

# Package ‘ACSDownload’

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**Type** Package

**Title** Obtain American Community Survey Summary File Data Tables from Census Bureau FTP Site

**Version** 0.1.0

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**Description** This R package helps you download and parse raw data from the Census Bureau American Community Survey 5-year Summary Files, providing demographic data at the block and tract levels of resolution. You can obtain data from the entire USA all at once using this package, for one or more tables. Typically the Census Bureau makes it easy to obtain data from one state at a time, not every block group in the US. There are roughly 220,000 block groups in the US, and around 74,000 tracts. Options for obtaining Census ACS data are listed here: <http://www.census.gov/programs-surveys/acs/data.html> Other data sources that may be relevant include Census geodatabases at <http://www.census.gov/geo/maps-data/data/tiger-data.html> and data at <http://www.census.gov/geo/maps-data/data/gazetteer.html> The analyze.stuff, proxistat, ejanalysis, and countyhealthrankings packages, once made public can be installed from github using the devtools package: `devtools::install_github(c("ejanalysis/analyze.stuff", "ejanalysis/proxistat", "ejanalysis/ejanalysis", "ejanalysis/countyhealthrankings"))`

**License** Artistic-2.0 + file LICENSE

**Depends** R (>= 3.1.3)

**LazyData** true

**Suggests** UScensus2010blocks, analyze.stuff, ejanalysis

**URL** <http://ejanalysis.github.io>  
<http://www.ejanalysis.com/>

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ACSdownload

*Obtain American Community Survey Summary File Data Tables from  
Census Bureau FTP Site*

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## Description

This R package helps you download and parse raw data from the Census Bureau American Community Survey 5-year Summary Files, providing demographic data at the block and tract levels of resolution. You can obtain data from the entire USA all at once using this package, for one or more tables. Typically the Census Bureau makes it easy to obtain data from one state at a time, not every block group in the US. There are roughly 220,000 block groups in the US, and around 74,000 tracts. Several options for obtaining Census ACS data are now listed here: <http://www.census.gov/programs-surveys/acs/data.html> Other data sources that may be relevant include Census geodatabases at <http://www.census.gov/geo/maps-data/data/tiger-data.html> and data at <http://www.census.gov/geo/maps-data/data/gazetteer.html>. Also see the help for [get.acs](#)

The key function in this package is [get.acs](#)

For ACS documentation, see <http://www.census.gov/programs-surveys/acs.html>

**Author(s)**

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**References**

<http://ejanalysis.github.io>  
<http://www.ejanalysis.com>

**See Also**

**acs** package (<http://cran.r-project.org/web/packages/acs/index.html>) which lets one obtain more limited amounts of ACS data but provides better tools for working with the data once obtained.

---

clean.mystates

*Utility to Clean Names of States for get.acs*

---

**Description**

Utility function used by [get.acs](#)

**Usage**

```
clean.mystates(mystates, testing = FALSE)
```

**Arguments**

mystates	Character vector, required. Defines which states, using 2-character abbreviations (case-insensitive), or 'all' for all available.
testing	Logical value, optional, FALSE by default. LIMITS STATES TO DC AND DE if TRUE.

**Details**

Not in FTP ACS Summary files:  
#53 60 AS American Samoa <NA>  
#54 66 GU Guam <NA>  
#55 69 MP Northern Mariana Islands <NA>  
#57 74 UM U.S. Minor Outlying Islands <NA>  
#58 78 VI U.S. Virgin Islands <NA>

**Value**

Returns character vector of 2-character State abbreviations. Default is 50 States plus DC and PR and US total.

**See Also**

[get.acs](#) which uses this, and `data(lookup.states, package=proxistat)` using **proxistat** package

---

<code>clean.sumlevel</code>	<i>Utility to Clean SUMLEVEL for <code>get.acs</code></i>
-----------------------------	---

---

### Description

Utility function used by [get.acs](#).

### Usage

```
clean.sumlevel(sumlevel = "bg")
```

### Arguments

<code>sumlevel</code>	Character vector (1+ elements), optional, 'bg' by default. See details above.
-----------------------	---

### Details

Interprets as 'bg' any of these: 150, '150', 'blockgroup', 'block group', or 'bg' (or variants, ignoring case)

Interprets as 'tract' any of these: 140, '140', or 'tract' (or variants, ignoring case)

Interprets as 'both' any of these: 'both' or a vector that has both of the above terms (or variants, ignoring case).

### Value

Returns 'both', 'tract', or 'bg' (or stops with error if cannot interpret sumlevel input)

### See Also

[get.acs](#) which uses this

---

<code>datafile</code>	<i>Get name(s) of data file(s) for ACS 5-year summary file data</i>
-----------------------	---

---

### Description

Returns name(s) of data file(s) based on state(s), a sequence file number, and end year.

### Usage

```
datafile(state.abbrev, seqfilenum, end.year = "2012")
```

### Arguments

<code>state.abbrev</code>	Required vector of 2-character state abbreviation(s)
<code>seqfilenum</code>	Required single sequence file number used by ACS 5-year summary file
<code>end.year</code>	Optional end year for 5-year summary file, as character, defaulting to "2012"

**Value**

Returns character element that is name of data file such as e20105de0017000 or m20105de0017000

**See Also**

[get.acs](#)

---

download.datafiles	<i>Download American Community Survey 5-yr data files</i>
--------------------	---

---

**Description**

Attempts to download data files (estimates and margins of error) for specified states and tables, from the US Census Bureau's FTP site for American Community Survey (ACS) 5-year summary file data.

**Usage**

```
download.datafiles(tables, end.year = "2012", mystates, folder = getwd(),
  testing = FALSE, attempts = 5)
```

**Arguments**

tables	Required character vector of table numbers, such as c("B01001", "B03002")
end.year	Character element, optional, "2012" by default. Defines last of five years of summary file dataset; default is 2008-2012.
mystates	Character vector, required. Defines states/DC/PR for which files should be downloaded.
testing	Default to FALSE. If TRUE, provides info on progress of download.
attempts	Default is 5, specifies how many tries (maximum) for unzipping before trying to redownload and then give up.

**Value**

Effect is to download and save locally a number of data files.

**See Also**

[get.distances](#) which allows you to get distances between all points.

download.geo

*Download GEO txt file(s) with geo information for ACS***Description**

Download text file from US Census Bureau with geographic information for American Community Survey. The geo file is used to join data file(s) to FIPS/GEOID/NAME/SUMLEVEL/CKEY. Used by [get.acs](#)

**Usage**

```
download.geo(mystates, end.year = "2012", folder = getwd(),
             testing = FALSE, attempts = 5)
```

**Arguments**

mystates	vector of character 2-letter State abbreviations specifying which are needed
end.year	Specifies end year of 5-year summary file such as '2012' (default)
folder	folder to use for saving files - default is current working directory
testing	Default to FALSE. If TRUE, provides info on progress of download.
attempts	Default is 5, specifies how many tries (maximum) for unzipping before trying to redownload and then give up.

**Details**

Downloads to the current working directory unless another folder is specified. In contrast to the data files, the geo file is not zipped so does not have to be unzipped once downloaded. Key functions used:

- [url.to.find.zipfile](#)
- [geofile](#)
- `data(lookup.states, package='proxistat')`

**Value**

Side effect is downloading the file.

