..... Census Tract - 140

Select a state:
New York

Select a county:
New York

Select one or more geographic areas and click **Add to Your Selections**:

All Census Tracts within New York County, New York.
All fully/partially Urban Census Tracts within New York County, New York
Census Tract 1, New York County, New York
Census Tract 2.01, New York County, New York
Census Tract 2.02, New York County, New York
Census Tract 5, New York County, New York
Census Tract 6, New York County, New York
Census Tract 7, New York County, New York
Census Tract 8, New York County, New York
Census Tract 9, New York County, New York

ADD TO YOUR SELECTIONS **ABOUT THIS GEOGRAPHY**

Didn't find your geographic type? Click the 'all geographic types' radio button above, or try the

ACS Data: Select Time Parameter

Your Selections

Search using...

Program:
American Community Survey

Census Tract:
All Census Tracts within New York
County, New York

clear all selections and
start a new search

load search | save 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, ...)

EEO Occupation Codes
(executives, analysts, ...)

Search Results: 1-25 of 6,536 tables and other products match "Your Selections"

Select Topics

CLOSE

Select Topics to add to 'Your Selections'

People

Housing

Year

Product Type

Program

Dataset

2015 ACS 5-year estimates (950)

2015 ACS 5-year Selected Population Tables (147)

2014 ACS 5-year estimates (941)

2013 ACS 5-year estimates (939)

2012 ACS 5-year estimates (924)

2011 ACS 5-year estimates (853)

2010 ACS 5-year Selected Population Tables (263)

2010 ACS 5-year estimates (852)

2009 ACS 5-year estimates (667)

2009 ACS 3-year estimates (1)

2009 ACS 1-year estimates (1)

Note: The Race & Ethnicity topic is available under the Race and Ethnic Groups button on the left.

☐ Include archived products in your search

ACS Data: Selecting a Table

- At the top, type DP03 (or DP04) and click GO.

Refine your search results: DP03 state, county or place (optional) GO ?

DP03: SELECTED ECONOMIC CHARACTERISTICS

Selected: View Download Compare Clear All Reset Sort ?

- The table should appear like the image below:

Your Selections

Search using...
Search: DP03: SELECTED ECONOMIC CHARACTERISTICS
Program: American Community Survey
Dataset: 2015 ACS 5-year estimates
Census Tract: All Census Tracts within New York County, New York
[clear all selections and start a new search](#)
[load search](#) | [save search](#)

Search using the options below:

Search Results: 1 of 1 tables and other products match "Your Selections"

Refine your search results: topic or table name state, county or place (optional) GO ?

topics race/ancestry industries occupations

Selected: View Download Compare Clear All Reset Sort ?

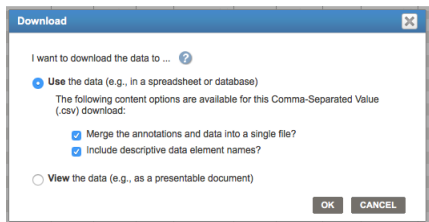
ID	Table, File or Document Title	Dataset	About
<input type="checkbox"/>	DP03 SELECTED ECONOMIC CHARACTERISTICS	2015 ACS 5-year estimates	?

Selected: View Download Compare Clear All Reset Sort ?

- Click on the blue table name, which will take you to the table. Then click Download.

Downloading the Files

Make sure these settings are selected before clicking OK:



Downloading the Files

- a folder called “ACS_15_5YR_DP03” will be downloaded:
 - “ACS_15_5YR_DP03” is called the Table ID and uniquely identifies the table
 - “ACS” → American Community Survey data
 - “15” → data ending with the year 2015
 - “5YR” → five-year aggregated data (in this case 2011-2015; as opposed to 1- or 3-year data)
 - “DP03” → table number
- inside this folder, there will be four files:
 - “aff_download_readme_ann.txt” → information on the content of the files in the folder
 - “ACS_15_5YR_DP03_metadata.csv” → file with column codes and column descriptions
 - “ACS_15_5YR_DP03_with_ann.csv” → data file
 - “ACS_15_5YR_DP03.txt” → information on how to interpret the data file (important!)
- Your data is always in the file called “[Table ID]_with_ann.csv” and can be uploaded to R using `read.csv()`

Understanding “[Table ID]_with_ann.csv”

In addition to the information contained in “ACS_15_5YR_DP03.txt”,

- `GEO.id` → unique geography code among all U.S. Census Bureau geography codes
- `GEO.id2` → unique geography code among all geography codes in data set (note that `GEO.id2` is a shortened version of `GEO.id`)
 - each row of the data set represents a different geography (e.g., all counties in a state, all states in a country, etc.) and `GEO.id2` uniquely identifies them
 - in this example, we only want data for one geography, the New York metropolitan area, so we only have one row in the data set
- `GEO.display-label` → name of geography in English
- variable columns of the form `HD01_VD**` → an estimate (e.g., mean, median, total) of variable `VD**` (or `VC`), its margin of error is given in column `HD02_VD**`
- variable columns of the form `HD03_VD**` → a percentage estimate of variable `VD**` (or `VC`), its margin of error is given in column `HD04_VD**` (not applicable for our arriving at work example)

FIPS Codes

- FIPS = Federal Information Processing Standard
- code for every geographic area in the US and its associated territories
- different from USPS codes (U.S. Postal Service) state abbreviations
- USPS and FIPS codes for states and territories ([link](#)):

state	USPS code	FIPS code
California	CA	06
District of Columbia	DC	11
Illinois	IL	17
New York	NY	36
Ohio	OH	39
Pennsylvania	PA	42

- need the leading “0” in the codes (i.e., treat codes like character strings, not numbers)
- codes exist for counties, census tracts, etc. → ALL geographies
 - this is what the GEO.id/GEO.id2 codes are in the ACS data