

Package ‘geoidep’

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Type Package

Title Download Geographic Data on Various Topics Provided and Managed by the Spatial Data Infrastructure of Peru

Version 0.5.0

Description Provides R users with easy access to official cartographic data from Peru across a range of topics, including society, transport, environment, agriculture, climate, and more. It also includes data from regional government entities and technical-scientific institutions, all managed by Peru's Spatial Data Infrastructure. For more information, please visit: <<https://www.geoidep.gob.pe/>>.

License Apache License (>= 2)

URL <https://geografo.pe/geoidep/>

BugReports <https://github.com/ambarja/geoidep/issues>

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get_ana_data

Download ANA-SNIRH geospatial layers with spatial filtering

Description

Download any public layer from the water resources IDE of the National Water Authority - ANA (<https://snirh.ana.gob.pe>). When region is supplied, its bounding box is used to query the WFS service and the downloaded features are then filtered to those falling inside region. When region is NULL, the whole layer is downloaded.

Usage

```
get_ana_data(
  region = NULL,
  layer = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

region	An sf object specifying the area of interest (must be in EPSG:4326 - WGS 84). If NULL, the full layer is downloaded.
layer	A string. Layer key (e.g. "tuneles"). Run <code>get_data_sources("Ana")</code> to list the 50 available layers.
dsn	Character. Output filename. If supplied, the result is written to this file. If missing, a temporary file is used internally.
show_progress	Logical. Show cli progress. Default TRUE.
quiet	Logical. Suppress messages from <code>sf::st_read()</code> . Default TRUE.
timeout	Numeric. Seconds to wait for the server response (default 60).

Details

Column names are normalised to lowercase. The WFS 2.0.0 bbox filter requires latitude/longitude axis order for EPSG:4326, which is handled internally.

Value

An sf object with the layer geometries and attributes.

Examples

```
## Not run:
library(geoidep)
get_data_sources("Ana")

# Full layer download (tunnels inventory countrywide)
tunnels <- get_ana_data(layer = "tuneles", show_progress = FALSE)
head(tunnels)

# Features inside a region of interest
lima <- sf::st_sf(geometry = sf::st_sfc(
  sf::st_bbox(c(xmin = -77.2, ymin = -12.6, xmax = -76.6, ymax = -11.7),
    crs = sf::st_crs(4326)) |>
  sf::st_as_sfc()
))
tunnels_lima <- get_ana_data(region = lima, layer = "tuneles",
  show_progress = FALSE)
```

```
nrow(tunnels_lima)

## End(Not run)
```

get_ceplan_data

Download CEPLAN geoserver layers with spatial filtering

Description

Download any public layer from the CEPLAN geoserver (<https://geo.ceplan.gob.pe/>). When region is supplied, its bounding box is used to query the WFS service and the downloaded features are then filtered to those falling inside region. When region is NULL, the whole layer is downloaded.

Usage

```
get_ceplan_data(
  region = NULL,
  layer = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

region	An sf object specifying the area of interest (must be in EPSG:4326 - WGS 84). If NULL, the full layer is downloaded.
layer	A string. Layer key (e.g. "cn_aeropuertosx"). Run get_data_sources("Ceplan") to list the 83 available layers.
dsn	Character. Output filename. If supplied, the result is written to this file. If missing, a temporary file is used internally.
show_progress	Logical. Show cli progress. Default TRUE.
quiet	Logical. Suppress messages from sf::st_read(). Default TRUE.
timeout	Numeric. Seconds to wait for the server response (default 60).

Details

Column names are normalised to lowercase. The WFS 2.0.0 bbox filter requires latitude/longitude axis order for EPSG:4326, which is handled internally.

Value

An sf object with the layer geometries and attributes.

Examples

```
## Not run:
library(geoidep)
get_data_sources("Ceplan")

# Full layer download (135 airports countrywide)
airports <- get_ceplan_data(layer = "cn_aeropuertosx", show_progress = FALSE)
head(airports)

# Features inside a region of interest
lima <- sf::st_sf(geometry = sf::st_sfc(
  sf::st_bbox(c(xmin = -77.2, ymin = -12.6, xmax = -76.6, ymax = -11.7),
    crs = sf::st_crs(4326)) |>
  sf::st_as_sfc()
))
airports_lima <- get_ceplan_data(region = lima, layer = "cn_aeropuertosx",
  show_progress = FALSE)
nrow(airports_lima)

## End(Not run)
```

get_data_sources

*List providers, description, year and link***Description**

List the available providers of the geoidep package.