**See Also**

[get.acs](#) which uses this, and [get.read.geo](#)

**Examples**

```
## Not run:
download.geo("de")
download.geo( c("pr", "dc") )

## End(Not run)
```

---

download.lookup.acs	<i>Download File with Information about ACS 5-Year Summary File Tables</i>
---------------------	--

---

## Description

Download and read lookup table of information on American Community Survey (ACS) tables, from the Census Bureau, namely which sequence files on the FTP site contain which tables and which variables. NOTE: This is largely obsolete now that data(lookup.acs2013) and similar files for other years are in this package.

## Usage

```
download.lookup.acs(end.year = "2012", folder = getwd())
```

## Arguments

end.year	Character, optional, '2012' by default, which specifies the 2008-2012 dataset. Defines which 5-year summary file to use, based on end-year. Can be 2009 or later. Data for end.year='2014' is released December 2015, for example.
folder	Optional path to where to download file to, defaults to current working directory.

## Details

The source of this lookup table is, for example, [ftp://ftp.census.gov/acs2012\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.txt](ftp://ftp.census.gov/acs2012_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.txt)

## Value

By default, returns a data.frame with these fields:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

For ACS 2008-2012:

```
length(my.lookup[,1])
```

```
[1] 24741
```

```
names(my.lookup)
```

```
[1] "File.ID" "Table.ID" "Sequence.Number" "Line.Number" "Start.Position"
```

```
[6] "Total.Cells.in.Table" "Total.Cells.in.Sequence" "Table.Title" "Subject.Area"
```

## See Also

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [get.lookup.acs](#) which does the same without downloading file – uses the copy in data() Also see `data(lookup.acs2013)` and similar data for other years. Also see [get.acs](#), [get.lookup.file.name](#), [get.url.prefix.lookup.table](#)

## Examples

```
## Not run:  
lookup.acs <- download.lookup.acs()  
  
## End(Not run)
```

---

`format.est.moe`*Reorder cols of estimates and MOE table*

---

## Description

Start with a table that has all the estimates columns together, followed by all the MOEs columns, and create a new column sort order so that estimates will be interspersed with (next to) their MOE values, as FactFinder format provides.

## Usage

```
## S3 method for class 'est.moe'  
format(my.list.of.tables)
```

## Arguments

`my.list.of.tables`  
Required list of tables from earlier steps in [get.acs](#)

## Value

List of tables like input but with columns sorted in a new order.

## See Also

[get.acs](#) and [intersperse](#)



---

format.for.acs.package

*Reformat ACS Data from [get.acs](#) for the acs Package*


---

## Description

Work in progress \*\*\*\*\*

FUNCTION TO CREATE FILE FOR IMPORT TO acs PACKAGE USING SAME FORMAT FOR CSV AS THE AMERICAN FACT FINDER PROVIDES FOR TRACTS DOWNLOADS format is ESTIMATE, MOE, ESTIMATE, MOE... and KEY COLS ARE GEOID, FIPS, AND NAME, but also keeps SUMLEVEL and drops STUSAB

## Usage

```
## S3 method for class 'for.acs.package'
format(this.tab, end.year = "2012")
```

## Arguments

this.tab	Required list of tables from earlier steps in <a href="#">get.acs</a>
end.year	Optional, character, default is '2012'

## Details

Downloading C17002 from American Fact Finder results in a zip file with csv as follows:

ACS\_12\_5YR\_C17002\_with\_ann.csv is the data file with estimates and MOE values

First row is header with field names. Other rows are tract data.

Note that the fields are:

GEOID, FIPS, NAME, e1, m1, e2, m2, etc.

Columns 1,2,3 are geo information. Columns 4+ are data (estimate,moe,estimate,moe, etc.)

First 2 rows example:

```
GEO.id,GEO.id2,GEO.display-label,HD01_VD01,HD02_VD01,HD01_VD02,HD02_VD02,HD01_VD03,HD02_VD03,
0800000US110015000050000000501,110015000050000000501,"Census Tract 5.01, Washington
city, Washington city, District of Columbia, District of Columbia",3113,296,232,164,50,47,77,84,82,90,199,122,19,29,24
```

ACS\_12\_5YR\_C17002\_metadata.csv has the long and short variable names.

There is no header row. A header of field names would be these 2: "short.name", "long.name"

Each row here corresponds to one column of the data/moe fields (after the geo fields) in the main data file.

First few rows example:

GEO.id,Id

GEO.id2,Id2

GEO.display-label,Geography

HD01\_VD01,Estimate; Total:

HD02\_VD01,Margin of Error; Total:

HD01\_VD02,Estimate; Total: - Under .50

HD02\_VD02,Margin of Error; Total: - Under .50

JUST TRACTS were available from Fact Finder up to 2008-2012 ACS, so that is what acs package would typically import until recently.

Actually starting with 2009-2013 ACS, block groups will be available via AFF, but only by specifying one (or each) county in a State.

#####

### Value

Data.frame for use in **acs** package.

### See Also

[get.acs](#)

---

geofile	<i>Get name(s) of GEO txt file(s) with geo information for ACS</i>
---------	--

---

### Description

Get name of text file used by US Census Bureau with geographic information for American Community Survey. That geo file can be used to join data file(s) to FIPS/GEOID/NAME/SUMLEVEL/CKEY.

### Usage

```
geofile(mystates, end.year = "2012")
```

### Arguments

mystates	vector of character 2-letter State abbreviations specifying which are needed
end.year	end.year of 5-year summary file such as '2012' (default)

### Value

Character vector of file names, example: "g20105md.txt" Note this is only needed once per state, not once per seqfile. (It might even be available as a single US file?)

### See Also

[get.acs](#) and [download.geo](#) which uses this

---

get.acs	<i>Download Tables from American Community Survey (ACS) 5-year Summary File</i>
---------	---

---

## Description

This function will download and parse 1 or more tables of data from the American Community Survey's 5-year Summary File FTP site, for all Census tracts and/or block groups in specified State(s). Estimates and margins of error are obtained, as well as long and short names for the variables, which can be specified if only parts of a table are needed.

## Usage

```
get.acs(tables = "B01001", mystates = "all", end.year = "2012",
        base.path = getwd(), data.path = file.path(base.path, "acsdata"),
        output.path = file.path(base.path, "acsoutput"), sumlevel = "both",
        vars = "all", varsfile, new.geo = TRUE, write.files = FALSE,
        save.files = FALSE, write.acspkg = FALSE, testing = FALSE,
        noEditOnMac = FALSE)
```

