Package 'geobr'

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Type Package

Title Loads Shapefiles of Official Spatial Data Sets of Brazil

Version 1.2

Date 2020-02-14

URL https://github.com/ipeaGIT/geobr

BugReports https://github.com/ipeaGIT/geobr/issues

Description Easy access to official spatial data sets of Brazil as 'sf' objects in R.
The package includes a wide range of geospatial data available at various
geographic scales and for various years with harmonized attributes, projection and topology.

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Encoding UTF-8

LazyData TRUE

Depends R (>= 3.5.0)

Suggests covr, dplyr, ggplot2, knitr, mapview, rio, rmarkdown,
testthat

Imports httr, readr, sf, utils

RoxygenNote 7.0.2

VignetteBuilder knitr

NeedsCompilation no

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R topics documented:

`download_gpkg` *Download geopackage to tempdir*

Description

Download geopackage to tempdir

Usage

```
download_gpkg(file_url, progress_bar = showProgress)
```

Arguments

`file_url`	A string with the file_url address of a geobr dataset
`progress_bar`	Logical. Defaults to (TRUE) display progress bar

See Also

Other support functions: `load_gpkg()`, `select_data_type()`, `test_year_input()`

`download_metadata` *Support function to download metadata internally used in geobr*

Description

Support function to download metadata internally used in geobr

Usage

```
download_metadata(geography = NULL, data_type = NULL)
```

Arguments

`geography`	Which geography will be downloaded
`data_type`	Data type (passed as 'tp' from read_ functions)

See Also

Other general support functions: `list_geobr()`

Examples

```
library(geobr)

df <- download_metadata()
```

`geobr` `geobr` *package*

Description

Easy access to shapefiles of the Brazilian Institute of Geography and Statistics (IBGE) and other official spatial data sets of Brazil

Details

See the README on GitHub

grid_state_correspondence_table

A correspondence table indicating what quadrants of IBGE's statistical grid intersect with each Brazilian state

Description

Built-in dataset

- `code_uf`: IBGE code of State (2-digit, numeric)
- `name_state`: Title-case name of state (character)
- `code_grid`: Unique code of each quadrant of IBGE's statistical grid

Usage

```
data(grid_state_correspondence_table)
```

Format

A data frame sf with 139 rows and 3 columns

Details

correspondence table indicating what quadrants of IBGE's statistical grid intersect with each Brazilian state

Note

Last updated 2019-06-17

list_geobr

List all datasets available in the geobr package

Description

Returns a data frame with all datasets available in the geobr package

Usage

```
list_geobr()
```

See Also

Other general support functions: `download_metadata()`

Examples

```
library(geobr)

df <- list_geobr()
```

`load_gpkg` *Load geopackage from tempdir to global environment*

Description

Load geopackage from tempdir to global environment

Usage

```
load_gpkg(file_url, temps = NULL)
```

Arguments

`file_url`	A string with the file_url address of a geobr dataset
`temps`	The address of a gpkg file stored in tempdir. Defaults to NULL

See Also

Other support functions: `download_gpkg()`, `select_data_type()`, `test_year_input()`

`lookup_muni` *Lookup municipality codes and names*

Description

Input a municipality **name** *or* **code** and get the names and codes of the municipality's corresponding state, meso, micro, intermediate, and immediate regions

Usage

```
lookup_muni(name_muni = NULL, code_muni = NULL)
```

Arguments

`name_muni`	The municipality name to be looked up
`code_muni`	The municipality code to be looked up

Details

Only available from 2010 Census data so far

Value

A data.frame with 13 columns identifying the geographies information of that municipality

Examples

```
library(geobr)

# Get lookup table for municipality Rio de Janeiro
mun <- lookup_muni(name_muni = "Rio de Janeiro")

# Or you can get a lookup table for the same municipality searching for its code
mun <- lookup_muni(code_muni = 3304557)

# Get lookup table for all municipalities
mun_all <- lookup_muni(name_muni = "all")

# Or:
mun_all <- lookup_muni(code_muni = "all")
```

---

read_amazon *Download official data of Brazil's Legal Amazon as an sf object.*

Description

This data set covers the whole of Brazil's Legal Amazon as defined in the federal law n. 12.651/2012). The original data comes from the Brazilian Ministry of Environment (MMA) and can be found at http://mapas.mma.gov.br/i3geo/datadownload.htm .