Usage

```
get_data_sources(query = NULL)
```

Arguments

query	A string. Default is NULL. Filter by provider name(s). For valid values use <code>get_providers()</code> .
-------	--

Value

A tibble object.

Examples

```
## Not run:
library(geoidep)
get_data_sources()

## End(Not run)
```

get_departaments	<i>Download INEI departmental boundaries</i>
------------------	--

Description

Download the latest version of the **geometry** and **ubigeos** corresponding to the official political division of the department boundaries of Peru. For more information, visit [INEI Spatial Data Portal](#).

Usage

```
get_departaments(
  departamento = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

departamento	Character. Name or names in a vector of the level-1 administrative boundary (department) to query. Case-insensitive.
dsn	Character. Directory where the file will be saved. If NULL, a temporary file is used.
show_progress	Logical. Show a cli progress bar. Default TRUE.
quiet	Logical. Suppress info message from <code>sf::st_read()</code> .
timeout	Numeric. Seconds to wait for a response. Default 60.

Value

An sf object.

Examples

```
## Not run:
library(geoidep)
dep <- get_departaments(show_progress = FALSE)
head(dep)
loreto <- get_departaments(departamento = "loreto", show_progress = FALSE)
head(loreto)

## End(Not run)
```

get_districts	<i>Download INEI district boundaries</i>
---------------	--

Description

Download the latest version of the **geometry** and **ubigeos** corresponding to the official political division of the district boundaries of Peru. For more information, visit [INEI Spatial Data Portal](#).

Usage

```
get_districts(  
  departamento = NULL,  
  provincia = NULL,  
  distrito = NULL,  
  dsn = NULL,  
  show_progress = TRUE,  
  quiet = TRUE,  
  timeout = 60  
)
```

Arguments

departamento	Character. Level-1 name. Case-insensitive.
provincia	Character. Level-2 name. Case-insensitive.
distrito	Character. Level-3 name. Case-insensitive.
dsn	Character. Directory where the file will be saved. If NULL, a temporary file is used.
show_progress	Logical. Show a cli progress bar.
quiet	Logical. Suppress info message.
timeout	Numeric. Seconds to wait for a response. Default 60.

Details

- **[Stable]**. Stable API.
- If no filter is supplied, the full national district dataset is returned.

Value

An sf object.

Examples

```
## Not run:
library(geoidep)
dist <- get_districts(show_progress = FALSE)
head(dist)
lima <- get_districts(departamento = "lima", provincia = "lima", show_progress = FALSE)
head(lima)

## End(Not run)
```

get_early_warning	<i>Download information on the latest deforestation alerts detected by Geobosque</i>
-------------------	--

Description

Download deforestation alert information detected by Geobosque for any polygon in Peru. The points come from the official vector service alertas_tempranas_pt_2026 (interop layer "Ultima semana") published at [Geobosque Interoperability](#). For more details, visit [Geobosque Platform](#).

Usage

```
get_early_warning(region, sf = TRUE, show_progress = TRUE)
```

Arguments

region	An sf object. Area of interest (must be EPSG:4326).
sf	Logical. Return an sf object (TRUE) or a tibble (FALSE).
show_progress	Logical. Show cli progress. Default TRUE.

Value

A tibble or sf object with the alert points (lng, lat, fecha_alerta, dia_jul, mes_alerta, ubigeo).

Examples

```
## Not run:
library(geoidep)
loreto <- get_departamentos(show_progress = FALSE) |> subset(nombdep == "LORETO")
warning_point <- get_early_warning(region = loreto, sf = TRUE, show_progress = FALSE)
head(warning_point)

## End(Not run)
```

get_forest_loss_data *Download the forest and loss information from Geobosque*

Description

Download the **ubigeos** corresponding to the official political division of the district, province or region boundaries of Peru with **forest and loss information**. For more information, visit [Geobosque Platform](#).

Usage