## Arguments

tables	Character vector, optional. Defines tables to obtain, such as 'B01001' (the default). If the user specifies a table called 'ejsscreen' then a set of tables used by that tool are included. Those tables are "B01001", "B03002", "B15002", "B16002", "C17002", "B25034"
mystates	Character vector, optional, 'all' by default which means all available states plus DC and PR but not VI etc. Defines which States to include in downloads of data tables.
end.year	Character, optional, '2012' by default. Defines a valid ending year of a 5-year summary file. Can be '2010' for example. Not all years are tested.
base.path	Character, optional, getwd() by default. Defines a base folder to start from, in case data.path and/or output.path are not specified, in which case a subfolder under base.path, called acsdata or acsoutput respectively, will be created and used for downloads or outputs of the function.
data.path	Character, optional, file.path(base.path, 'acsdata') by default. Defines folder (created if does not exist) where downloaded files will be stored.
output.path	Character, optional, file.path(base.path, 'acsoutput') by default. Defines folder (created if does not exist) where output files (results of this function) will be stored.
sumlevel	Default is "both" (case insensitive) in which case tracts and block groups are returned. Also c('tract', 'bg') or c(140,150) and similar patterns work. If "tract" or 140 or some other match, but not block groups, is specified (insensitive to case, tract can be plural or part of a word, etc.), just tracts are returned. If "bg" or 150 or "blockgroups" or "block groups" or some other match (insensitive to case, singular or plural or part of a word) but no match on tracts is specified, just block groups are returned. Non-matching elements are ignored (e.g., sumlevel=c('bg', 'tracs', 'block') will return block groups but neither tracts (because of the typo) nor blocks (not available in ACS), with no warning – No warning is given if

	sumlevel is set to a list of elements where some are not recognized as matches to bg or tract, as long as one or more match bg, tracts, or both (or variants as already noted).
vars	Optional logical, default is FALSE (in which case all variables from each table will be returned unless otherwise specified – see below). This parameter specifies whether to pause and ask the user about which variables are needed in an interactive session in R. This gives the user a chance to prepare the file "variables needed.csv" (or just ensure it is ready), or to edit and save "variables needed.csv" within a window in the default editor used by R (the user is asked which of these is preferred). If vars=FALSE, the function just looks in data.folder for a file called "variables needed.csv" that, if used, must specify which variables to keep from each table. The format of that file should be the same as is found in the file "variables needed template.csv" created by this function – keeping the letter "Y" in the column named "keep" indicates the given variable is needed. A blank or "N" or other non-Y specifies the variable should be dropped and not returned by get.acs(). If the "variables needed.csv" file is not found, however, this function looks for and uses the file called "variables needed template.csv" which is written by this function and specifies all of the variables from each table, so all variables will be retained and returned by get.acs().
varsfile	See help for <a href="#">set.needed</a> for details. Optional name of file that can be used to specify which variables are needed from specified tables. If varsfile is specified, parameter vars is ignored, and the function just looks in folder for file called filename, e.g., "variables needed.csv" that should specify which variables to keep from each table.
new.geo	Default is TRUE. If FALSE, just uses existing downloaded geo file if possible. If TRUE, forced to download geo file even if already done previously.
write.files	Default is FALSE, but if TRUE then data-related csv files are saved locally – Saves longnames, full fieldnames as csv file, in working directory.
save.files	Default is FALSE, but if TRUE then various intermediate image files are saved as .RData files locally in working directory.
write.acspkg	Default is FALSE. If TRUE, saves csv file of tracts and file of block groups, for each of the tables, in a format that the Census Bureau American Fact Finder provides as downloadable tables. That format can be easily read in by the very useful <b>acs</b> package.
testing	Default is FALSE, but if TRUE more information is shown on progress, using cat() and while downloading, and more files (csv) are saved in working directory.
noEditOnMac	FALSE by default. If TRUE, do not pause to allow edit() to define which variables needed from each table, when on Mac OSX, even if vars=TRUE. Allows you to avoid problem in RStudio if X11 not installed.

## Details

The United States Census Bureau provides detailed demographic data by US Census tract and block group in the American Community Survey (ACS) 5-year summary file via their FTP site. For those interested in block group or tract data, Census Bureau tools tend to focus on obtaining data one state at a time rather than for the entire US at once. The `get.acs` function lets a user specify (tables and) variables needed. The code will look up what sequence files contain those tables. Using a table of variables for those selected tables, a user can specify variables or tables to drop by putting x or anything other than "Y" in the column specifying needed variables.

For ACS documentation, see for example:

<http://www.census.gov/programs-surveys/acs.html>

or

[http://www.census.gov/acs/www/Downloads/data\\_documentation/SumFileTemp/2012-5-Year/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.xls](http://www.census.gov/acs/www/Downloads/data_documentation/SumFileTemp/2012-5-Year/Sequence_Number_and_Table_Number_Lookup.xls)

linked from

<http://www.census.gov/programs-surveys/acs/data/summary-file.html>

##### ADDITIONAL NOTES #####  
NOTES ON NON-NUMERIC FIELDS IN ESTIMATE AND MOE FILES:

FROM 2008-2012 ACS 5-Year Summary File Technical Documentation:

Some data values represent unique situations where either the information to be conveyed is an explanation for the absence of data, represented by a #symbol in the data display, such as "(X)", or the information to be conveyed is an open-ended distribution, such as 115 or greater, represented by 115+. The following special data values can appear in the ACS Summary File table as an explanation for the absence of data:

2008-2012 ACS 5-Year Summary File Technical Documentation

? Missing Value = ?? \*\*\*\*\*

A missing string indicates that the estimate is unavailable. (This appears in the estimates and margins or error files as two commas adjacent to each #other without anything between them, or if the last cell in a data file is filtered then you get a comma followed immediately by a carriage return or #EOF.) A missing value indicates when an estimate is missing because of filtering for geographic restrictions, coefficients of variations (CV), or was #removed due to the Disclosure Review Board's (DRB) requirements. For more detail on filtering, please see Appendix C.5.

? Dot = ?.? \*\*\*\*\*

A dot indicates when the estimate has no sample observations or too few sample observations. In the margin of error files, this value could also indicate #that the margin of error is unavailable for a median estimate that has been replaced with a jam value.

? Zero = ?0?

A ?0? entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate. This #is similar to the ?\*\*\*\*\*? symbol used in American FactFinder.

? Negative 1 = ?-1?

This indicates that an estimate does not contain a Margin of Error. Tables B00001, B00002, and tables starting with B98 and B99 do not have margin of #error (MOE) associated with them. The MOE calculations are set to -1 for these tables.

? Jam Values for Medians

The following is a listing of the jam values for medians. For example, if there is an estimate of "2499" for table B10010, then it does not indicate a #dollar amount. It means that the median is

somewhere below 2,500 and thus isn't calculated.

```
"Jam Value", "Actual Meaning", "Use for Medians"
"0", "1 or less", "Age, Duration of Marriage"
"9", "9.0 or more", "Rooms"
"10", "10.0 or less", "Gross Rent as Percentage of Income, Owner Costs as Percentage of Income"
"50", "50.0 or more", "Gross Rent as Percentage of Income, Owner Costs as Percentage of Income"
"99", "100 or less", "Rent, Gross Rent, Selected Monthly Owner Costs, Monthly Housing Costs"
"101", "101 or more", "Duration of Marriage"
"116", "115 or more", "Age"
"199", "200 or less", "Tax"
"1001", "1,000 or more", "Selected Monthly Owner Costs"
"1939", "1939 or earlier", "Year Built"
"1969", "1969 or earlier", "Year Moved In"
"2001", "2,000 or more", "Rent, Gross Rent"
"2005", "2005 or later", "Year Built, Year Moved In"
"2499", "2,500 or less", "Income, Earnings"
"4001", "4,000 or more", "Selected Monthly Owner Costs, Monthly Housing Costs"
"9999", "10,000 or less", "Value"
"10001", "10,000 or more", "Tax"
"200001", "200,000 or more", "Income"
"250001", "250,000 or more", "Income, Earnings"
"1000001", "1,000,000 or more", "Value"
#####
```

in older 2005-2009 and 2005-2010 also these were the sequence numbers, but they change over time:

```
seqnum <- "0010" has ageunder5m = B01001.003 etc.
seqnum <- "0013" has hisp = B03002.012 etc.
seqnum <- "0040" has age25up = B15002.001 etc.
seqnum <- "0042" has lingisoshpanish = B16002.004 etc.
seqnum <- "0046" has povknownratio = C17002.001 etc.
```

