Package: measoshapes (via r-universe)

November 5, 2026

Title Southern Ocean Shapes for 'MEASO' work.

Version 0.0.06

Description Provides Southern Ocean Shapes for 'MEASO' work, a Marine Ecosystem Assessment for the Southern Ocean.

License GPL-3

Depends R (>= 3.5), sf

Encoding UTF-8

LazyData true

URL https://australianantarcticdivision.github.io/measoshapes/package/, https://australianantarcticdivision.github.io/measoshapes/, https://github.com/AustralianAntarcticDivision/measoshapes

BugReports https://github.com/AustralianAntarcticDivision/measoshapes/issues

Roxygen list(markdown = TRUE)

Suggests knitr, rmarkdown, patchwork, dplyr

VignetteBuilder knitr

Config/roxygen2/version 8.1.0

Config/pak/sysreqs libabsl-dev cmake libgdal-dev gdal-bin libgeos-dev libssl-dev libproj-dev libsqlite3-dev libudunits2-dev

Repository https://australianantarcticdivision.r-universe.dev

Date/Publication 2026-10-28 02:37:27 UTC

RemoteUrl https://github.com/AustralianAntarcticDivision/measoshapes

RemoteRef HEAD

RemoteSha ff3822a0b66128c15bc066151ba09f5c71ac8ef6

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`measo_regions05` *Sectors and zones for MEASO.*

Description

Data is stored in 'sf' data frame form, in a native polar projection. Longitude,latitude version is copied with a '_ll' suffix. Versions with the Antarctic coastline baked-in are '_coastline' suffix.

Details

Longer names and decomposition of each region is in 'measo_names'.

Version 05 is kept as released; see measo_regions06 for the current version. Note that 'measo_names' is row-aligned with the 24 polygons and is not a key: WestPacific is split at the anti-meridian, so its names appear twice, and the two WPA rows have different fills (row 1 is a known error).

References

Constable, A.J., J. Melbourne-Thomas, M.M.C. Muelbert, S. McCormack, M. Brasier, J.A. Caccavo, R.D. Cavanagh, S.M. Grant, H.J. Griffiths, J. Gutt, S.F. Henley, J. Höfer, A.B. Hollowed, N.M. Johnston, S.A. Morley, E.J. Murphy, M.H. Pinkerton, I.R. Schloss, K.M. Swadling, A.P. Van de Putte (2023) Marine Ecosystem Assessment for the Southern Ocean: Summary for Policymakers. Integrated Climate and Ecosystem Dynamics in the Southern Ocean, Scientific Committee on Antarctic Research, Scientific Committee on Oceanic Research, Integrated Marine Biosphere Research. doi:10.5281/zenodo.8359585. See Figure 5, "MEASO assessment areas".

McCormack, S.A., J. Melbourne-Thomas, R. Trebilco, J.L. Blanchard, B. Raymond, A. Constable (2021) Decades of dietary data demonstrate regional food web structures in the Southern Ocean. Ecology and Evolution 11(1): 227–241. doi:10.1002/ece3.7017

Earlier MEASO documents, from the time of versions 03 to 05 of the regions:

Brasier, M.J., A. Constable, J. Melbourne-Thomas, R. Trebilco, H. Griffiths, A. Van de Putte, M. Sumner (2019) Observations and models to support the first Marine Ecosystem Assessment for the Southern Ocean (MEASO). Journal of Marine Systems 197: 103182. doi:10.1016/j.jmarsys.2019.05.008

Constable, A., J. Melbourne-Thomas, R. Trebilco, M. Brasier (2018) Marine Ecosystem Assessment for the Southern Ocean (MEASO). SC-CCAMLR 2018 Background Paper, SC-CAMLR-XXXVII/BG/22.

Constable, A., J. Melbourne-Thomas, R. Trebilco, M. Sumner, M. Brasier (2018) The role of models in facilitating the first Marine Ecosystem Assessment for the Southern Ocean (MEASO). Australian Coastal and Oceans Modelling and Observations meeting, Canberra, October 2018.

`measo_regions06` *MEASO regions, version 06*

Description

The MEASO assessment areas: five sectors (Atlantic, Central Indian, East Indian, West Pacific, East Pacific), each with three zones (Antarctic, Subantarctic, Northern), and a temperate (T) region north of each sector that is outside MEASO. One row per region (20 rows).

Details

The boundaries are those of version 05. In version 06 the anti-meridian split of WestPacific is dissolved (one feature per name), the regions carry their attributes, and `fill` is the colour of each region in the MEASO Summary for Policymakers (Figure 5).

- `measo_regions06` polar Lambert Azimuthal Equal Area (use this for areas)
- `measo_regions06_ll` longitude/latitude: boundaries are straight lines in longitude/latitude (along parallels and meridians), WestPacific is a MULTIPOLYGON either side of the anti-meridian
- `measo_regions06_coastline`, `measo_regions06_ll_coastline` with the Antarctic continent cut out
- `measo_names06` the attributes alone, a key by `name`

Columns:

- `name` code, sector then zone, e.g. "AOA"
- `label` full name, zone then sector, e.g. "Antarctic Atlantic"
- `sector` e.g. "CentralIndian"
- `zone` "Antarctic", "Subantarctic", "Northern", or `NA` for the temperate regions
- `fill` colour as "#RRGGBB", `NA` for the temperate regions

References

Constable, A.J., J. Melbourne-Thomas, M.M.C. Muelbert, S. McCormack, M. Brasier, J.A. Caccavo, R.D. Cavanagh, S.M. Grant, H.J. Griffiths, J. Gutt, S.F. Henley, J. Höfer, A.B. Hollowed, N.M. Johnston, S.A. Morley, E.J. Murphy, M.H. Pinkerton, I.R. Schloss, K.M. Swadling, A.P. Van de Putte (2023) Marine Ecosystem Assessment for the Southern Ocean: Summary for Policymakers. Integrated Climate and Ecosystem Dynamics in the Southern Ocean, Scientific Committee on Antarctic Research, Scientific Committee on Oceanic Research, Integrated Marine Biosphere Research. doi:10.5281/zenodo.8359585. See Figure 5, "MEASO assessment areas".

McCormack, S.A., J. Melbourne-Thomas, R. Trebilco, J.L. Blanchard, B. Raymond, A. Constable (2021) Decades of dietary data demonstrate regional food web structures in the Southern Ocean. Ecology and Evolution 11(1): 227–241. doi:10.1002/ece3.7017

Earlier MEASO documents, from the time of versions 03 to 05 of the regions:

Brasier, M.J., A. Constable, J. Melbourne-Thomas, R. Trebilco, H. Griffiths, A. Van de Putte, M. Sumner (2019) Observations and models to support the first Marine Ecosystem Assessment for the Southern Ocean (MEASO). Journal of Marine Systems 197: 103182. doi:10.1016/j.jmarsys.2019.05.008

Constable, A., J. Melbourne-Thomas, R. Trebilco, M. Brasier (2018) Marine Ecosystem Assessment for the Southern Ocean (MEASO). SC-CCAMLR 2018 Background Paper, SC-CAMLR-XXXVII/BG/22.

Constable, A., J. Melbourne-Thomas, R. Trebilco, M. Sumner, M. Brasier (2018) The role of models in facilitating the first Marine Ecosystem Assessment for the Southern Ocean (MEASO). Australian Coastal and Oceans Modelling and Observations meeting, Canberra, October 2018.

Examples

```
x <- measo_regions06_coastline
plot(sf::st_geometry(x), col = x$fill)
```

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