```
get_forest_loss_data(layer = NULL, ubigeo = NULL, show_progress = TRUE)
```

Arguments

layer	A string. One of stock_bosque_perdida_distrito, stock_bosque_perdida_provincia, stock_bosque_perdida_departamento.
ubigeo	A string. Ubigeo code: 6 digits (distrito), 4 digits (provincia), 2 digits (departamento).
show_progress	Logical. Show cli progress. Default TRUE.

Details

Available layers:

- **stock_bosque_perdida_distrito:** forest stock/loss for a district.
- **stock_bosque_perdida_provincia:** forest stock/loss for a province.
- **stock_bosque_perdida_departamento:** forest stock/loss for a region.

The data come from the wet-forest (bosque humedo) loss series of the current Geobosques API (years 2001-2025) and are returned with the historical column layout (anio, perdida, rango1-rango5, ubigeo).

Value

A tibble object.

Examples

```
## Not run:
library(geoidep)
geobosque <- get_forest_loss_data(
  layer = "stock_bosque_perdida_distrito",
  ubigeo = "010101",
  show_progress = FALSE)
head(geobosque)

## End(Not run)
```

get_hotspots_data	<i>Download available hot spot data from Serfor's Satellite Monitoring Unit</i>
-------------------	---

Description

Download the latest version of forest fire data available from the Satellite Monitoring Unit of the National Forestry and Wildlife Service of Peru. For more information, visit [Serfor Platform](#).

Usage

```
get_hotspots_data(dsn = NULL, show_progress = TRUE, quiet = TRUE)
```

Arguments

dsn	Character. Output filename. If missing, a temporary file is created.
show_progress	Logical. Show a cli progress bar. Default TRUE.
quiet	Logical. Suppress message from sf::st_read(). Default TRUE.

Value

An sf object.

Examples

```
## Not run:
library(geoidep)
library(sf)
hot_spots <- get_hotspots_data(show_progress = FALSE)
head(hot_spots)

## End(Not run)
```

get_igp_seismic_data	<i>Download seismic data from the Geophysical Institute of Peru (IGP)</i>
----------------------	---

Description

Download the Peruvian seismic catalogs published by the Centro Sismologico Nacional (CENSIS) of the Instituto Geofisico del Peru (IGP) through the same endpoint used by the [IGP seismic data repository](#): a GET request filtered by bounding box, magnitude and depth that returns an XLSX file. The epicentres are returned as an sf POINT layer (EPSG:4326) and, optionally, clipped to any user-supplied polygon with sf. For more information, visit [IGP](#).

Usage

```
get_igp_seismic_data(
  catalog = c("instrumental", "historic"),
  start_date = NULL,
  end_date = NULL,
  min_magnitude = 4,
  max_magnitude = 10,
  min_depth = 0,
  max_depth = 900,
  polygon = NULL,
  dsn = NULL,
  show_progress = TRUE,
  timeout = 180
)
```

Arguments

catalog	A string. One of instrumental (1960 to present) or historic (1471-1959).
start_date, end_date	Strings (YYYY-MM-DD). Only used when catalog = "instrumental"; defaults to the last 30 days. Ignored when catalog = "historic" (the repository fixes the period to 1471-01-01/1959-12-31).
min_magnitude, max_magnitude	Numerics. Magnitude range filter. Default 4 to 10.
min_depth, max_depth	Numerics. Depth range filter in km. Default 0 to 900.
polygon	An sf object. Its bounding box is sent to the server to narrow the download, and only the epicentres falling inside the polygon are returned. Any CRS is accepted (reprojected internally to EPSG:4326).
dsn	A string. Optional path where the raw XLSX file is saved. Default NULL (temporary file).
show_progress	Logical. Show cli progress. Default TRUE.
timeout	Numeric. Seconds to wait for the server response. The IGP service generates the XLSX on demand, so the default is 180.

Details

The XLSX response is parsed with base R only (utils::unzip()) plus a small internal reader, so no additional package is required. Very wide queries (e.g. the full historic catalog with low magnitudes) may exceed the server capacity (HTTP 502); narrow the filters and retry.

Value

An sf object (POINT, EPSG:4326). The instrumental catalog has columns fecha_utc, hora_utc, latitud, longitud, profundidad_km, magnitud; the historic catalog reports three magnitude scales (magnitud_mb, magnitud_ms, magnitud_mw).

Examples