NOTE: seq file 98 was used for year built in ACS 2005-2009 but in ACS 2006-2010 that is in seq file 97

```
#####
```

```
#####
NOTES on where to obtain ACS data - sources for downloads of summary file data
#####
```

FOR ACS SUMMARY FILE DOCUMENTATION, SEE

[http://www.census.gov/acs/www/data\\_documentation/summary\\_file/](http://www.census.gov/acs/www/data_documentation/summary_file/)

As of 12/2012, ACS block group/tract summary file ESTIMATES on FTP site is provided as either

## LARGER THAN NECESSARY:

\*\*\* all states and all tables in one huge tar.gz file (plus a zip of all geography codes),  
[ftp://ftp.census.gov/acs2011\\_5yr/summaryfile//2007-2011\\_ACSSF\\_All\\_In\\_2\\_Giant\\_Files\(Experienced-L/2011\\_ACS\\_Geography\\_Files.zip](ftp://ftp.census.gov/acs2011_5yr/summaryfile//2007-2011_ACSSF_All_In_2_Giant_Files(Experienced-L/2011_ACS_Geography_Files.zip)  
 2011\_ACS\_Geography\_Files.zip #  
 Tracts\_Block\_Groups\_Only.tar.gz # (THIS HAS ALL THE SEQUENCE FILES FOR EACH STATE  
 IN ONE HUGE ZIP FOLDER)

or

## MORE FOCUSED DOWNLOADS:

\*\*\* one zip file per sequence file PER STATE: (plus csv of geography codes)

[http://www2.census.gov/acs2011\\_5yr/summaryfile/2007-2011\\_ACSSF\\_By\\_State\\_By\\_Sequence\\_Table\\_Subset/DistrictOfColumbia/Tracts\\_Block\\_Groups\\_Only/20115dc0002000.zip](http://www2.census.gov/acs2011_5yr/summaryfile/2007-2011_ACSSF_By_State_By_Sequence_Table_Subset/DistrictOfColumbia/Tracts_Block_Groups_Only/20115dc0002000.zip) (Which has the e file and m file for this sequence file in this state)  
 g20115dc.csv (which lets you link FIPS to data)  
 so this would mean 50+ \* about 7 sequence files? = about 350 zip files?? each with 2 text files. Plus 50+ geo csv files. so downloading about 400 files and expanding to about 750 files, and joining into one big file.

OR

PREJOINED TO TIGER BLOCK GROUP BOUNDARIES SHAPEFILES/ GEODATABASES - ONE PER STATE HAS SEVERAL TABLES BUT NOT B16001, B16002 (many languages but tracts only), B16004 (has block groups but fewer languages)  
<http://www.census.gov/geo/maps-data/data/tiger-data.html>  
 BUT NOT one file per sequence file FOR ALL STATES AT ONCE.  
 Estimates & margin of error (MOE), (ONCE UNZIPPED), and GEOgraphies (not zipped) are in 3 separate files.

also, data for entire US for one seq file at a time, but not tract/bg – just county and larger? – is here, e.g.: [ftp://ftp.census.gov/acs2011\\_1yr/summaryfile//2011\\_ACSSF\\_By\\_State\\_By\\_Sequence\\_Table\\_Subset/UnitedStates/20111us0001000.zip](ftp://ftp.census.gov/acs2011_1yr/summaryfile//2011_ACSSF_By_State_By_Sequence_Table_Subset/UnitedStates/20111us0001000.zip)  
 GEO files:  
 Note the US file is not bg/tract level: geo for whole US at once doesn't have tracts and BGs [ftp://ftp.census.gov/acs2011\\_1yr/summaryfile//2011\\_ACSSF\\_By\\_State\\_By\\_Sequence\\_Table\\_Subset/UnitedStates/g20111us.csv](ftp://ftp.census.gov/acs2011_1yr/summaryfile//2011_ACSSF_By_State_By_Sequence_Table_Subset/UnitedStates/g20111us.csv)

## OTHER SOURCES include

- **acs** package for R - very useful for modest numbers of Census units rather than every block group in US
- **NHGIS.org** - very useful for block group (or tract/county/state/US) datasets
- DataFerrett (<http://dataferrett.census.gov/AboutDatasets/ACS.html>) – not all tracts in US at once
- American Fact Finder (<http://www.census.gov/acs/www/data/data-tables-and-tools/american-factfinder/>) (not block groups for ACS SF, and the tracts are not for the whole US at once)
- ESRI - commercial
- Geolytics - commercial
- etc.

## Value

By default, returns a list of ACS data tables and information about them, with these elements in the list:

bg, tracts, headers, and info. The headers and info elements are data.frames providing metadata such as short and long field names. The same column names are found in x\$info and x\$headers, but headers has more rows. The info table just provides information about each data variable in the estimates tables. The headers table provides similar information but made to match the bg or tract format, so the headers table has as many rows as bg or tracts has columns – enough for the estimates and MOE fields, and the basic fields such as FIPS. The info data.frame can look like this, for example:

```
'data.frame': xxxx obs. of 9 variables:
 $ table.ID : chr "B01001" "B01001" "B01001" "B01001" ...
 $ line : num 1 2 3 4 5 6 7 8 9 10 ...
 $ shortname : chr "B01001.001" "B01001.002" "B01001.003" "B01001.004" ...
 $ longname : chr "Total:" "Male:" "Under 5 years" "5 to 9 years" ...
 $ table.title : chr "SEX BY AGE" "SEX BY AGE" "SEX BY AGE" "SEX BY AGE" ...
 $ universe : chr "Universe: Total population" "Universe: Total population" "Universe: Total population" "Universe: Total population" ...
 $ subject : chr "Age-Sex" "Age-Sex" "Age-Sex" "Age-Sex" ...
 $ longname2 : chr "Total" "Male" "Under5years" "5to9years" ...
 $ longname.unique: chr "Total:|SEX BY AGE" "Male:|SEX BY AGE" "Under 5 years|SEX BY AGE" "5 to 9 years|SEX BY AGE" ...
```

## See Also

**acs** package which allows you to download and work with ACS data (using the API and your own key).



## Examples

```
## Not run:
t( get.table.info2(c('B01001', 'C17002', 'B03002')) ) # Basic info on ACS tables
out <- get.acs(mystates=c('dc','de')) # Data for just DC & DE, just the default table.
names(out$bg); cat('\n\n'); head(out$info)
cbind(longname=out$info$longname,
      total=colSums(out$bg[, names(out$bg) %in% out$info$shortname ]))
# to see data on 2 places, 1 per column, with short and long field names
cbind( out$headers$longname, t(out$bg[1:2, ] ) )
# to see 7 places, 1 per row, with short and long field name as header
head( rbind(out$headers$longname, out$bg) )[,1:7]
out <- get.acs(mystates='de', tables=c('B01001', 'C17002')) # just 2 tables for just Delaware
head(out$info); head(out$bg)
# uses all EJSCREEN defaults and the specified folders:
out <- get.acs(base.path='~', data.path='~/ACS/temp', output.path='~/ACS/results')
head(out$info); head(out$bg)
out <- get.acs(tables=c('ejscreen', 'B16001')) # all tables needed for EJSCREEN,
plus 'B16001', with variables specified in 'variables needed.csv', all states&DC &PR?
head(out$info); head(out$bg)

## End(Not run)
```

---

get.datafile.prefix	<i>Get first part of ACS datafile name.</i>
---------------------	---

---

## Description

Get the first part of the datafile name for the ACS 5-year summary file datafiles on the US Census Bureau FTP site.

