Package: jpmap (via r-universe)

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Title Japan Maps with Insets for Okinawa and Ogasawara

Version 0.1.3

URL https://yhoriuchi.github.io/jpmap/,
https://github.com/yhoriuchi/jpmap

BugReports https://github.com/yhoriuchi/jpmap/issues

Description Provides tools for drawing maps of Japan with prefecture and municipal boundaries. The plotting workflow mirrors the 'usmap' package and includes a transform that moves Okinawa and Ogasawara into visible inset locations. Boundary helpers build local 'GeoPackage' files from Japan's official MLIT N03 administrative area data <https://nlftp.mlit.go.jp/ksj/gml/datalist/KsjTmplt-N03-2024.html>.

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Imports ggplot2, rlang, sf

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Config/Needs/website pkgdown, knitr, rmarkdown, ggplot2, sf, leaflet, dplyr, ggthemes, tibble, tidyverse

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Contents

`jp_disputed_territories` *Retrieve Disputed-Territory Island And Reef Shapes*

Description

Returns cartographic island/reef shapes for disputed territories or disputed maritime/EEZ-status areas discussed in Japan territorial-dispute references. These geometries are intentionally separate from the MLIT N03 administrative boundary data and are not authoritative legal boundary polygons.

Usage

```
jp_disputed_territories(
  territorial_disputes = TRUE,
  regions = c("prefectures", "prefecture", "municipalities", "municipality"),
  inset = TRUE,
  okinawa = TRUE,
  ogasawara = TRUE
)
```

Arguments

territorial_disputes
: Which disputed-territory shapes to include. Use TRUE for all built-in shapes, FALSE for none, or a character vector containing one or more of "northern_territories", "okinotorishima", "senkaku", and "takeshima". Common aliases such as "kuril", "liancourt", "dokdo", and "diaoyu" are also accepted.

regions
: Boundary level whose columns should be mirrored: prefectures or municipalities.

inset
: Inset behavior. Use TRUE to move Okinawa and Ogasawara, FALSE for literal projected locations, or a character vector containing "okinawa" and/or "ogasawara".

okinawa
: Whether Okinawa should be moved when inset includes it.

ogasawara
: Whether Ogasawara should be moved when inset includes it.

Value

An sf data frame.

Source

Territory list based on https://en.wikipedia.org/wiki/Territorial_disputes_of_Japan. Shapes are derived from Natural Earth 1:10m land polygons and OpenStreetMap geometry.

Examples

```
jp_disputed_territories()
jp_disputed_territories(c("senkaku", "takeshima"))
```

---

jp_map *Retrieve Japan Map Data*

Description

Reads Japan administrative boundary data and returns an sf object.

Usage

```
jp_map(
  regions = c("prefectures", "prefecture", "municipalities", "municipality"),
  include = c(),
  exclude = c(),
  data_year = NULL,
  inset = TRUE,
  okinawa = TRUE,
  ogasawara = TRUE,
  territorial_disputes = TRUE,
  data_dir = NULL
)
```

Arguments

regions	Boundary level: prefectures or municipalities.
include	Regions to include by code, English name, or Japanese name.
exclude	Regions to exclude by code, English name, or Japanese name.
data_year	Boundary data year. The newest appropriate available file is used by default. For example, national prefecture maps prefer a national file, while one-prefecture municipal requests can use a matching prefecture file.
inset	Inset behavior. Use TRUE to move both Okinawa and Ogasawara, FALSE for no movement, or a character vector containing "okinawa" and/or "ogasawara" to move selected island groups.
okinawa	Whether Okinawa should be moved when inset includes it.
ogasawara	Whether Ogasawara should be moved when inset includes it.
territorial_disputes	Whether to include disputed-territory island/reef shapes. Use FALSE to exclude them, or a character vector containing one or more of "northern_territories", "okinotorishima", "senkaku", and "takeshima".
data_dir	Optional directory containing jpmap_boundaries_YYYY.gpkg.

Value

An sf data frame.