```
## Not run:
library(geoidep)
sismos <- get_igp_seismic_data(
  catalog = "instrumental",
  start_date = "2026-08-24",
  end_date = "2026-09-24",
  min_magnitude = 4,
  show_progress = FALSE)
head(sismos)

## End(Not run)
```

get_inaigem_data

Download the available data from INAIGEM

Description

Download the latest version of data available on the INAIGEM geoportal. For more information, visit [INAIGEM Geoportal](#).

Usage

```
get_inaigem_data(
  layer = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

layer	Select only one from the list of available layers, for more information please use <code>get_data_sources(provider = "INAIGEM")</code> . Defaults to NULL.
dsn	Character. Output filename. If missing, a temporary file is created.
show_progress	Logical. Show a cli progress bar. Default TRUE.
quiet	Logical. Suppress info message. Default TRUE.
timeout	Numeric. Seconds to wait for a response. Default 60.

Value

An sf object.

Examples

```
## Not run:
library(geoidep)
library(sf)
glaciar <- get_inaigem_data(layer = "glaciares_1989", show_progress = FALSE)
head(glaciar)
plot(st_geometry(glaciar))

## End(Not run)
```

```
get_mapbiomas_alert_images
```

Download before/after deforestation images from MapBiomias Alerta Peru

Description

Download satellite imagery (before/after deforestation) for specific MapBiomias Alerta alerts from public Google Cloud Storage buckets. Progress uses [cli](#).

Usage

```
get_mapbiomas_alert_images(
  alert_ids,
  download_dir = NULL,
  image_type = "both",
  show_progress = TRUE,
  overwrite = FALSE
)
```

Arguments

alert_ids	Character or numeric vector. Alert IDs to download images for.
download_dir	Character. Directory where images will be saved. If NULL, a temporary directory is used.
image_type	Character. Which images to download: "both" (default), "before", or "after".
show_progress	Logical. Show cli progress. Default TRUE.
overwrite	Logical. Overwrite existing files. Default FALSE.

Details

File names follow the pattern `alert_{id}_before_deforestation.png` and `alert_{id}_after_deforestation.png`. Each image has a 120-second timeout.

Value

A tibble with columns `alert_id`, `image_type`, `url`, `local_path`, `status`, `error_message`.

Examples

```
## Not run:
library(geoidep)
aoi <- get_departaments(show_progress = FALSE) |>
  subset(nombdep == "UCAYALI")
alerts <- get_mapbiomas_peru_alerta(region = aoi, show_progress = FALSE)
alert_ids <- alerts$id[1:5]
download_dir <- file.path(tempdir(), "mapbiomas_images")
results <- get_mapbiomas_alert_images(
  alert_ids = alert_ids,
  download_dir = download_dir,
  show_progress = FALSE
)
head(results)

## End(Not run)
```

```
get_mapbiomas_peru_alerta
```

Download MapBiomass Alerta Peru deforestation alerts with spatial filtering

Description

Download the latest deforestation alerts detected by MapBiomass Alerta Peru for a specific geographic area using an sf object (bounding box or polygon). For more details, please visit: [Map-Biomass Peru Platform](#)

Usage

```
get_mapbiomas_peru_alerta(
  region = NULL,
  from = NULL,
  to = NULL,
  dsn = NULL,
  method = "within",
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

region	An sf object specifying the area of interest (must be in EPSG:4326 - WGS 84).
from	Character. Start date in "YYYY-MM-DD" format. If NULL, no lower bound.
to	Character. End date in "YYYY-MM-DD" format. If NULL, no upper bound.
dsn	Character. Output filename. If missing, a temporary GeoJSON file is created.

method	Character. Spatial predicate used to filter the downloaded alerts against region: "intersects" (safest default is "within" for backward compatibility), "within", "contains", "crosses", "touches".
show_progress	Logical. Show cli progress. Default TRUE.
quiet	Logical. Suppress messages from sf::st_read(). Default TRUE.
timeout	Numeric. Seconds to wait for the server response (default 60).

Details

The bounding box of region is used to query the WFS service. Image URLs are generated from the alert id and point to public Google Cloud Storage buckets. Column names are normalised to lowercase.

Value

An sf object with alert geometries, attributes and image URLs.