## Usage

```
get.datafile.prefix(end.year = "2012")
```

## Arguments

end.year	Optional character, default is "2012", specifying last year of 5-year summary file data.
----------	--

## Value

By default, returns "20125"

## See Also

[get.acs](#), [datafile](#), [geofile](#), [get.zipfile.prefix](#)

---

get.field.info

*Get short and long field names etc for ACS tables*


---

## Description

Get info on tables from US Census Bureau for American Community Survey 5-year summary file.

## Usage

```
get.field.info(tables, end.year = "2012", table.info.only = FALSE,
               moe = FALSE, basic = FALSE)
```

## Arguments

tables	Required vector of tables such as "B01001"
end.year	Last year of 5-year summary file such as '2012' (default)
table.info.only	FALSE by default. If TRUE, only return info about the table(s), not variables in table(s).
moe	FALSE by default. Margin of error variables also included if TRUE, but their names are identical to those of estimates fields other than being MOE instead of estimate.
basic	FALSE by default. If TRUE, a very limited subset of the info is returned (just variable number and name). This parameter is ignored if table.info.only=TRUE

## Details

Uses [get.lookup.acs](#) but for 2012 version could just use `data(lookup.acs)`

## Value

data.frame of information about each table and each variable in table:

Value returned is data.frame of info about each table and also each variable in the table  
e.g., longname2 which is version where no spaces or colons or escaped quotation marks etc.

## See Also

[get.acs](#), [get.table.info](#), [get.table.info2](#) and [get.field.info](#)

## Examples

```
## Not run:
finfo <- get.field.info(c('B17020A', 'B17020H'))
cbind( names(tracts), substr(finfo$longname.unique[match(names(tracts), finfo$shortname)], 1, 100))
foundnames <- names(tracts)[names(tracts) %in% finfo$shortname]
cbind( foundnames, substr(finfo$longname.unique[match(foundnames, finfo$shortname)], 1, 100))

## End(Not run)
```

get.lookup.acs

*Get Information about ACS 5-Year Summary File Tables***Description**

Get lookup table of information on American Community Survey (ACS) tables, from the Census Bureau, namely which sequence files on the FTP site contain which tables and which variables. NOTE: This uses lazy loading from data(lookup.acs2013) and similarly for other years.

**Usage**

```
get.lookup.acs(end.year = "2012", folder = getwd())
```

**Arguments**

end.year	Character, optional, '2012' by default, which specifies the 2008-2012 dataset. Defines which 5-year summary file to use, based on end-year. Can be 2009 or later. Data for end.year='2014' is released December 2015, for example. Note: Function stops with error if given end.year is not yet added to this package.
folder	Ignored (leftover from when this was like download.lookup.acs)

**Details**

The source of this lookup table was, for example, [ftp://ftp.census.gov/acs2012\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.txt](ftp://ftp.census.gov/acs2012_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.txt)

**Value**

By default, returns a data.frame with these fields:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

For ACS 2008-2012:

```
length(my.lookup[,1])
```

```
[1] 24741
```

```
names(my.lookup)
```

```
[1] "File.ID" "Table.ID" "Sequence.Number" "Line.Number" "Start.Position"
```

```
[6] "Total.Cells.in.Table" "Total.Cells.in.Sequence" "Table.Title" "Subject.Area"
```

**See Also**

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [download.lookup.acs](#) to download the file from the Census FTP site. Also see `data(lookup.acs2013)` and similar data for other years. Also see [get.acs](#), [get.lookup.file.name](#), [get.url.prefix.lookup.table](#)

**Examples**

```
## Not run:
lookup.acs <- get.lookup.acs()

## End(Not run)
```

---

get.lookup.file.name	<i>Get name of Census file with Sequence and Table Numbers for ACS 5-year summary file data</i>
----------------------	---

---

**Description**

Returns name of text file provided by US Census Bureau, such as `Sequence_Number_and_Table_Number_Lookup.txt`, which provides the sequence numbers (file numbers) and table numbers for data in the American Community Survey (ACS) 5-year summary file.

**Usage**

```
get.lookup.file.name(end.year = "2012")
```

**Arguments**

end.year	Not yet implemented, but will be optional end year for 5-year summary file, as character, defaulting to "2012"
----------	--

**Value**

Returns character element that is name of file such as "Sequence\_Number\_and\_Table\_Number\_Lookup.txt"

**See Also**

[get.acs](#), [get.lookup.acs](#), [get.url.prefix.lookup.table](#). Also see `data(lookup.acs)`.

---

get.read.geo	<i>Download (if necessary) and merge GEO files for ACS</i>
--------------	--

---

### Description

Returns a data.frame of all states merged geo info and saves geo.RData to working directory.

### Usage

```
get.read.geo(mystates, new.geo = FALSE, folder = getwd(),
  end.year = "2012", testing = FALSE)
```

### Arguments

mystates	Character vector of 2-character state abbreviations, required.
new.geo	Logical value, optional, FALSE by default. If FALSE, if geo exists in memory don't download and parse again.
folder	Defaults to current working directory.
end.year	Defaults to "2012" to specify last year of 5-year summary file.
testing	Default to FALSE. If TRUE, provides info on progress of download.

### Details

Note that if this finds the geographic file in folder already, it will not download it again even if that file was corrupt. Read and compile geo data for entire USA with PR DC,  
This takes some time for the entire USA:

2 minutes 48 seconds on

MacBook Pro 16 GB RAM, SSD, 2.7 GHz Intel Core i7

R version: R 3.0.2 GUI 1.62 Snow Leopard build (6558)

8 minutes 20 seconds on

R version 3.0.1

Dell Latitude E6400, x86 Family 6 Model 23 Stepping 6 GenuineIntel ~2260 Mhz,

Total Physical Memory 4,096.00 MB, Available Physical Memory 1.97 GB, Total Virtual Memory

2.00 GB, Available Virtual Memory 1.94 GB,

Microsoft Windows XP Professional

#####

### Value

Returns a data.frame of all states geo info.

# FOR ACS 2008-2012, tract and block group counts:

```
table(geo$SUMLEVEL)
```

```
140 150
```

```
74001 220333
```

Remaining fields in geo:

"STUSAB" "SUMLEVEL" "GEOID" "FIPS" "KEY"

NOTE: do not really need GEOID or KEY.

GEOID is redundant, but might be useful for joining to shapefiles/ boundaries

Also, could specify here if "NAME" field from geo files should be dropped - it might be useful but takes lots of RAM and encoding of Spanish characters in Puerto Rico caused a problem in Mac OSX.

#### NOTE FROM CENSUS:

The ACS Summary File GEOID contains the necessary information to connect to the TIGER/Line Shapefiles, but it needs to be modified in order to exactly match up. Notice that the ACS GEOID, 05000US10001, contains the TIGER/Line GEOID string, 10001. In order to create an exact match of both GEOIDs, it is necessary to remove all of the characters before and including the letter S in the ACS Summary File. By removing these characters, the new GEOID in the ACS Summary File exactly matches the field GEOID in the TIGER/Line Shapefiles.

#### See Also

[get.acs](#) which uses this, and [download.geo](#)

---

get.table.info

*Obsolete/ older version of get.table.info2*

---

#### Description

Get info on tables from US Census Bureau for American Community Survey 5-year summary file.