Examples

```
if (nrow(available_jpmap_data()) > 0) {
  jp_map("prefectures")
  jp_map("prefectures", okinawa = FALSE)
  jp_map("prefectures", territorial_disputes = FALSE)
  jp_map("municipalities", include = "Okinawa")
  jp_map("prefecture")
  jp_map("municipality", include = "Okinawa")
}
```

---

jp_map_join *Join User Data to a jpmap Boundary Object*

Description

jp_map_join() attaches columns from a user data frame to an sf object returned by jp_map(). It is designed for common Japan-map keys, including pref_code, jis_code, and municipality_code, and keeps leading zeroes from getting in the user's way.

Usage

```
jp_map_join(
  map,
  data,
  by = NULL,
  values = NULL,
  unmatched = c("warning", "error", "ignore"),
  multiple = c("error", "first")
)
```

Arguments

map	An sf object returned by jp_map().
data	A data frame with one row per region to join.
by	Join column. If NULL, jpmap guesses from common columns such as jis_code, municipality_code, pref_code, prefecture, prefecture_ja, municipality, and municipality_ja. To join columns with different names, use a named character vector such as c("pref_code" = "code"), where the name is the map column and the value is the data column.
values	Optional column expected to exist after joining. This is useful when checking data before passing it to a plotting function.
unmatched	What to do when user data rows do not match the map, or map regions do not receive a data row. One of "warning", "error", or "ignore".
multiple	What to do when data has duplicate join keys. One of "error" or "first".

Value

An sf object with non-geometry columns from data joined to map.

Examples

```
if (requireNamespace("dplyr", quietly = TRUE) &&
    nrow(available_jpmap_data()) > 0) {
  data("jp_prefecture_gdp")

  gdp <- jp_prefecture_gdp |>
    dplyr::select(pref_code, gdp_per_capita_jpy)

  joined <- jp_map("prefecture") |>
    jp_map_join(gdp, by = "pref_code")

  "gdp_per_capita_jpy" %in% names(joined)
}
```

jp_map_leaflet *Draw an Interactive Japan Map with leaflet*

Description

`jp_map_leaflet()` creates a simple interactive web map from `jpmap` boundaries. It uses literal longitude/latitude geography because Leaflet web tiles expect WGS84 coordinates. Use `plot_jpmap()` when you want the static Okinawa and Ogasawara inset layout.

Usage

```
jp_map_leaflet(
  regions = c("prefectures", "prefecture", "municipalities", "municipality"),
  include = c(),
  exclude = c(),
  data = data.frame(),
  values = NULL,
  by = NULL,
  data_year = NULL,
  territorial_disputes = TRUE,
  data_dir = NULL,
  palette = "Blues",
  fill = "grey92",
  color = "grey35",
  weight = 1,
  opacity = 1,
  fill_opacity = 0.75,
  na_color = "#D9D9D9",
  label = NULL,
  popup = NULL,
  tiles = TRUE,
  legend = TRUE,
  fit_bounds = TRUE,
  simplify_tolerance = NULL,
  disputed_fill = NULL,
  disputed_color = NULL,
  disputed_dots = FALSE,
  disputed_dot_radius = 5,
  ...
)
```

Arguments

`regions`	Boundary level: prefectures or municipalities.
`include`	Regions to include by code, English name, or Japanese name.
`exclude`	Regions to exclude by code, English name, or Japanese name.