```
get_mapbiomas_peru_fire
```

Get a MapBiomas Peru Fire raster

Description

Lazily reads a MapBiomas Fuego (Fire) Peru raster from a given sub-product, hosted as a GeoTIFF on Google Cloud Storage. Only the bytes required for the requested extent are downloaded (via GDAL's /vsicurl/ driver). Optionally crops and masks the raster to an area of interest.

Usage

```
get_mapbiomas_peru_fire(product, year, crop_to = NULL, collection = 1)
```

Arguments

product	Character. One of the products listed in get_mapbiomas_peru_fire_products, e.g. "annual_burned".
year	Integer. For "annual" products, the map year (from 1999). For "range" products (accumulated_*, frequency_burned), the end year (from 2014, range starts 2013).
crop_to	Optional. An sf/sfc object, SpatVector, or SpatExtent. If NULL, the full raster is returned.
collection	Integer. MapBiomas Fuego Peru collection. Default 1 (only one available).

Value

A SpatRaster with one layer.

Examples

```
## Not run:
library(geoidep)
lima <- get_departaments("LIMA")
burned_2024 <- get_mapbiomas_peru_fire(product = "annual_burned", year = 2024, crop_to = lima)

## End(Not run)
```

```
get_mapbiomas_peru_fire_legend
```

Get the MapBiomas Peru Fire legend for a given product

Description

Returns a lookup table with the pixel value codes, English/Spanish class names, and hexadecimal colors used by a given MapBiomas Fuego Peru sub-product (Collection 1). Useful for building color scales (see [scale_fill_mapbiomas_peru_fire_d](#)).

Usage

```
get_mapbiomas_peru_fire_legend(product)
```

Arguments

product Character. One of the products listed in [get_mapbiomas_peru_fire_products](#).

Details

- `annual_burned` and `accumulated_burned`: binary classification (1 = "Burned area").
- `annual_burned_coverage` and `accumulated_burned_coverage`: share the LULC legend.
- `monthly_burned`: values 1-12 = month of burning.
- `frequency_burned`: values 1-12 = burn count (12 = "12 or more times").
- `year_last_fire`: values are years (2013-2024).
- `annual_burned_scar_size_range`: values 1-5 = scar size class.

Value

A tibble with columns `id`, `class_en`, `class_es`, and `hex`.

Examples

```
library(geoidep)
get_mapbiomas_peru_fire_legend("frequency_burned")
```

`get_mapbiomas_peru_fire_products`*Get available MapBiomass Peru Fire products*

Description

Returns a lookup table describing the MapBiomass Fuego (Fire) Peru sub-products available for download, including their internal codes, descriptions, and whether they are indexed by a single year or by a year range (starting in 2013).

Usage

```
get_mapbiomas_peru_fire_products()
```

Value

A tibble with columns `product`, `description_en`, `description_es`, and `temporal` ("annual" or "range").

Examples

```
library(geoidep)
get_mapbiomas_peru_fire_products()
```

`get_mapbiomas_peru_lulc`*Get MapBiomass Peru land use / land cover raster*

Description

Lazily reads a single-year Land Use and Land Cover (LULC) classification raster from the MapBiomass Peru collection. Only the bytes required for the requested extent are downloaded (via GDAL's `/vsicurl/` driver). Optionally crops and masks the raster to an area of interest.

Usage

```
get_mapbiomas_peru_lulc(year, crop_to = NULL, collection = 4)
```

Arguments

<code>year</code>	Integer. Year of the classification (e.g. 2024).
<code>crop_to</code>	Optional. An <code>sf/sfc</code> object, <code>SpatVector</code> , or <code>SpatExtent</code> . If <code>NULL</code> , the full raster for Peru is returned.
<code>collection</code>	Integer. MapBiomass Peru collection number (1, 2, 3, 4). Default 4.

Value

A SpatRaster with one layer named classification_<year>.

Examples