#### Usage

```
get.table.info(tables, end.year = "2012", table.info.only = TRUE,
               moe = FALSE)
```

#### Arguments

tables	Required vector of tables such as "B01001"
end.year	Last year of 5-year summary file such as '2012' (default)
table.info.only	TRUE by default. See <a href="#">get.field.info</a>
moe	FALSE by default. If TRUE, returns MOE versions of field names and descriptions.

#### Value

data.frame of information about each table and each variable in table.

data.frame of information about each table and each variable in table:  
Table.ID, Line.Number, Table.Title, table.var, varname2

# Value returned is data.frame of info about each table and also each variable in the table:

```
Table.ID Line.Number Table.Title table.var varname2
7 B01001 NA SEX BY AGE <NA> SEXBYAGE
8 B01001 NA Universe: Total population <NA> UniverseTotalpopulation
9 B01001 1 Total: B01001.001 Total
10 B01001 2 Male: B01001.002 Male
```

**See Also**

[get.acs](#), [get.table.info](#), [get.table.info2](#) and [get.field.info](#)

---

get.table.info2	<i>Get field names etc for ACS tables</i>
-----------------	---

---

**Description**

Get info on tables from US Census Bureau for American Community Survey 5-year summary file.

**Usage**

```
get.table.info2(tables, end.year = "2012", table.info.only = TRUE,
  moe = FALSE)
```

**Arguments**

tables	Required vector of tables such as "B01001"
end.year	Last year of 5-year summary file such as '2012' (default)
table.info.only	TRUE by default. See <a href="#">get.field.info</a>
moe	FALSE by default. If TRUE, returns MOE versions of field names and descriptions.

**Details**

Wrapper for [get.field.info](#)

**Value**

data.frame of information about each table and each variable in table.

**See Also**

[get.acs](#), [get.table.info](#), [get.table.info2](#) and [get.field.info](#)

---

get.url.prefix	<i>Get URL prefix for FTP site folder(s) with ACS 5-year summary file data</i>
----------------	--

---

**Description**

Returns part of URL of folders (on Census Bureau FTP site) with zip file(s) based on end year.

**Usage**

```
get.url.prefix(end.year = "2012")
```

**Arguments**

`end.year`            Optional end year for 5-year summary file, as character, defaulting to "2012" but ignored if `url.prefix` is specified

**Value**

Returns character vector that is first part of URL such as "ftp://ftp.census.gov/acs2012\_5yr/summaryfile/2008-2012\_ACSSF\_By\_State\_By\_Sequence\_Table\_Subset"

**See Also**

[get.acs](#), [url.to.find.zipfile](#), [download.geo](#)

---

`get.url.prefix.lookup.table`

*Get first part of name(s) of URL(s) for ACS 5-year summary file data*

---

**Description**

Returns first part of URL(s) of folders (on Census Bureau FTP site) with zip file(s) based on end year.

**Usage**

```
get.url.prefix.lookup.table(end.year = "2012")
```

**Arguments**

`end.year`            Optional end year for 5-year summary file, as character, defaulting to "2012"

**Value**

Returns character element that is first part of URL such as "ftp://ftp.census.gov/acs2012\_5yr/summaryfile/"

**See Also**

[get.acs](#), [get.lookup.acs](#), [get.lookup.file.name](#)



---

get.zipfile.prefix	<i>Get first part of ACS zip file name.</i>
--------------------	---

---

### Description

Get the first part of the zipfile name for the ACS 5-year summary file datafiles on the US Census Bureau FTP site.

### Usage

```
get.zipfile.prefix(end.year = "2012")
```

### Arguments

end.year	Optional character, default is "2012", specifying last year of 5-year summary file data.
----------	--

### Value

By default, returns "20125"

### See Also

[get.acs](#), [get.datafile.prefix](#), [datafile](#), [geofile](#), [get.zipfile.prefix](#)

---

join.geo.to.tablist	<i>Join US ACS data and US geo files on FIPS</i>
---------------------	--

---

### Description

Read the processed csv files of estimates and MOE (margin of error) for American Community Survey (ACS) 5-year summary file data obtained from US Census FTP site, and join with geographic information from geo file.

### Usage

```
join.geo.to.tablist(mygeo, my.list.of.tables, save.csv = FALSE,
  sumlevel = "both", folder = getwd(), testing = FALSE, end.year = "")
```

### Arguments

mygeo	Required geo file. See <a href="#">get.acs</a> and <a href="#">get.read.geo</a>
my.list.of.tables	List of data tables resulting from prior steps in <a href="#">get.acs</a>
save.csv	FALSE by default. Specifies whether to save each data table as csv format file.
sumlevel	Default is "both", specifies if "tracts" or "blockgroups" or "both" should be used.
folder	Default is current working directory.
testing	Default is FALSE. If TRUE, prints more information.
end.year	Default is "" – used in naming file if save.csv=TRUE

**Value**

Returns a list of data.frames, where each element of the list is one ACS table, such as table B01001.

**See Also**

[get.acs](#) and [get.read.geo](#)

---

lookup.acs	<i>Sequence_Number_and_Table_Number_Lookup.txt for 2008-2012 ACS dataset</i>
------------	--

---

**Description**

This data set provides information about variables in tables forming the American Community Survey (ACS) 5-year summary file.

**Usage**

```
data('lookup.acs')
```

**Format**

A data.frame with these fields:

'data.frame': 24741 obs. of 8 variables:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

For ACS 2008-2012:

```
length(lookup.acs[,1])
```

```
[1] 24741
```

```
names(lookup.acs)
```

```
[1] "File.ID" "Table.ID" "Sequence.Number" "Line.Number" "Start.Position"
```

```
[6] "Total.Cells.in.Table" "Total.Cells.in.Sequence" "Table.Title" "Subject.Area"
```

**Source**

For the 2008-2012 dataset, [ftp://ftp.census.gov/acs2012\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.txt](ftp://ftp.census.gov/acs2012_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.txt) obtained July 2015.

**See Also**

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [get.lookup.acs](#) which downloads these files. Also see [get.acs](#).

**Examples**

```
## Not run:
data(lookup.acs, package='ACSdownload')
# or
lookup.acs <- ACSdownload::get.lookup.acs()
# or related info from
acs::acs.lookup()

## End(Not run)
```

---

lookup.acs2009	<i>Sequence_Number_and_Table_Number_Lookup.txt for 2005-2009 ACS dataset</i>
----------------	--

---

**Description**

This data set provides information about variables in tables forming the American Community Survey (ACS) 5-year summary file.

**Usage**

```
data('lookup.acs2009')
```

**Format**

A data.frame with these fields:

'data.frame': xxx obs. of 8 variables:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

**Source**

For the 2005-2009 dataset, [ftp://ftp.census.gov/acs2009\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.xls](ftp://ftp.census.gov/acs2009_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.xls) obtained July 2015.

**See Also**

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [get.lookup.acs](#) which downloads these files. Also see [get.acs](#).

**Examples**

```
## Not run:
data(lookup.acs2009, package='ACSdownload')
# or
lookup.acs <- ACSdownload::get.lookup.acs(2009)
# or related info from
acs::acs.lookup()

## End(Not run)
```

---

lookup.acs2010	<i>Sequence_Number_and_Table_Number_Lookup.txt for 2006-2010 ACS dataset</i>
----------------	--

---

**Description**

This data set provides information about variables in tables forming the American Community Survey (ACS) 5-year summary file.

