

Package: blockpop (via r-universe)

October 17, 2024

Title Estimate Census Block Populations for 2020

Version 0.0.0.9000

Description Uses FCC block-level population estimates from 2010--2019, which are based on new roads and map data, along with decennial Census and ACS data, to estimate 2020 block populations.

Imports withr, dplyr (>= 1.0.0), tidyr (>= 1.0.0), data.table, dtplyr, stringr, readr, vroom, tidycensus, lifecycle, cli

Suggests rmarkdown, knitr, ggplot2, here, readxl

License GPL (>= 3)

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.1.1

URL <https://corymccartan.github.io/blockpop>

BugReports <https://github.com/CoryMcCartan/blockpop/issues>

Depends R (>= 2.10)

VignetteBuilder knitr

Repository <https://alarm-redist.r-universe.dev>

RemoteUrl <https://github.com/CoryMcCartan/blockpop>

RemoteRef HEAD

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bl_download_2010_vars *Download 2010 Census variables at the block level*

Description

Downloads population and voting-age population by race at the block level for the 2010 decennial Census. API key required: https://api.census.gov/data/key_signup.html.

Usage

```
bl_download_2010_vars(state)
```

Arguments

state the two-letter abbreviation of the state to get data for.

Value

A data frame with the population counts

Examples

```
## Not run:  
# API key required  
bl_download_2010_vars("WA")  
  
## End(Not run)
```

bl_download_acs_vars *Download 2019 5-year ACS variables at the block group level*

Description

Downloads population and voting-age population by race at the block group level for the 2019 5-year American Communities Survey. API key required: https://api.census.gov/data/key_signup.html.

Usage

```
bl_download_acs_vars(state)
```

Arguments

state the two-letter abbreviation of the state to get data for.

Value

A data frame with the population counts

Examples

```
## Not run:  
# API key required  
bl_download_acs_vars("WA")  
  
## End(Not run)
```

bl_download_fcc	<i>Download and extract all population estimates to a file</i>
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Description

[Experimental]

Usage

```
bl_download_fcc(path, url = "https://www.fcc.gov/file/19314/download")
```

Arguments

- path the path to extract the CSV (~1.3 gigabytes) to.
- url the URL to the FCC data <https://www.fcc.gov/staff-block-estimates>

Value

The path, invisibly.

Examples

```
## Not run:  
bl_download_fcc("data-raw/fcc.csv")  
  
## End(Not run)
```

bl_est_2020	<i>Estimate 2020 population from 2010-2019 populations</i>
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Description

[Experimental] Uses the average growth rate over the specified window to impute the 2020 population. Final estimates are rescaled to match the Census April 1, 2020 apportionment populations at the state level.

Usage

```
bl_est_2020(data, forecast_start = 2010)
```

Arguments

`data` the output of `bl_load_state()`

`forecast_start` the year to use as the base year. E.g. if 2013, then the average growth rate from 2013–2019 will be used.

Value

A modified data frame with just 2010, base year, and 2020 estimates.

Examples

```
## Not run:
d = bl_load_state("WA")
bl_est_2020(d, 2010)

## End(Not run)
```

bl_harmonize_vars	<i>Harmonize 2010 Decennial Census, 2019 ACS, and 2020 Block Population Estimates</i>
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Description

Creates estimates for race/ethnicity variables for blocks in 2020, based on the 2010 Census (`bl_download_2010_vars()`) and 2019 ACS (`bl_download_acs_vars()`) data.

Usage

```
bl_harmonize_vars(block_d, census_d, acs_d)
```

Arguments

block_d	the output of <code>bl_est_2020()</code>
census_d	the output of <code>bl_download_2010_vars()</code> or similar
acs_d	the output of <code>bl_download_acs_vars()</code> or similar

Details

The racial breakdown of total and voting-age population are proportionally adjusted within block groups to match the ACS block-group percentages. Then these percentages are applied to the newly estimated block populations. Finally, the block race populations are rescaled so that the block populations match the 2020 estimates. This is essentially a 1-round iterative proportional fitting (IPF) procedure.

Value

A data frame of 2020 block-level estimates for the variables in `census_d`.

bl_load_state	<i>Download and extract population estimates for a state</i>
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Description

[Experimental]

Usage

```
bl_load_state(state, path = "https://www.fcc.gov/file/19314/download")
```

Arguments

state	the two-letter abbreviation of the state to get data for.
path	the path to the FCC data. Defaults to the online ZIP file, but can point to a local zip file or an extracted CSV (from e.g. <code>bl_download_fcc()</code>).

Value

A data frame with the population estimates.

Examples

```
## Not run:
bl_load_state("WA")

## End(Not run)
```

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