Usage

```
read_amazon(year = NULL, tp = "simplified", showProgress = TRUE)
```

Arguments

year	A date number in YYYY format (defaults to 2012)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_biomes(), read_census_tract(), read_conservation_units(), read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(), read_micro_region(), read_municipality(), read_region(), read_semiarid(), read_state(), read_statistical_grid(), read_weighting_area()

Examples

```
library(geobr)

# Read Brazilian Legal Amazon
  a <- read_amazon(year=2012)
```

`read_biomes` *Download official data of Brazilian biomes as an sf object.*

Description

This data set includes polygons of all biomes present in Brazilian territory and coastal area. The latest data set dates to 2019 and it is available at scale 1:250.000. The 2004 data set is at the scale 1:5.000.000. The original data comes from IBGE. More information at https://www.ibge.gov.br/apps/biomas/

Usage

```
read_biomes(year = NULL, tp = "simplified", showProgress = TRUE)
```

Arguments

`year`	A date number in YYYY format (defaults to 2019)
`tp`	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
`showProgress`	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: `read_amazon()`, `read_census_tract()`, `read_conservation_units()`, `read_country()`, `read_immediate_region()`, `read_intermediate_region()`, `read_meso_region()`, `read_micro_region()`, `read_municipality()`, `read_region()`, `read_semiarid()`, `read_state()`, `read_statistical_grid()`, `read_weighting_area()`

Examples

```
library(geobr)

# Read biomes
  b <- read_biomes(year=2019)
```

read_census_tract *Download shape files of census tracts of the Brazilian Population Census (Only years 2000 and 2010 are currently available).*

Description

Download shape files of census tracts of the Brazilian Population Census (Only years 2000 and 2010 are currently available).

Usage

```
read_census_tract(
  code_tract,
  year = NULL,
  zone = "urban",
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

code_tract	The 7-digit code of a Municipality. If the two-digit code or a two-letter uppercase abbreviation of a state is passed, (e.g. 33 or "RJ") the function will load all census tracts of that state. If code_tract="all", all census tracts of the country are loaded.
year	Year of the data (defaults to 2010)
zone	"urban" or "rural" census tracts come in separate files in the year 2000 (defaults to "urban")
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_conservation_units(), read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(), read_micro_region(), read_municipality(), read_region(), read_semiarid(), read_state(), read_statistical_grid(), read_weighting_area()

Examples

```
library(geobr)

# Read rural census tracts for years before 2007
  c <- read_census_tract(code_tract=5201108, year=2000, zone="rural")

# Read all census tracts of a state at a given year
  c <- read_census_tract(code_tract=53, year=2010) # or
  c <- read_census_tract(code_tract="DF", year=2010)
```

```
  plot(c)

# Read all census tracts of a municipality at a given year
  c <- read_census_tract(code_tract=5201108, year=2010)
  plot(c)

# Read all census tracts of the country at a given year
  c <- read_census_tract(code_tract="all", year=2010)
```

`read_conservation_units`

Download official data of Brazilian conservation untis as an sf object.

Description

This data set covers the whole of Brazil and it includes the polygons of all conservation untis present in Brazilian territory. The last update of the data was 09-2019. The original data comes from MMA and can be found at http://mapas.mma.gov.br/i3geo/datadownload.htm .

Usage

```
read_conservation_units(date = NULL, tp = "simplified", showProgress = TRUE)
```

Arguments

`date`	A date number in YYYYMM format
`tp`	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
`showProgress`	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: `read_amazon()`, `read_biomes()`, `read_census_tract()`, `read_country()`, `read_immediate_region()`, `read_intermediate_region()`, `read_meso_region()`, `read_micro_region()`, `read_municipality()`, `read_region()`, `read_semiarid()`, `read_state()`, `read_statistical_grid()`, `read_weighting_area()`

Examples

```
library(geobr)

# Read conservation_units
  b <- read_conservation_units(date=201909)
```

read_country *Download shape file of Brazil as sf objects. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)*

Description

Download shape file of Brazil as sf objects. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_country(year = NULL, tp = "simplified", showProgress = TRUE)
```

Arguments

year	Year of the data (defaults to 2010)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_census_tract(), read_conservation_units(), read_immediate_region(), read_intermediate_region(), read_meso_region(), read_micro_region(), read_municipality(), read_region(), read_semiarid(), read_state(), read_statistical_grid(), read_weighting_area()