data	Optional data frame to join to the map before drawing.
values	Optional column to use for polygon fill colors.
by	Optional join column passed to jp_map_join().
data_year	Boundary data year. The newest appropriate available file is used by default.
territorial_disputes	Whether to include disputed-territory island/reef shapes. Use FALSE to exclude them, or a selected character vector.
data_dir	Optional directory containing jpmap_boundaries_YYYY.gpkg.
palette	Palette name or color vector passed to Leaflet palette functions when values is supplied.
fill	Polygon fill color used when values is NULL.
color	Polygon outline color.
weight	Polygon outline weight.
opacity	Polygon outline opacity.
fill_opacity	Polygon fill opacity.
na_color	Fill color for missing values.
label	NULL for default region labels, FALSE for no labels, a column name, or a character vector with one value per map row.
popup	NULL for default popups, FALSE for no popups, a column name, or a character vector with one value per map row.
tiles	Whether to add default OpenStreetMap tiles.
legend	Whether to add a legend when values is supplied.
fit_bounds	Whether to zoom the widget to the map bounds.
simplify_tolerance	Optional tolerance passed to sf::st_simplify() before drawing polygons. This is useful for smaller website widgets.
disputed_fill	Optional fill color for disputed-territory shapes. When NULL, the ordinary map fill is used.
disputed_color	Optional outline color for disputed-territory shapes. When NULL, the ordinary map outline is used.
disputed_dots	Whether to draw circle markers on disputed-territory shapes.
disputed_dot_radius	Radius for disputed-territory circle markers.
...	Additional arguments passed to leaflet::leaflet().

Value

A leaflet htmlwidget.

Examples

```
if (requireNamespace("leaflet", quietly = TRUE) &&
    requireNamespace("dplyr", quietly = TRUE) &&
    nrow(available_jpmap_data()) > 0) {
  data("jp_prefecture_gdp")

  gdp <- jp_prefecture_gdp |>
    dplyr::select(pref_code, prefecture, gdp_per_capita_jpy)

  jp_map_leaflet(
    "prefecture",
    data = gdp,
    values = "gdp_per_capita_jpy",
    popup = "prefecture"
  )
}
```

---

jp_map_with_data *Join Data to a jpmap Map*

Description

Joins user data to a Japan map object. This is a compact wrapper around `jp_map_join()` kept for plotting workflows that call it internally.

Usage

```
jp_map_with_data(map, data, values = NULL, by = NULL)
```

Arguments

`map`	An `sf` object returned by `jp_map()`.
`data`	A data frame containing a matching administrative code or name column.
`values`	Optional value column to check after joining.
`by`	Optional join column. If omitted, jpmap guesses from common columns.

Value

An `sf` object.

jp_prefecture_gdp *GDP per capita by Japanese prefecture*

Description

A sample data frame containing 2021 prefecture GDP per capita values.

Format

A data frame with 47 rows and 6 variables:

pref_code Two-digit Japanese prefecture code.

prefecture Prefecture name in English.

year Reference year.

gdp_per_capita_jpy GDP per capita in Japanese yen.

gdp_per_capita_usd_ppp GDP per capita in U.S. dollars at PPP.

source Source note.

Source

OECD 2021 regional GDP per-capita values as tabulated at https://en.wikipedia.org/wiki/List_of_Japanese_prefectures_by_GDP_per_capita.

jp_us_military_bases *Selected U.S. military installations in Japan*

Description

A sample data frame containing selected U.S. military installations in Japan with longitude/latitude coordinates and public approximate personnel figures where those figures have a clear source.

Format

A data frame with 17 rows and 12 variables:

base Installation or command name.

branch Primary U.S. military branch.

prefecture Japanese prefecture.

municipality Municipality or municipalities.

lon Longitude in WGS84.

lat Latitude in WGS84.

personnel Approximate public personnel figure, when available.

personnel_scope What the public figure counts.

personnel_geography Whether the figure describes an installation, regional total, command, or broader installation community.

personnel_is_base_specific Whether `personnel` is interpreted as a base-specific figure.

source_url Source URL.

note Caveat for use in examples.

Details

These values are intended for examples and are not an official personnel accounting. Some rows describe broader installation, regional, command, or community populations; see `personnel_scope` and `personnel_geography`.

Source

Public installation, command, and regional pages listed in the `source_url` column, including https://en.wikipedia.org/wiki/Misawa_Air_Base, https://en.wikipedia.org/wiki/Yokota_Air_Base, and https://en.wikipedia.org/wiki/Okinawa_Island.

---

jpmap_crs *Coordinate Reference System for jpmap*

Description

Returns the projected coordinate reference system used by jpmap.

