Package: picMaps (via r-universe)

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Type Package

Title Mapping Utilities for The Pacific Ocean

Version 0.1.9005

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Author Devin S. Johnson

Maintainer Devin S. Johnson <devin.johnson@noaa.gov>

Description This package provides objects and functions for making plots and maps easier to create in the Pacific Ocean.

Imports sf, utils, rmapshaper, magrittr, curl, terra, ncdf4

License CC0

Encoding UTF-8

LazyData true

RoxygenNote 7.3.1

Repository https://pifsc-protected-species-division.r-universe.dev

RemoteUrl https://github.com/PIFSC-Protected-Species-Division/picMaps

RemoteRef HEAD

RemoteSha 820b01a3ff9bf065b1a2e5553ce6335173737f77

Contents

picMaps-package *Functions To Aid Mapping of PIFSC Data*

Description

This package is a collection of functions that helps gather spatial data for creating maps in the Pacific Ocean.

Package:	picMaps
Version:	0.1.9003
Date:	March 7, 2024
License:	CC0
LazyLoad:	yes

Note

This software package is developed and maintained by scientists at the NOAA Fisheries Pacific Islands Fisheries Science Center and should be considered a fundamental research communication. The recommendations and conclusions presented here are those of the authors and this software should not be construed as official communication by NMFS, NOAA, or the U.S. Dept. of Commerce. In addition, reference to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA. While the best efforts have been made to insure the highest quality, tools such as this are under constant development and are subject to change.

Author(s)

Devin S. Johnson <devin.johnson@noaa.gov> (Maintainer)

etopo_download *Download ETOPO 2022 Bathymetery data*

Description

Downloads bathymetery data for map making.

Usage

```
etopo_download(resolution = 60, force = FALSE)
```

Arguments

resolution	numeric resolution in arcsecs (one of 30, or 60). Defaults to 60 arcsecs.
force	Logical. If data has previously been downloaded, it will force a new download and update of the OSM data.

Author(s)

Devin S. Johnson

References

https://osmdata.openstreetmap.de/data/land-polygons.html

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etopo_rast *Extract Bathymetry Data From Downloaded ETOPO 2022 data.*

Description

The majority of this function is taken from the `topotools` package here: https://github.com/BigelowLab/topotools/tree/main. It was modified to work within the 'picMaps' package.

Usage

```
etopo_rast(x, resolution = 60, proj = TRUE, ...)
```

Arguments

`x`	an `sf` spatial object that will define the extent of the bathymetry raster.
`resolution`	Resolution of the ETOPO bathymetry raster, either `60` or `30` arc-seconds. Defaults to `resolution = 60`.
`proj`	Logical. Should the resulting raster be projected to the same CRS as `x`? Defaults to `project = TRUE`.
`...`	Addtional arguments passed to `terra::project`.

References

- NOAA National Centers for Environmental Information. 2022: ETOPO 2022 15 Arc-Second Global Relief Model. NOAA National Centers for Environmental Information. DOI: 10.25921/fd45-gt74. Accessed 2023-03-17.
- https://github.com/BigelowLab/topotools/tree/main

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get_data_loc *Show picMaps Data Storage Directory*

Description

This function provides the location where 'picMaps' is storing and retrieving spatial data.

Usage

```
get_data_loc()
```

hawaii_coast *Coast polygons for Main Hawaiian Islands*

Description

Coast polygons for Main Hawaiian Islands

Usage

```
hawaii_coast(keep = 1, union = TRUE)
```

Arguments

keep	see osm_coast
union	see osm_coast

osm_coast *Get A Coastline* sf *Polygon Object For Plotting and Mapping*

Description

Uses downloaded OSM data for constructing an sf polygon coastline data object. Prior to using this function you must run osm_download.

Usage

```
osm_coast(x, keep = 0.2, union = FALSE)
```

Arguments

x	An sf spatial object. The coastline will be cropped to the bounding box.
keep	The amount of data retained after simplification with ms_simplify
union	Logical. Should the returned object be returned as a single sf MULTIPOLYGON object

Author(s)

Josh M. London and Devin S. Johnson

`osm_download` *Download Open Street Map Coastline Shapefile from Daylight Map Distribution*

Description

Downloads OSM data for plotting telemetry data and use distributions.

Usage

```
osm_download(force = FALSE, clean_shp = TRUE)
```

Arguments

`force`	Logical. If data has previously been downloaded, it will force a new download and update of the OSM data.
`clean_shp`	Logical. If 'TRUE' the original shape file will be deleted and only the '.gpkg' file will be retained.

Author(s)

Devin S. Johnson and Josh M. London

References

https://osmdata.openstreetmap.de/data/land-polygons.html

`osm_install` *Download Open Street Map Coastline Shapefile from Daylight Map Distribution*

Description

Downloads OSM data for plotting telemetry data and use distributions.

Usage

```
osm_install(zip_file, force = FALSE, clean_shp = TRUE)
```

Arguments

zip_file	path to the OSM data .zip file 'land-polygons-complete-4326.zip'. If left unspecified, the user will see a directory browser to navigate to it. See the url in the references to download it by hand. Also, see 'osm_download' to download and install it.
force	Logical. If data has previously been downloaded or installed, it will force a new install and update of the OSM data.
clean_shp	Logical. If 'TRUE' the original shape file will be deleted and only the '.gpkg' file will be retained.

Author(s)

Devin S. Johnson and Josh M. London

References

Get information here: https://osmdata.openstreetmap.de/data/land-polygons.html and download with this link https://osmdata.openstreetmap.de/download/land-polygons-complete-4326.zip

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set_data_storage *Set Data Storage Directory*

Description

The directory specified by path will be used to store downloaded spatial data. By storing the data in a separate directory from the installed package it will not need to be re-downloaded when the package is updated. You simply need to rerun this function to let the package functions know where the data is located.

Usage

```
set_data_storage(path = "~/.picmaps_data")
```

Arguments

path	A directory path specifying where spatial data will be stored for the package

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