Examples

```
library(geobr)

# Read specific year
  br <- read_country(year=2018)
```

read_disaster_risk_area *Download official data of disaster risk areas as an sf object.*

Description

This function reads the the official data of disaster risk areas in Brazil. It specifically focuses on geodynamic and hydro-meteorological disasters capable of triggering landslides and floods. The data set covers the whole country. Each risk area polygon (known as 'BATER') has unique code id (column 'geo_bater'). The data set brings information on the extent to which the risk area polygons overlap with census tracts and block faces (column "acuracia") and number of ris areas within each risk area (column 'num'). Orignal data were generated by IBGE and CEMADEN. For more information about the methodology, see deails at https://www.ibge.gov.br/geociencias/organizacao-do-territorio/tipologias-do-territorio/21538-populacao-em-areas-de-risco-no-brasil.html

Usage

```
read_disaster_risk_area(year, tp = "simplified", showProgress = TRUE)
```

Arguments

year	A year number in YYYY format.
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)#' @export
showProgress	Logical. Defaults to (TRUE) display progress bar

Examples

```
library(geobr)

# Read all disaster risk areas in an specific year
  d <- read_disaster_risk_area(year=2010)
```

---

read_health_facilities

Download geolocated data of health facilities as an sf object.

Description

Data comes from the National Registry of Healthcare facilities (Cadastro Nacional de Estabelecimentos de Saude - CNES), originally collected by the Brazilian Ministry of Health. The date of the last data update is registered in the database in the columns 'date_update' and 'year_update'. These data uses Geodetic reference system "SIRGAS2000" and CRS(4674). The coordinates of each facility was obtained by CNES and validated by means of space operations. These operations verify if the point is in the municipality, considering a radius of 5,000 meters. When the coordinate is not correct, further searches are done in other systems of the Ministry of Health and in web services like Google Maps . Finally, if the coordinates have been correctly obtained in this process, the coordinates of the municipal head office are used. The final source used is registered in the database in a specific column 'data_source'. Periodically the coordinates are revised with the objective of improving the quality of the data. More information available at http://dados.gov.br/dataset/cnes

Usage

```
read_health_facilities(showProgress = TRUE)
```

Arguments

showProgress	Logical. Defaults to (TRUE) display progress bar

Examples

```
library(geobr)

# Read all health facilities of the whole country
  h <- read_health_facilities()
```

`read_immediate_region` *Download shape files of Brazil's Immediate Geographic Areas as sf objects*

Description

The Immediate Geographic Areas are part of the geographic division of Brazil created in 2017 by IBGE to replace the "Micro Regions" division. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_immediate_region(
  code_immediate = "all",
  year = NULL,
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

`code_immediate`	6-digit code of an immediate region. If the two-digit code or a two-letter uppercase abbreviation of a state is passed, (e.g. 33 or "RJ") the function will load all immediate regions of that state. If code_immediate="all", all immediate regions of the country are loaded (defaults to "all").
`year`	A date number in YYYY format (defaults to 2017)
`tp`	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
`showProgress`	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: `read_amazon()`, `read_biomes()`, `read_census_tract()`, `read_conservation_units()`, `read_country()`, `read_intermediate_region()`, `read_meso_region()`, `read_micro_region()`, `read_municipality()`, `read_region()`, `read_semiarid()`, `read_state()`, `read_statistical_grid()`, `read_weighting_area()`

Examples

```
library(geobr)

# Read an specific immediate region
  im <- read_immediate_region(code_immediate=110006)

# Read immediate regions of a state
  im <- read_immediate_region(code_immediate=12)
  im <- read_immediate_region(code_immediate="AM")

# Read all immediate regions of the country
  im <- read_immediate_region()
  im <- read_immediate_region(code_immediate="all")
```

`read_indigenous_land` *Download official data of indigenous lands as an sf object.*

Description

The data set covers the whole of Brazil and it includes indigenous lands from all ethnicities and in different stages of demarcation. The original data comes from the National Indian Foundation (FUNAI) and can be found at http://www.funai.gov.br/index.php/shape. Although original data is updated monthly, the geobr package will only keep the data for a few months per year.