Usage

```
jpmap_crs()
```

Value

An `sf::st_crs()` object.

jpmap_data *Manage jpmap Boundary Data*

Description

Helpers for locating and building the GeoPackage boundary data used by jpmap. Boundary GeoPackage files can come from the separate `jpmapdata` package or from files built locally with `jpmap_build_data()`.

Usage

```
jpmap_data_dir(create = TRUE)

available_jpmap_data(data_dir = NULL)

jpmap_build_data(
  year = 2024,
  prefecture = NULL,
  destdir = jpmap_data_dir(),
  url = NULL,
  overwrite = FALSE,
  quiet = FALSE,
  simplify_tolerance = NULL
)
```

Arguments

`create`	Whether to create the default data directory.
`data_dir`	Optional directory to scan for boundary data.
`year`	Boundary data year.
`prefecture`	Optional prefecture code, English name, or Japanese name. When supplied, only that prefecture's official MLIT N03 file is downloaded and built.
`destdir`	Directory where the generated GeoPackage should be written.
`url`	Optional source URL. By default, an MLIT N03 URL is constructed.
`overwrite`	Whether to overwrite an existing GeoPackage.
`quiet`	Whether to suppress messages from download and spatial reads/writes.
`simplify_tolerance`	Optional tolerance passed to `sf::st_simplify()`.

Value

`jpmap_data_dir()` returns a path, `available_jpmap_data()` returns a data frame with `year`, `pref_code`, `prefecture`, `source`, and `path`, and `jpmap_build_data()` invisibly returns the generated file.

Source

MLIT National Land Numerical Information N03 administrative area data: https://nlftp.mlit.go.jp/ksj/gml/datalist/KsjTmplt-N03-2024.html.

Examples

```
jpmap_data_dir(create = FALSE)
available_jpmap_data()


jpmap_build_data(
  year = 2024,
  prefecture = "Ehime",
  destdir = tempdir(),
  overwrite = TRUE,
  quiet = TRUE
)
```

---

jpmap_transform *Transform Data to the jpmap Projection*

Description

Transforms geographic data to the jpmap projected coordinate system. When `inset = TRUE`, Okinawa and Ogasawara are moved to visible inset locations. Use `okinawa = FALSE`, `ogasawara = FALSE`, `inset = "okinawa"`, or `inset = "ogasawara"` to transport only one island group.

Usage

```
jpmap_transform(
  data,
  input_names = c("lon", "lat"),
  output_names = input_names,
  inset = TRUE,
  okinawa = TRUE,
  ogasawara = TRUE
)
```

Arguments

`data`	An `sf` object, `sfc` geometry vector, or data frame.
`input_names`	Longitude and latitude column names for data frames.
`output_names`	Output coordinate column names for data frames.
`inset`	Inset behavior. Use `TRUE` to move both Okinawa and Ogasawara, `FALSE` for no movement, or a character vector containing `"okinawa"` and/or `"ogasawara"` to move selected island groups.

okinawa	Whether Okinawa should be moved when inset includes it.
ogasawara	Whether Ogasawara should be moved when inset includes it.

Value

An object of the same general type as data.

Examples

```
if (requireNamespace("tibble", quietly = TRUE)) {
  places <- tibble::tribble(
    ~place, ~lon, ~lat,
    "Tokyo", 139.767, 35.681,
    "Naha", 127.681, 26.212,
    "Ogasawara", 142.191, 27.094
  )

  places |>
    jpmap_transform(output_names = c("x", "y"))
  places |>
    jpmap_transform(output_names = c("x", "y"), inset = "okinawa")
  places |>
    jpmap_transform(output_names = c("x", "y"), ogasawara = FALSE)
}
```

---

plot_jpmap *Plot a Japan Map*

Description

Plots Japan prefecture or municipal boundaries using ggplot2.

