Package 'nswgeo'

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Title Geospatial Data and Maps for New South Wales, Australia

Version 0.6.0

Description Geospatial data for creating maps of New South Wales (NSW), Australia, and some helpers to work with common problems like normalising postcodes. Registers its data with 'cartographer'.

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Imports cartographer (>= 0.2), sf (>= 1.0)

Suggests dplyr (>= 1.0.0), ggplot2 (>= 4.0.0), httr2, nngeo, readr, stringr, testthat (>= 3.0.0)

URL https://github.com/cidm-ph/nswgeo, https://cidm-ph.github.io/nswgeo/

BugReports https://github.com/cidm-ph/nswgeo/issues

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Contents

`nswgeo-package` *Geospatial Tools for New South Wales*

Description

This package contains geospatial data for the NSW border and several types of features. It also contains some map plotting helpers to help you get from a data frame to a plot for common scenarios.

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See Also

Useful links:

- https://github.com/cidm-ph/nswgeo
- https://cidm-ph.github.io/nswgeo/
- Report bugs at https://github.com/cidm-ph/nswgeo/issues

australia *Geospatial data of the Australian state and territory administrative boundaries.*

Description

Excludes external territories.

Usage

```
australia

states
```

Format

An object of class `sfc_MULTIPOLYGON` (inherits from `sfc`) of length 1.

An object of class `sf` (inherits from `tbl_df`, `tbl`, `data.frame`) with 8 rows and 9 columns.

Details

The geometries have been simplified with a tolerance of 5 km to reduce the level of detail.

Functions

- `australia`: External boundaries of Australia as a multipolygon.
- `states`: State and internal territory boundaries of Australia.

Source

Australian Bureau of Statistics. "Australian Statistical Geography Standard (ASGS) Edition 3." ABS, Jul2021-Jun2026 (2025 update), https://www.abs.gov.au/statistics/standards/australian-statistical-g jul2021-jun2026, accessed 9 March 2026.

Examples

```
library(ggplot2)
ggplot(states) + geom_sf(aes(fill = STE_NAME21))
```

covid_cases_nsw *Small sample of COVID-19 cases in NSW for testing and demonstration.*

Description

This subset covers a random selection of entries from 3 LGAs, and ignores the case count field.

Usage

```
covid_cases_nsw
```

Format

A data frame with 100 rows and the following columns:

postcode The postal code

lhd The name of the Local Health District

lga The name of the Local Government Area

type A synthetic disease type/lineage/etc., either A or B

year Year of the case notification

Source

NSW Ministry of Health. "NSW COVID-19 cases by location." https://data.nsw.gov.au/data/dataset/covid-19-cases-by-location, accessed 11 October 2022.

Examples

```
head(covid_cases_nsw)
```

crs_gda2020 *Coordinate reference system for Australia*

Description

GDA2020 is the official CRS used by the Commonwealth and NSW. Geospatial data in this package uses GDA2020.

Usage

```
crs_gda2020()

crs_gda2020_cartesian()

crs_gda2020_albers()
```

Details

`crs_gda2020` is EPSG 7844 with axes specified in degrees.

`crs_gda2020_cartesian` is EPSG 7842 with Cartesian axes in metres.

`crs_gda2020_albers` is EPSG 9473, the Albers equal area projection used, making it suitable for area computation.

Value

A simple features CRS

---

lga_nsw *Geospatial data of the New South Wales administrative boundaries.*

Description

These include the Unincorporated Far West Region. `lga_nsw` excludes Jervis Bay Territory and the ACT. `poa_nsw` includes both territories and some postal areas extend past the state boundary.

Usage

```
lga_nsw

poa_nsw
```

Format

An object of class `sf` (inherits from `tbl_df`, `tbl`, `data.frame`) with 131 rows and 9 columns.

An object of class `sf` (inherits from `tbl_df`, `tbl`, `data.frame`) with 644 rows and 7 columns.

Details

The geometries have been simplified with a tolerance of 750 m to reduce the level of detail.

Functions

- `lga_nsw`: Local Government Area boundaries of New South Wales.
- `poa_nsw`: Postal area boundaries of New South Wales.

Source

Australian Bureau of Statistics. "Australian Statistical Geography Standard (ASGS) Edition 3." ABS, Jul2021-Jun2026 (2025 update), https://www.abs.gov.au/statistics/standards/australian-statistical-g jul2021-jun2026, accessed 9 March 2026.