Usage

```
read_indigenous_land(date, tp = "simplified", showProgress = TRUE)
```

Arguments

`date`	A date numer in YYYYMM format.
`tp`	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
`showProgress`	Logical. Defaults to (TRUE) display progress bar

Examples

```
library(geobr)

# Read all indigenous land in an specific date
  i <- read_indigenous_land(date=201907)
```

`read_intermediate_region` *Download shape files of Brazil's Intermediate Geographic Areas as sf objects.*

Description

The intermediate Geographic Areas are part of the geographic division of Brazil created in 2017 by IBGE to replace the "Meso Regions" division. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_intermediate_region(
  code_intermediate = "all",
  year = NULL,
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

`code_intermediate`	4-digit code of an intermediate region. If the two-digit code or a two-letter uppercase abbreviation of a state is passed, (e.g. 33 or "RJ") the function will load all intermediate regions of that state. If code_intermediate="all", all intermediate regions of the country are loaded (defaults to "all").
`year`	A date number in YYYY format (defaults to 2017)
`tp`	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
`showProgress`	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: `read_amazon()`, `read_biomes()`, `read_census_tract()`, `read_conservation_units()`, `read_country()`, `read_immediate_region()`, `read_meso_region()`, `read_micro_region()`, `read_municipality()`, `read_region()`, `read_semiarid()`, `read_state()`, `read_statistical_grid()`, `read_weighting_area()`

Examples

```
library(geobr)

# Read an specific intermediate region
  im <- read_intermediate_region(code_intermediate=1202)

# Read intermediate regions of a state
  im <- read_intermediate_region(code_intermediate=12)
  im <- read_intermediate_region(code_intermediate="AM")
```

```
# Read all intermediate regions of the country
  im <- read_intermediate_region()
  im <- read_intermediate_region(code_intermediate="all")
```

`read_meso_region` *Download shape files of meso region as sf objects. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)*

Description

Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_meso_region(
  code_meso = "all",
  year = NULL,
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

`code_meso`	The 4-digit code of a meso region. If the two-digit code or a two-letter uppercase abbreviation of a state is passed, (e.g. 33 or "RJ") the function will load all meso regions of that state. If code_meso="all", all meso regions of the country are loaded.
`year`	Year of the data (defaults to 2010)
`tp`	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
`showProgress`	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: `read_amazon()`, `read_biomes()`, `read_census_tract()`, `read_conservation_units()`, `read_country()`, `read_immediate_region()`, `read_intermediate_region()`, `read_micro_region()`, `read_municipality()`, `read_region()`, `read_semiarid()`, `read_state()`, `read_statistical_grid()`, `read_weighting_area()`

Examples

```
library(geobr)

# Read specific meso region at a given year
  meso <- read_meso_region(code_meso=3301, year=2018)
```

```
# Read all meso regions of a state at a given year
  meso <- read_meso_region(code_meso=12, year=2017)
  meso <- read_meso_region(code_meso="AM", year=2000)

# Read all meso regions of the country at a given year
  meso <- read_meso_region(code_meso="all", year=2010)
```

`read_metro_area` *Download shape files of official metropolitan areas in Brazil as an sf object.*

Description

The function returns the shapes of municipalities grouped by their respective metro areas. Metropolitan areas are created by each state in Brazil. The data set includes the municipalities that belong to all metropolitan areas in the country according to state legislation in each year. Orignal data were generated by Institute of Geography. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674).

Usage

```
read_metro_area(year, tp = "simplified", showProgress = TRUE)
```

Arguments

`year`	A year number in YYYY format
`tp`	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
`showProgress`	Logical. Defaults to (TRUE) display progress bar

Examples

```
library(geobr)

# Read all official metropolitan areas for a given year
  m <- read_metro_area(2005)

  m <- read_metro_area(2018)
```

`read_micro_region` *Download shape files of micro region as sf objects*

Description

Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_micro_region(
  code_micro = "all",
  year = NULL,
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

code_micro	5-digit code of a micro region. If the two-digit code or a two-letter uppercase abbreviation of a state is passed, (e.g. 33 or "RJ") the function will load all micro regions of that state. If code_micro="all", all micro regions of the country are loaded.
year	Year of the data (defaults to 2010)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: `read_amazon()`, `read_biomes()`, `read_census_tract()`, `read_conservation_units()`, `read_country()`, `read_immediate_region()`, `read_intermediate_region()`, `read_meso_region()`, `read_municipality()`, `read_region()`, `read_semiarid()`, `read_state()`, `read_statistical_grid()`, `read_weighting_area()`