**Usage**

```
data('lookup.acs2010')
```

**Format**

A data.frame with these fields:

'data.frame': xxx obs. of 8 variables:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

**Source**

For the 2006-2010 dataset, [ftp://ftp.census.gov/acs2010\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.txt](ftp://ftp.census.gov/acs2010_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.txt) obtained July 2015.

**See Also**

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [get.lookup.acs](#) which downloads these files. Also see [get.acs](#).

**Examples**

```
## Not run:
data(lookup.acs2010, package='ACSdownload')
# or
lookup.acs <- ACSdownload::get.lookup.acs(2010)
# or related info from
acs::acs.lookup()

## End(Not run)
```

---

lookup.acs2011	<i>Sequence_Number_and_Table_Number_Lookup.txt for 2007-2011 ACS dataset</i>
----------------	--

---

**Description**

This data set provides information about variables in tables forming the American Community Survey (ACS) 5-year summary file.

**Usage**

```
data('lookup.acs2011')
```

**Format**

A data.frame with these fields:

'data.frame': xxx obs. of 8 variables:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

**Source**

For the 2007-2011 dataset, [ftp://ftp.census.gov/acs2011\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.txt](ftp://ftp.census.gov/acs2011_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.txt) obtained July 2015.

**See Also**

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [get.lookup.acs](#) which downloads these files. Also see [get.acs](#).

**Examples**

```
## Not run:
data(lookup.acs2011, package='ACSdownload')
# or
lookup.acs <- ACSdownload::get.lookup.acs(2011)
# or related info from
acs::acs.lookup()

## End(Not run)
```

---

lookup.acs2012	<i>Sequence_Number_and_Table_Number_Lookup.txt for 2008-2012 ACS dataset</i>
----------------	--

---

**Description**

This data set provides information about variables in tables forming the American Community Survey (ACS) 5-year summary file.

**Usage**

```
data('lookup.acs2012')
```

**Format**

A data.frame with these fields:

'data.frame': xxx obs. of 8 variables:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

**Source**

For the 2008-2012 dataset, [ftp://ftp.census.gov/acs2012\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.txt](ftp://ftp.census.gov/acs2012_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.txt) obtained July 2015.

**See Also**

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [get.lookup.acs](#) which downloads these files. Also see [get.acs](#).

**Examples**

```
## Not run:
data(lookup.acs2012, package='ACSdownload')
# or
lookup.acs <- ACSdownload::get.lookup.acs(2012)
# or related info from
acs::acs.lookup()

## End(Not run)
```

---

lookup.acs2013	<i>Sequence_Number_and_Table_Number_Lookup.txt for 2009-2013 ACS dataset</i>
----------------	--

---

**Description**

This data set provides information about variables in tables forming the American Community Survey (ACS) 5-year summary file.

**Usage**

```
data('lookup.acs2013')
```

**Format**

A data.frame with these fields:

'data.frame': xxx obs. of 8 variables:

- \$ Table.ID : chr "B00001" "B00001" "B00001" "B00002" ...
- \$ Sequence.Number : chr "0001" "0001" "0001" "0001" ...
- \$ Line.Number : num NA NA 1 NA NA 1 NA NA 1 2 ...
- \$ Start.Position : num 7 NA NA 8 NA NA 7 NA NA NA ...
- \$ Total.Cells.in.Table : chr "1 CELL" "" "" "1 CELL" ...
- \$ Total.Cells.in.Sequence: num NA NA NA 2 NA NA NA NA NA ...
- \$ Table.Title : chr "UNWEIGHTED SAMPLE COUNT OF THE POPULATION" "Universe: Total population" "Total" "UNWEIGHTED SAMPLE HOUSING UNITS" ...
- \$ Subject.Area : chr "Unweighted Count" "" "" "Unweighted Count" ...

**Source**

For the 2009-2013 dataset, [ftp://ftp.census.gov/acs2013\\_5yr/summaryfile/Sequence\\_Number\\_and\\_Table\\_Number\\_Lookup.txt](ftp://ftp.census.gov/acs2013_5yr/summaryfile/Sequence_Number_and_Table_Number_Lookup.txt) obtained July 2015.

**See Also**

[acs.lookup](#) which does something similar but is more flexible & robust. Also see [get.lookup.acs](#) which downloads these files. Also see [get.acs](#).

**Examples**

```
## Not run:
data(lookup.acs2013, package='ACSdownload')
# or
lookup.acs <- ACSdownload::get.lookup.acs(2013)
# or related info from
acs::acs.lookup()

## End(Not run)
```

---

merge.tables

Concatenate several ACS data tables into one big table

---

**Description**

Concatenate several ACS data tables into one big table

**Usage**

```
## S3 method for class 'tables'
merge(my.list.of.tables)
```

**Arguments**

my.list.of.tables

Required list of data tables from prior steps in [get.acs](#)

**Value**

Returns one big data.frame with all columns of all input tables

**See Also**

[get.acs](#)



---

read.concat.states	<i>Read and concatenate State files of ACS data</i>
--------------------	---

---

## Description

Read the unzipped csv files of estimates and MOE (margin of error) for American Community Survey (ACS) 5-year summary file data obtained from US Census FTP site. These State-specific csv files are combined into a single national result for each Census data table.

## Usage

```
read.concat.states(tables, mystates, geo, needed, folder = getwd(),  
  output.path, end.year = "2012", save.files = TRUE, sumlevel = "both",  
  testing = FALSE)
```

## Arguments

tables	Character vector of table numbers needed such as 'B01001'
mystates	Character vector of 2-character state abbreviations. Default is all states.
geo	Required table of geographic identifiers to merge with data here. See <a href="#">get.read.geo</a>
needed	Required table specifying which variables to use from each table. See <a href="#">set.needed</a> and <a href="#">get.acs</a>
folder	Default is current working directory.
output.path	Default is whatever the parameter folder is set to. Results as .RData files are saved here if save.files=TRUE.
end.year	Default is "2012", specifies end year of 5-year summary file.
sumlevel	Default is "both", specifies if "tracts" or "blockgroups" or "both" should be returned.
testing	Default is FALSE. If TRUE, prints filenames but does not unzip them.

## Details

This is a slow function using rbind() – It can takes several minutes for a national dataset of a few tables. Also note some sequence files might have >1 table in the sequence file, so must loop through tables not seqfiles to get start points right.

## Value

Returns a list of data.frames, where each element of the list is one ACS table, such as table B01001.

## See Also

[get.acs](#)

read.geo

*Read and concatenate state geo files from Census ACS***Description**

Reads and merges geo files that have been obtained from the US Census Bureau FTP site for American Community Survey (ACS) data.

**Usage**

```
read.geo(mystates, folder = getwd(), end.year = "2012")
```

**Arguments**

mystates	Character vector of one or more states/DC/PR, as 2-character state abbreviations. Default is all states/DC/PR.
folder	Optional path to where files are stored, defaults to getwd()
end.year	End year of 5-year data, default is "2012"

**Details**

Note that if this finds the geographic file in folder already, it will not download it again even if that file was corrupt. Currently works for ACS 2008-2012 5-year file format, other years not tested. Extracts just block group (SUMLEVEL=150) and tract (SUMLEVEL=140) geo information (not county info., since data files used in this package lack county info.) The NAME field works on pc but mac can hit an error if trying to read the NAME field. Due to encoding? specifying encoding didn't help.