See Also

poa_lhd_concordance

Examples

```
library(ggplot2)
ggplot(lga_nsw) + geom_sf(aes(fill = LGA_NAME_2024), show.legend = FALSE)

library(sf)
sf_use_s2(FALSE)

# cut out part of the postcode dataset (it's quite large)
bbox <- st_bbox(c(xmin = 142, xmax = 147, ymin = -33, ymax = -30)) |>
 st_as_sfc(crs = crs_gda2020())
st_crop(poa_nsw, bbox) |>
  ggplot() +
  geom_sf() +
  geom_sf_text(aes(label = POA_CODE_2021), size = 4)

# some postcodes extend past the state boundary
ggplot(nswgeo::poa_nsw) +
  geom_sf(aes(fill = as.integer(POA_NAME_2021)), colour = NA) +
  geom_sf(fill = NA, colour = "red", linewidth = .5, data = nswgeo::nsw) +
  scale_fill_viridis_b("Postal area", option = "H") +
  theme_void()
```

---

lhd *Local Health Districts of NSW.*

Description

The geometries have been simplified with a tolerance of 750 m to reduce the level of detail.

Usage

```
lhd
```

Format

An object of class `sf` (inherits from `tbl_df`, `tbl`, `data.frame`) with 15 rows and 5 columns.

Source

NSW Ministry of Health, "Map of local health districts", https://www.health.nsw.gov.au/lhd/Pages/lhd-maps.aspx.

See Also

poa_lhd_concordance

Examples

```
library(ggplot2)
ggplot(lhd) + geom_sf(aes(fill = lhd_name), show.legend = FALSE)
```

---

normalise_postcodes *Normalise postal codes*

Description

Some special postcodes are used in addresses, such as codes for post office boxes. This helper converts those to the postcode for the closest normal suburb if there is a reasonable clear match. If there is no good match, the postcodes are left unchanged.

Usage

```
normalise_postcodes(codes)
```

Arguments

codes	Character vector of postcodes (or coercible to one).

Details

Note that this goes a little further than the aliases that are registered with cartographer (which only account for postcodes with no geospatial data in the ABS dataset).

Value

Character vector of the same size as the input, but with the normalised postcodes.

Examples

```
normalise_postcodes(c(1685, 2000, 1010, 2129, 2145))
```

normalise_state_names *Normalise state names from abbreviations*

Description

Expand abbreviations like "NSW" to "New South Wales", and normalise to title capitalisation. Entries that don't match any state name or abbreviation are left untouched.

Usage

```
normalise_state_names(names)
```

Arguments

names	Character vector of state names.

Value

Vector of the same size as the input, but with the normalised state names.

Examples

```
normalise_state_names(c("nsw", "VIC", "overseas", "Queensland"))
```

nsw *Outlines of New South Wales and relevant territories.*

Description

Lord Howe Island is administratively part of NSW, but as it is a small island some 600 km off the coast, it is frequently omitted from maps of NSW.

Usage

```
nsw

act

lhi

jbt

sydney
```

Format

An object of class `sfc_MULTIPOLYGON` (inherits from `sfc`) of length 1.

An object of class `sfc_MULTIPOLYGON` (inherits from `sfc`) of length 1.

An object of class `sfc_MULTIPOLYGON` (inherits from `sfc`) of length 1.

An object of class `sfc_MULTIPOLYGON` (inherits from `sfc`) of length 1.

An object of class `sfc_POLYGON` (inherits from `sfc`) of length 1.

Details

The Australian Capital Territory is an enclave within NSW, and Jervis Bay Territory is a small Australian territory on the coast, surrounded by NSW. Neither are NSW territory, but they affect the shape of NSW's outline and are sometimes useful to include in maps alongside NSW due to their locations.

The geometry for `nsw` has been simplified with a tolerance of 750 m to reduce the level of detail, whereas the territories maintain their full resolution. `sydney` is simplified with a 500 m tolerance.

Functions

- `nsw`: External state boundary excluding LHI but including ACT and JBT.
- `act`: Australian Capital Territory boundary.
- `lhi`: Lord Howe Island boundary.
- `jbt`: Jervis Bay Territory boundary.
- `sydney`: Greater Sydney boundary.

Source

Australian Bureau of Statistics. "Australian Statistical Geography Standard (ASGS) Edition 3." ABS, Jul2021-Jun2026 (2025 update), https://www.abs.gov.au/statistics/standards/australian-statistical-g jul2021-jun2026, accessed 9 March 2026.

See Also

`outline()`

Examples

```
library(ggplot2)
ggplot() +
  geom_sf(fill = "black", data = nsw) +
  geom_sf(fill = "red", data = act) +
  geom_sf(fill = "blue", data = lhi) +
  geom_sf(fill = "green", data = jbt) +
  geom_sf(fill = "cyan", data = sydney)
```

outline *New South Wales outline with or without related territories*

Description

The default outline `nswgeo::nsw` includes Jervis Bay Territory, excludes Lord Howe Island, and does not have a cut out for the ACT. This utility allows each of these to be adjusted.