Examples

```
library(geobr)

# Read an specific micro region a given year
  micro <- read_micro_region(code_micro=11008, year=2018)

# Read micro regions of a state at a given year
  micro <- read_micro_region(code_micro=12, year=2017)
  micro <- read_micro_region(code_micro="AM", year=2000)

# Read all micro regions at a given year
  micro <- read_micro_region(code_micro="all", year=2010)
```

read_municipality *Download shape files of Brazilian municipalities as sf objects.*

Description

Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_municipality(
  code_muni = "all",
  year = NULL,
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

code_muni	The 7-digit code of a municipality. If the two-digit code or a two-letter uppercase abbreviation of a state is passed, (e.g. 33 or "RJ") the function will load all municipalities of that state. If code_muni="all", all municipalities of the country will be loaded.
year	Year of the data (defaults to 2010)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_census_tract(), read_conservation_units(), read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(), read_micro_region(), read_region(), read_semiarid(), read_state(), read_statistical_grid(), read_weighting_area()

Examples

```
library(geobr)

# Read specific municipality at a given year
  mun <- read_municipality(code_muni=1200179, year=2017)

# Read all municipalities of a state at a given year
  mun <- read_municipality(code_muni=33, year=2010)
  mun <- read_municipality(code_muni="RJ", year=2010)

# Read all municipalities of the country at a given year
  mun <- read_municipality(code_muni="all", year=2018)
```

read_municipal_seat *Download official data of municipal seats (sede dos municipios) in Brazil as an sf object.*

Description

This function reads the official data on the municipal seats (sede dos municipios) of Brazil. The data brings the spatial coordinates (lat lon) of of municipal seats for various years between 1872 and 2010. Orignal data were generated by Brazilian Institute of Geography and Statistics (IBGE).

Usage

```
read_municipal_seat(year = NULL, showProgress = TRUE)
```

Arguments

year	A year number in YYYY format (Defaults to 2010)
showProgress	Logical. Defaults to (TRUE) display progress bar

Examples

```
library(geobr)

# Read municipal seats in an specific year
  m <- read_municipal_seat(year=1991)
```

read_region *Download shape file of Brazil Regions as sf objects.*

Description

Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_region(year = NULL, tp = "simplified", showProgress = TRUE)
```

Arguments

year	Year of the data (defaults to 2010)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_census_tract(), read_conservation_units()
read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(),
read_micro_region(), read_municipality(), read_semiarid(), read_state(), read_statistical_grid(),
read_weighting_area()

Examples

```
library(geobr)

# Read specific year
  reg <- read_region(year=2018)
```

`read_semiarid` *Download official data of Brazilian Semiarid as an sf object.*

Description

This data set covers the whole of Brazilian Semiarid as defined in the resolution in 23/11/2017).
The original data comes from the Brazilian Institute of Geography and Statistics (IBGE) and can be
found at https://www.ibge.gov.br/geociencias/cartas-e-mapas/mapas-regionais/15974-semiarido-brasileiro.html?=&t=do

Usage

```
read_semiarid(year = NULL, tp = "simplified", showProgress = TRUE)
```

Arguments

year	A date number in YYYY format (defaults to 2017)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_census_tract(), read_conservation_units()
read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(),
read_micro_region(), read_municipality(), read_region(), read_state(), read_statistical_grid(),
read_weighting_area()

Examples

```
library(geobr)

# Read Brazilian semiarid
  a <- read_semiarid(year=2017)
```

read_state *Download shapefiles of Brazilian states as sf objects.*

Description

Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_state(
  code_state = "all",
  year = 2010,
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

code_state	The two-digit code of a state or a two-letter uppercase abbreviation (e.g. 33 or "RJ"). If code_state="all", all states will be loaded.
year	Year of the data (defaults to 2010)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_census_tract(), read_conservation_units(), read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(), read_micro_region(), read_municipality(), read_region(), read_semiarid(), read_statistical_grid(), read_weighting_area()

Examples

```
library(geobr)