Usage

```
plot_jpmap(
  regions = c("prefectures", "prefecture", "municipalities", "municipality"),
  include = c(),
  exclude = c(),
  data = data.frame(),
  values = NULL,
  labels = FALSE,
  label_color = "black",
  data_year = NULL,
  inset = TRUE,
  okinawa = TRUE,
  ogasawara = TRUE,
  territorial_disputes = TRUE,
  disputed_fill = NULL,
```

```
  disputed_color = NULL,
  disputed_linewidth = NULL,
  disputed_dots = FALSE,
  disputed_dot_fill = "#001040",
  disputed_dot_color = "white",
  disputed_dot_size = 1.25,
  disputed_dot_stroke = 0.2,
  inset_boxes = TRUE,
  inset_box_color = "grey50",
  inset_box_linewidth = 0.35,
  data_dir = NULL,
  xlim = NULL,
  ylim = NULL,
  x_breaks = ggplot2::waiver(),
  y_breaks = ggplot2::waiver(),
  x_labels = ggplot2::waiver(),
  y_labels = ggplot2::waiver(),
  fill = "grey92",
  color = "grey35",
  linewidth = 0.25,
  ...
)
```

Arguments

regions	Boundary level: prefectures or municipalities.
include	Regions to include by code, English name, or Japanese name.
exclude	Regions to exclude by code, English name, or Japanese name.
data	Optional data frame to join to the map.
values	Column name in data to use as the fill variable.
labels	Whether to draw region labels.
label_color	Label text color.
data_year	Boundary data year.
inset	Inset behavior. Use TRUE to move both Okinawa and Ogasawara, FALSE for no movement, or a character vector containing "okinawa" and/or "ogasawara" to move selected island groups. For filtered municipality maps such as plot_jpmap("municipality", include = "Okinawa"), the default plot frame is local and non-inset unless inset is supplied explicitly.
okinawa	Whether Okinawa should be moved when inset includes it.
ogasawara	Whether Ogasawara should be moved when inset includes it.
territorial_disputes	Whether to include disputed-territory island/reef shapes. Use FALSE to exclude them, or a character vector containing one or more of "northern_territories", "okinotorishima", "senkaku", and "takeshima".
disputed_fill	Optional fill color for disputed-territory shapes. When NULL, the ordinary map fill is used.

`disputed_color` Optional outline color for disputed-territory shapes. When `NULL`, the ordinary map outline is used.

`disputed_linewidth` Optional line width for disputed-territory shapes.

`disputed_dots` Whether to draw dot markers on disputed-territory shapes.

`disputed_dot_fill` Fill color for disputed-territory dot markers.

`disputed_dot_color` Outline color for disputed-territory dot markers.

`disputed_dot_size` Size for disputed-territory dot markers.

`disputed_dot_stroke` Stroke width for disputed-territory dot markers.

`inset_boxes` Whether to draw boxes around transported Okinawa and Ogasawara insets.

`inset_box_color` Outline color for inset boxes.

`inset_box_linewidth` Line width for inset boxes.

`data_dir` Optional directory containing `jpmap_boundaries_YYYY.gpkg`.

`xlim`, `ylim` Optional longitude and latitude limits for the plot frame.

`x_breaks`, `y_breaks` Optional longitude and latitude axis breaks.

`x_labels`, `y_labels` Optional longitude and latitude axis labels.

`fill` Boundary fill color when `values` is not supplied.

`color` Boundary line color.

`linewidth` Boundary line width.

`...` Additional arguments passed to `ggplot2::geom_sf()`.

Value

A `ggplot2` plot.

Examples

```
if (nrow(available_jpmap_data()) > 0) {
  plot_jpmap("prefecture")
  plot_jpmap("prefecture", ogasawara = FALSE)
  plot_jpmap("prefecture", territorial_disputes = FALSE)
  plot_jpmap(
    "prefecture",
    ogasawara = FALSE,
    xlim = c(122, 149),
    ylim = c(28.5, 47),
    x_breaks = seq(125, 145, 5),
    y_breaks = seq(30, 45, 5)
```

```
  )
  plot_jpmap("prefecture", inset_boxes = FALSE)
  plot_jpmap("municipality", include = "Okinawa")
}
```

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