(name is very long and not essential)

Error in substring(x, first, last) :

invalid multibyte string at '<f1>onc<69>to Chapter; Navajo Nation Reservation and Off-Reservation Trust Land, AZ-NM-UT

Format of files is here: [ftp://ftp.census.gov/acs2012\\_5yr/summaryfile/ACS\\_2008-2012\\_SF\\_Tech\\_Doc.pdf](ftp://ftp.census.gov/acs2012_5yr/summaryfile/ACS_2008-2012_SF_Tech_Doc.pdf)

**Value**

Returns a large data.frame of selected geographic information on all block groups and tracts in the specified states/DC/PR, with just these fields:

"STUSAB", "SUMLEVEL", "LOGRECNO", "STATE", "COUNTY", "TRACT", "BLKGRP", "GEOID"

**See Also**

[get.acs](#), [download.geo](#)

**Examples**

```
## Not run:
geo <- read.geo( c("dc", "de") )

## End(Not run)
```

set.needed

*Specify which ACS Variables are Needed***Description**

Utility used by `get.acs` to help user specify which variables are needed. User can specify this in a file in the working directory, modifying "variables needed template.csv" that this function can create based on tables parameter, to create user-defined "variables needed.csv"

**Usage**

```
set.needed(tables, lookup.acs, vars = "all", varsfile, folder = getwd(),
  noEditOnMac = FALSE, end.year = "2012")
```

**Arguments**

tables	Character vector, required. Specifies which ACS tables.
lookup.acs	Data.frame, optional. Defines which variables are in which tables. Output of <a href="#">get.lookup.acs</a>
vars	Optional logical, default is "all" (unless varsfile specified). Specifies what variables to use from specified tables, and how to determine that. If varsfile is provided, vars is ignored (see parameter varsfile). If vars="ask", function will ask user about variables needed and allow specification in an interactive session.
varsfile	Optional name of file that can be used to specify which variables are needed from specified tables. If varsfile is specified, parameter vars is ignored, and the function just looks in folder for file called filename, e.g., "variables needed.csv" that should specify which variables to keep from each table. If not found in folder, then all variables from each table are used (same as if vars="all" and varsfile not specified). The format of that file should be the same as is found in the file "variables needed template.csv" created by this function. If the filename (e.g., "variables needed.csv" file) is not found, it looks for and uses the file called "variables needed template.csv" which is written by this function and specifies all of the variables from each table. The column called "keep" should have an upper or lowercase letter Y to indicate that row (variable) should be kept. Blanks or other values (even the word "yes") indicate the variable is not needed from that data table and it will be dropped.
folder	Optional path, default is <code>getwd()</code> , specifying where to save the csv files that define needed variables.
noEditOnMac	FALSE by default. If TRUE, do not pause to allow <code>edit()</code> when on Mac OSX, even if vars=TRUE. Allows you to avoid problem in RStudio if X11 not installed.
end.year	Optional, defaults to '2012' – specifies last year of 5-year summary file that is being used.

**Value**

Returns data.frame of info on which variables are needed from each table, much like annotated version of `lookup.acs`.

**See Also**

[get.acs](#) which uses this

---

unzip.datafiles

*Unzip ACS datafile per state, downloading missing ones first*


---

**Description**

Unzip ACS datafile for each specified US State, extracting specified table(s), downloading missing zip files first.

**Usage**

```
unzip.datafiles(tables, mystates, folder = getwd(), end.year = "2012",
  testing = FALSE, attempts = 5)
```

**Arguments**

tables	Character vector of table numbers needed such as 'B01001'
mystates	Character vector of 2-character state abbreviations. Default is all states.
folder	Default is current working directory.
end.year	Default is "2012" – specifies last year of 5-year summary file.
testing	Default is FALSE. If TRUE, prints more info.
attempts	Default is 5, specifies how many tries (maximum) for unzipping before trying to redownload and then give up.

**Value**

Side effect is unzipping file on disk (unless testing=TRUE)

**See Also**

[get.acs](#)

---

url.to.find.zipfile

*Get URL(s) for FTP site folder(s) with ACS 5-year summary file data*


---

**Description**

Returns URL(s) of folders (on Census Bureau FTP site) with zip file(s) based on end year.

**Usage**

```
url.to.find.zipfile(mystates, end.year = "2012", url.prefix)
```

Arguments

mystates	Character vector of one or more states/DC/PR, as 2-character state abbreviations. Default is all states/DC/PR.
end.year	Optional end year for 5-year summary file, as character, defaulting to "2012" but ignored if url.prefix is specified
url.prefix	Optional character element that defaults to what is returned by <code>get.url.prefix(end.year)</code>

Details

The zip files look like this for example: "20135dc0001000.zip"

The 2009-2013 summary file by state-seqfile combo is in folders that look like this:

"ftp://ftp.census.gov/acs2013\_5yr/summaryfile/2009-2013\_ACSSF\_By\_State\_By\_Sequence\_Table\_Subset/DistrictOfC

The 2008-2012 summary file by state-seqfile combo is in folders that look like this:

The 2007-2011 summary file by state-seqfile combo is in folders that look like this:

"ftp://ftp.census.gov/acs2011\_5yr/summaryfile/2007-2011\_ACSSF\_By\_State\_By\_Sequence\_Table\_Subset/DistrictOfC  
"http://www2.census.gov/acs2011\_5yr/summaryfile/2007-2011\_ACSSF\_By\_State\_By\_Sequence\_Table\_Subset/DistrictOfC  
URL must be the ftp site, not the http version.

Value

Returns character vector that is URL(s) such as "ftp://ftp.census.gov/acs2012\_5yr/summaryfile"

See Also

[get.acs](#), [url.to.find.zipfile](#), [download.geo](#)

---

which.seqfiles	<i>Find Which Sequence Files Contain Given ACS Table(s)</i>
----------------	---

---

Description

The US Census Bureau provides 5-year summary file data from the American Community Survey in sequence files on their FTP site. This function reports which sequence files contain the specified tables. Used by [get.acs](#)

Usage

`which.seqfiles(tables, lookup.acs, end.year = "2012")`

**Arguments**

tables	character vector, required. Defines which ACS table(s) to check, such as 'B01001'
lookup.acs	data.frame, optional (if not provided then it is downloaded from Census). Specifies what variables are in which tables and which tables are in which sequence files on the FTP site.
end.year	Character element, optional, "2012" by default. Defines end year for 5-year dataset.

**Value**

Returns a vector of one or more numbers stored as characters, each defining one sequence file, such as "0001".

**See Also**

[get.acs](#) and [acs.lookup](#) from the **acs** package, which does something related but is more flexible & robust. Also see [get.acs](#) which uses this.

---

zipfile	<i>Get name(s) of zip file(s) for ACS 5-year summary file data</i>
---------	--

---

**Description**

Returns name(s) of zip file(s) based on state(s), a sequence file number, a prefix, and end year.

**Usage**

```
zipfile(mystates, seqfilenum, zipfile.prefix, end.year = "2012")
```

**Arguments**

seqfilenum	Required single sequence file number used by ACS 5-year summary file
zipfile.prefix	Optional character element, defaults to value looked up based on end.year.
end.year	Optional end year for 5-year summary file, as character, defaulting to "2012"
state.abbrev	Required vector of 2-character state abbreviation(s)

**Value**

Returns character element that is name of zip file such as "20115dc0113000.zip"

**See Also**

[get.acs](#)

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