# Read specific state at a given year
  uf <- read_state(code_state=12, year=2017)

# Read specific state at a given year
  uf <- read_state(code_state="SC", year=2000)

# Read all states at a given year
  ufs <- read_state(code_state="all", year=2010)
```

read_statistical_grid *Download shape files of IBGE's statistical grid (200 x 200 meters) as sf objects. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)*

Description

Download shape files of IBGE's statistical grid (200 x 200 meters) as sf objects. Data at scale 1:250,000, using Geodetic reference system "SIRGAS2000" and CRS(4674)

Usage

```
read_statistical_grid(code_grid, year = NULL, showProgress = TRUE)
```

Arguments

code_grid	The 7-digit code of a grid quadrant If the two-letter abbreviation of a state is used, the function will load all grid quadrants that intersect with that state. If code_grid="all", the grid of the whole country will be loaded.
year	Year of the data (defaults to 2010). The only year available thus far is 2010.
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_census_tract(), read_conservation_units(), read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(), read_micro_region(), read_municipality(), read_region(), read_semiarid(), read_state(), read_weighting_area()

Examples

```
library(geobr)

# Read specific municipality at a given year
  grid <- read_statistical_grid(code_grid = 45, year=2010)

# Read all municipalities of a state at a given year
  state_grid <- read_statistical_grid(code_grid = "RJ")
```

read_urban_area *Download official data of urbanized areas in Brazil as an sf object.*

Description

This function reads the official data on the urban footprint of Brazilian cities in the years 2005 and 2015. Orignal data were generated by Institute of Geography and Statistics (IBGE) For more information about the methodology, see deails at https://biblioteca.ibge.gov.br/visualizacao/livros/liv100639.pdf

Usage

```
read_urban_area(year = NULL, tp = "simplified", showProgress = TRUE)
```

Arguments

year	A year number in YYYY format (defaults to 2015)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

Examples

```
library(geobr)

# Read urban footprint of Brazilian cities in an specific year
  d <- read_urban_area(year=2005)
```

read_weighting_area *Download shape files of Census Weighting Areas (area de ponderacao) of the Brazilian Population Census.*

Description

Only 2010 data is currently available.

Usage

```
read_weighting_area(
  code_weighting = "all",
  year = NULL,
  tp = "simplified",
  showProgress = TRUE
)
```

Arguments

code_weighting	The 7-digit code of a Municipality. If the two-digit code or a two-letter uppercase abbreviation of a state is passed, (e.g. 33 or "RJ") the function will load all weighting areas of that state. If code_weighting="all", all weighting areas of the country are loaded.
year	Year of the data (defaults to 2010)
tp	Whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)
showProgress	Logical. Defaults to (TRUE) display progress bar

See Also

Other general area functions: read_amazon(), read_biomes(), read_census_tract(), read_conservation_units(), read_country(), read_immediate_region(), read_intermediate_region(), read_meso_region(), read_micro_region(), read_municipality(), read_region(), read_semiarid(), read_state(), read_statistical_grid()

Examples

```
library(geobr)

# Read specific weighting area at a given year
  w <- read_weighting_area(code_weighting=5201108005004, year=2010)

# Read all weighting areas of a state at a given year
  w <- read_weighting_area(code_weighting=53, year=2010) # or
  w <- read_weighting_area(code_weighting="DF", year=2010)
  plot(w)

# Read all weighting areas of a municipality at a given year
  w <- read_weighting_area(code_weighting=5201108, year=2010)
  plot(w)

# Read all weighting areas of the country at a given year
  w <- read_weighting_area(code_weighting="all", year=2010)
```

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select_data_type *Select data type: 'original' or 'simplified' (default)*

Description

Select data type: 'original' or 'simplified' (default)

Usage

```
select_data_type(temp_meta, tp = NULL)
```

Arguments

temp_meta	A dataframe with the file_url addresses of geobr datasets
tp	A string indicating whether the function returns the 'original' dataset with high resolution or a dataset with 'simplified' borders (Default)

See Also

Other support functions: download_gpkg(), load_gpkg(), test_year_input()

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test_year_input *Test year input*

Description

Test year input

Usage

```
test_year_input(temp_meta, y = year)
```

Arguments

temp_meta	A dataframe with the file_url addresses of geobr datasets
y	Year of the dataset (passed by red_ function)

See Also

Other support functions: download_gpkg(), load_gpkg(), select_data_type()

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