```
## Not run:
library(geoidep)
lima <- get_departaments("LIMA", show_progress = FALSE)
lulc_2024 <- get_mapbiomas_peru_lulc(year = 2024, crop_to = lima)
lulc_2024
lulc_2025 <- get_mapbiomas_peru_lulc(year = 2025, collection = 4, crop_to = lima)
lulc_2025

## End(Not run)
```

```
get_mapbiomas_peru_lulc_series
```

Get a multi-year stack of MapBiomass Peru LULC rasters

Description

Downloads and stacks multiple single-year LULC rasters from MapBiomass Peru (see [get_mapbiomas_peru_lulc](#)), each cropped to the same area of interest if provided. Progress uses [cli](#).

Usage

```
get_mapbiomas_peru_lulc_series(
  years,
  crop_to = NULL,
  collection = 4,
  show_progress = TRUE
)
```

Arguments

years	Integer vector. Years to download (e.g. 2018:2024).
crop_to	Optional. An sf/sfc object, SpatVector, or SpatExtent. If NULL, each raster is returned at full extent.
collection	Integer. MapBiomass Peru collection number (1, 2, 3, 4). Default 4.
show_progress	Logical. Show a cli progress bar. Default TRUE.

Value

A SpatRaster with one layer per year, named classification_<year>.

Examples

```
## Not run:
library(geoidep)
lima <- get_departaments("LIMA", show_progress = FALSE)
lulc_series <- get_mapbiomas_peru_lulc_series(years = 2020:2024, crop_to = lima)
lulc_series

## End(Not run)
```

get_mtc_data	Download the available data from MTC
--------------	--------------------------------------

Description

Download the latest version of data available on the MTC geoportal. For more information, visit [MTC Geoportal](#).

Usage

```
get_mtc_data(
  layer = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

layer	Select only one from the list of available layers, for more information please use <code>get_data_sources(provider = "mtc")</code> . Defaults to NULL.
dsn	Character. Output filename with the spatial format . If missing, a temporary file is created.
show_progress	Logical. Show a cli progress bar. Default TRUE.
quiet	Logical. Suppress info message. Default TRUE.
timeout	Numeric. Seconds to wait for a response. Default 60.

Value

An sf object.

Examples

```
## Not run:
library(geoidep)
library(sf)
aerodromo <- get_mtc_data(layer = "aerodromos_2023", show_progress = FALSE)
head(aerodromo)
plot(st_geometry(aerodromo))

## End(Not run)
```

get_oefa_data

Download OEFA-PIFA geospatial layers with spatial filtering

Description

Download any public layer from the environmental enforcement IDE of the Environmental Assessment and Enforcement Agency - OEFA (<https://sistemas.oefa.gob.pe/pifa/mfe/#/interoperabilidad>). When region is supplied, its bounding box is used to query the WFS service and the downloaded features are then filtered to those falling inside region. When region is NULL, the whole layer is downloaded.

Usage

```
get_oefa_data(
  region = NULL,
  layer = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

region	An sf object specifying the area of interest (must be in EPSG:4326 - WGS 84). If NULL, the full layer is downloaded.
layer	A string. Layer key (e.g. "derechos_mineros"). Run get_data_sources("Oefa") to list the 68 available layers.
dsn	Character. Output filename. If supplied, the result is written to this file. If missing, a temporary file is used internally.
show_progress	Logical. Show cli progress. Default TRUE.
quiet	Logical. Suppress messages from sf::st_read(). Default TRUE.
timeout	Numeric. Seconds to wait for the server response (default 60).

Details

Column names are normalised to lowercase. The WFS 2.0.0 bbox filter requires latitude/longitude axis order for EPSG:4326, which is handled internally.

Value

An sf object with the layer geometries and attributes.

Examples

```
## Not run:
library(geoidep)
get_data_sources("Oefa")

# Full layer download (mining rights countrywide)
mining <- get_oefa_data(layer = "derechos_mineros", show_progress = FALSE)
head(mining)