Usage

```
outline(lord_howe_island = FALSE, act_cutout = FALSE, jervis_bay = TRUE)
```

Arguments

`lord_howe_island`	Include Lord Howe Island.
`act_cutout`	Cut out the area of the Australian Capital Territory.
`jervis_bay`	Cover the area of the Jervis Bay Territory.

Value

A simple features data frame with the requested geometries.

See Also

nsw

Examples

```
library(ggplot2)

outline(lord_howe_island = TRUE) |> ggplot() + geom_sf()
```

phn *Primary Health Network boundaries of New South Wales*

Description

The geometries have been simplified with a tolerance of 500 m to reduce the level of detail.

Usage

```
phn
```

Format

An object of class `sf` (inherits from `tbl_df`, `tbl`, `data.frame`) with 10 rows and 9 columns.

Source

National Recovery and Resilience Agency, "PHN Boundaries used by the NBRA", https://data.gov.au/data/dataset/phn-boundaries-used-by-the-nbra, accessed 9 March 2026.

Examples

```
library(ggplot2)
ggplot(phn) + geom_sf(aes(fill = PHN_NAME), show.legend = FALSE)
```

---

poa_lhd_concordance *Concordance between postal areas and local health districts.*

Description

Contains the other administrative geometries which intersect with the local health district boundaries, along with the size of the intersection.

Usage

```
poa_lhd_concordance
```

Format

An object of class `data.frame` with 778 rows and 5 columns.

Details

For geographic regions used by the Australian Bureau of Statistics (ABS), the ABS publishes correspondence files. These files compare how two different types of regions align with each other. The Australian Government Department of Health and Aged Care published analogous concordance files for primary health networks (PHNs). These are useful for mapping between different types of administrative districts. There does not appear to be a publicly available set of concordance files for New South Wales local health district geographies.

The concordance was computed here by intersecting the ABS geometries with the local health district geometries. The fraction of the ABS geometry's area included in the intersection is reported in the column `FRAC_INCLUDED`. Any intersection with `FRAC_INCLUDED` at least 0.01% was retained. Area computations were performed in `crs_gda2020_albers()` (EPSG 9473 equal area Albers) coordinates at the original reolution of the source data.

Note that postal areas are not precisely the same as postcodes used by Australia Post, however they are very similar.

Source

Computed using the same source datasets as `lhd` and `poa_nsw`.

Examples

```
library(dplyr)

# postcodes that overlap with Murrumbidgee LHD
poa_lhd_concordance |>
  filter(lhd_name == "Murrumbidgee Local Health District", FRAC_INCLUDED > 0.005) |>
  arrange(desc(FRAC_INCLUDED)) |>
  pull(POA_NAME_2021)

# extract the main LHD for each postcode
poa_lhd_concordance |>
  arrange(desc(FRAC_INCLUDED)) |>
  slice_head(n = 1, by = POA_NAME_2021) |>
  mutate(postcode = POA_NAME_2021, lhd = lhd_name, .keep = "none") |>
  as_tibble()
```

---

postcodes *Postal codes and localities of New South Wales.*

Description

Derived from several government sources with some community curation. This version additionally attempts to canonicalise non-physical postcodes to assist with mapping.

Usage

```
postcodes
```

Format

A data frame with 7 columns:

postcode A postal code

locality A suburb or locality

state NSW

SA2_NAME_2021 Statistical Area 2 name to assist with disambiguating localities with identical names

special Flag indicating this is a post office box, mail distribution centre or other special postal code

old Flag indicating that this code appears to have been superseded

canonical The closest canonical postal code, e.g. mapping post office boxes to the main suburb's postal code

Source

Matthew Proctor. "Australian Postcodes", https://www.matthewproctor.com/australian_postcodes, accessed 5 March 2026.

The original dataset is released to the public domain.

Examples

```
set.seed(12345)
postcodes[sort(sample.int(nrow(postcodes), 5)),]
```

`suburbs` *Suburbs of New South Wales.*

Description

A dataset containing the names of suburbs in NSW and their postcodes. These fields are extracted as-is from the source dataset published by DCS Spatial Services, NSW Government.

Usage

```
suburbs
```

Format

A data frame with 2 columns:

suburbname The name of the suburb, in upper case

postcode The main postcode of the suburb, as a character

Source

Spatial Services, Department of Customer Service NSW. "NSW Administrative Boundaries Theme - Suburb." https://portal.spatial.nsw.gov.au/server/rest/services/NSW_Administrative_Boundaries_Theme_multiCRS/FeatureServer/2, accessed 5 March 2026.

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