# Features inside a region of interest
lima <- sf::st_sf(geometry = sf::st_sfc(
  sf::st_bbox(c(xmin = -77.2, ymin = -12.6, xmax = -76.6, ymax = -11.7),
    crs = sf::st_crs(4326)) |>
  sf::st_as_sfc()
))
mining_lima <- get_oefa_data(region = lima, layer = "derechos_mineros",
  show_progress = FALSE)
nrow(mining_lima)

## End(Not run)
```

get_providers

List resources and count layers of IDEP

Description

Summary of providers.

Usage

```
get_providers(query = NULL)
```

Arguments

query Character. Default is NULL (only NULL is valid).

Value

A tibble with columns provider and layer_count.

Examples

```
## Not run:
library(geoidep)
get_providers()

## End(Not run)
```

get_provinces	<i>Download INEI province boundaries</i>
---------------	--

Description

Download the latest version of the **geometry** and **ubigeos** corresponding to the official political division of the province boundaries of Peru. For more information, visit [INEI Spatial Data Portal](#).

Usage

```
get_provinces(
  departamento = NULL,
  provincia = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

departamento	Character. Name of the level-1 administrative boundary (department). Case-insensitive.
provincia	Character. Name of the level-2 administrative boundary (province). Case-insensitive. Requires departamento.
dsn	Character. Directory where the file will be saved. If NULL, a temporary file is used.
show_progress	Logical. Show a cli progress bar.
quiet	Logical. Suppress info message.
timeout	Numeric. Seconds to wait for a response. Default 60.

Value

An sf object.

Examples

```
## Not run:
library(geoidep)
prov <- get_provinces(show_progress = FALSE)
head(prov)

## End(Not run)
```

`get_sernanp_data`*Download the available data from Sernanp*

Description

Download the latest version of data available on the sernanp geoviewer. For more information, visit [Sernanp Platform](#).

Usage

```
get_sernanp_data(
  layer = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

<code>layer</code>	Select only one from the list of available layers, for more information please use <code>get_data_sources(provider = "sernanp")</code> . Defaults to NULL.
<code>dsn</code>	Character. Output filename. If missing, a temporary file is created.
<code>show_progress</code>	Logical. Show a cli progress bar. Default TRUE.
<code>quiet</code>	Logical. Suppress info message. Default TRUE.
<code>timeout</code>	Numeric. Seconds to wait for a response. Default 60.

Value

An sf object.

Examples

```
## Not run:
library(geoidep)
library(sf)
anp <- get_sernanp_data(layer = "zonificacion_anp", show_progress = FALSE)
plot(st_geometry(anp))

## End(Not run)
```

```
scale_fill_mapbiomas_peru_fire_d
```

Discrete fill scale for MapBiomass Peru Fire products

Description

A ggplot2 discrete fill scale that applies the official MapBiomass Fuego Peru (Collection 1) color palette for a given sub-product to a classified SpatRaster (as a factor), for use with tidyterra::geom_spatraster().

Usage

```
scale_fill_mapbiomas_peru_fire_d(
  product,
  ...,
  lang = c("en", "es"),
  na.translate = FALSE
)
```

Arguments

product	Character. One of the products listed in get_mapbiomas_peru_fire_products .
...	Additional arguments passed to scale_fill_manual .
lang	Character. Legend language, either "en" (default) or "es".
na.translate	Logical. Should NA values be displayed in the legend? Default FALSE.

Value

A ggplot2 discrete scale object.

Examples

```
## Not run:
library(geoidep)
library(ggplot2)
library(tidyterra)
lima <- get_departamentos("LIMA", show_progress = FALSE)
freq <- get_mapbiomas_peru_fire(product = "frequency_burned", year = 2024, crop_to = lima)
ggplot() +
  geom_spatraster(data = as.factor(freq)) +
  scale_fill_mapbiomas_peru_fire_d("frequency_burned", lang = "es") +
  theme_minimal()

## End(Not run)
```

`scale_fill_mapbiomas_peru_lulc_d`*Discrete fill scale for MapBiomass Peru LULC classes*

Description

A ggplot2 discrete fill scale that applies the official MapBiomass Peru Collection 3 color palette to a classified SpatRaster (as a factor), for use with `tidyterra::geom_spatraster()`.

Usage

```
scale_fill_mapbiomas_peru_lulc_d(  
  ...,  
  lang = c("en", "es"),  
  na.translate = FALSE  
)
```

Arguments

<code>...</code>	Additional arguments passed to <code>scale_fill_manual</code> .
<code>lang</code>	Character. Legend language, either "en" (default) or "es".
<code>na.translate</code>	Logical. Should NA values be displayed in the legend? Default FALSE.

Value

A ggplot2 discrete scale object.

Examples

```
## Not run:  
library(geoidep)  
library(ggplot2)  
library(tidyterra)  
lima <- get_departamentos("LIMA")  
lulc_2024 <- get_mapbiomas_peru_lulc(year = 2024, crop_to = lima)  
ggplot() +  
  geom_spatraster(data = as.factor(lulc_2024)) +  
  scale_fill_mapbiomas_peru_lulc_d(lang = "es") +  
  theme_minimal() +  
  labs(fill = "Cobertura/Uso", title = "MapBiomass Peru 2024")  
  
## End(Not run)
```

`senamhi_alerts_by_year`*Filter Senamhi alerts by year*

Description

Filter Senamhi alerts by year

Usage

```
senamhi_alerts_by_year(data, year)
```

Arguments

<code>data</code>	A data frame of meteorological alerts.
<code>year</code>	A numeric value indicating the year.

Value

A filtered tibble.

`senamhi_alert_by_number`*Filter Senamhi alerts by number*

Description

Filter Senamhi alerts by number

Usage

```
senamhi_alert_by_number(data, nro)
```

Arguments

<code>data</code>	A data frame of meteorological alerts.
<code>nro</code>	A numeric vector indicating the alert number(s).

Value

A filtered tibble.

`senamhi_geometry_by_level`*Filter alert geometry by danger level*

Description

This function filters the sf object from Senamhi by alert level (e.g., 1 to 4).

Usage

```
senamhi_geometry_by_level(sf_data, level)
```

Arguments

<code>sf_data</code>	An sf object returned by <code>senamhi_get_spatial_alerts()</code> .
<code>level</code>	Numeric or character vector: values like 1, 2, 3, 4 or "Nivel 1", etc.

Value

Filtered sf object.

Examples

```
## Not run:
senamhi_get_meteorological_table() |>
  senamhi_alert_by_number(295) |>
  senamhi_alerts_by_year(2024) |>
  senamhi_get_spatial_alerts(show_progress = FALSE) |>
  senamhi_geometry_by_level(3) |>
  plot()

## End(Not run)
```

`senamhi_get_meteorological_table`*Download Weather Alert Table from Senamhi*

Description

This function downloads the table of weather warnings provided by Senamhi. For more information, please visit the following link: <https://www.senamhi.gob.pe/?p=aviso-meteorologico>

Usage

```
senamhi_get_meteorological_table(show_progress = TRUE, timeout = 60)
```

Arguments

show_progress Logical. Show a cli progress bar. Default TRUE.
 timeout Numeric. Seconds to wait for the server response. Default 60.

Value

A tibble object containing the weather alert data.

Examples

```
## Not run:
data <- senamhi_get_meteorological_table(show_progress = FALSE)
head(data)

## End(Not run)
```

senamhi_get_spatial_alerts

Download Meteorological Alert Geometry from Senamhi

Description

This function downloads the spatial alert geometry (shapefile) from Senamhi for a given alert.

Usage

```
senamhi_get_spatial_alerts(
  data = NULL,
  nro = NULL,
  year = NULL,
  dsn = NULL,
  show_progress = TRUE,
  quiet = TRUE,
  timeout = 60
)
```

Arguments

data A data frame with a single alert (with columns nro and emission), or NULL if you specify nro and year.
 nro A numeric value (optional if data is provided).
 year A numeric value (optional if data is provided).
 dsn Path to save the downloaded .zip. If NULL, a temporary file is used.
 show_progress Logical, show cli progress bar.
 quiet Logical, suppress messages from sf::st_read().
 timeout Numeric. Seconds to wait for a response. Default 60.

Value

An sf object with the alert geometry.

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