Package: ecotourism (via r-universe)

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Type Package

Title Collection of Data on Wildlife Sightings, Tourism Counts, and Weather from Australia

Version 0.1.0

Description This is a collection of data files for exploring sightings of wild things, relative to weather and tourism patterns in Australia.

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`glowworms` *Glowworms Occurrence Data (2014–2024)*

Description

This dataset contains cleaned and enriched occurrence records for glowworms (*Arachnocampa tasmaniensis*) in Australia from 2014 to 2024. It includes spatial, temporal, taxonomic, and weather station metadata.

Usage

```
glowworms
```

Format

A tibble with 124 rows and 14 variables:

obs_lat Latitude of the observation (decimal degrees)

obs_lon Longitude of the observation (decimal degrees)

date Observation date (YYYY-MM-DD)

time Observation time (HH:MM:SS, character)

year Observation year

month Month of the observation

day Day of the month

hour Hour of the day (0–23)

weekday Day of the week (ordered factor)

dayofyear Day of the year (1–366)

sci_name Scientific name of the observed species

record_type Type of observation (e.g., HUMAN_OBSERVATION)

obs_state Australian state where the observation occurred

ws_id ID of the nearest weather station (e.g., "949610-99999")

Details

Data was sourced via the ‘galah‘ package from the Atlas of Living Australia, filtered and cleaned, then enriched by linking each record to the nearest weather station using geospatial methods.

Source

Atlas of Living Australia via **galah**

Examples

```
data(glowworms)
head(glowworms)
```

`gouldian_finch` *Gouldian Finch Occurrence Data (2014–2024)*

Description

This dataset contains cleaned and processed occurrence records for the Gouldian Finch (*Chloebia gouldiae*) in Australia between 2014 and 2024. It includes spatial coordinates, temporal details, species information, and the ID of the nearest weather station for each observation.

Usage

```
gouldian_finch
```

Format

A tibble with 3,921 rows and 14 variables:

obs_lat Latitude of the observation (decimal degrees)

obs_lon Longitude of the observation (decimal degrees)

date Date of the observation (YYYY-MM-DD)

time Time of the observation (HH:MM:SS)

year Year of the observation

month Month (1–12)

day Day of the month

hour Hour extracted from the time (0–23)

weekday Day of the week (as ordered factor)

dayofyear Day of the year (1–366)

sci_name Scientific name of the species

record_type Type of observation (e.g., HUMAN_OBSERVATION)

obs_state Australian state where the observation was recorded

ws_id Nearest weather station ID (e.g., "948280-99999")

Details

The data was retrieved from the Atlas of Living Australia using the **galah** package, then standardized, cleaned, and matched to the three closest weather stations using geospatial tools.

Source

Atlas of Living Australia via **galah**

See Also

glowworms, weather

Examples

```
data(gouldian_finch)
head(gouldian_finch)
```

---

manta_rays *Manta Ray Occurrence Data (2014–2024)*

Description

This dataset contains occurrence records for the reef manta ray (*Mobula alfredi*) observed in Australian waters from 2014 to 2024. The data includes spatial and temporal metadata, species identifiers, and linked weather station IDs.

Usage

```
manta_rays
```

Format

A tibble with 1,088 rows and 14 variables:

obs_lat Latitude of the observation (decimal degrees)

obs_lon Longitude of the observation (decimal degrees)

date Date of the observation (YYYY-MM-DD)

time Time of the observation (HH:MM:SS)

year Year of the observation

month Month (1–12)

day Day of the month

hour Hour extracted from the time (0–23)

weekday Day of the week (as ordered factor)

dayofyear Day of the year (1–366)

sci_name Scientific name — all observations are *Mobula alfredi*

record_type Type of observation (e.g., MACHINE_OBSERVATION)

obs_state Australian state where the observation occurred (may be missing)

ws_id Nearest weather station ID (e.g., "947800-99999")

Details

Records were accessed using the **galah** package and filtered specifically for *Mobula alfredi*. Data has been cleaned and enriched with spatial proximity to weather stations for climate-related analysis.

Source

Atlas of Living Australia via **galah**

See Also

gouldian_finch, weather

Examples

```
data(manta_rays)
head(manta_rays)
```

---

orchids *Orchid Occurrence Data (2014–2024)*

Description

This dataset contains over 300,000 occurrence records of orchid species (*Orchidaceae*) in Australia from 2014 to 2024. The data includes spatial, temporal, and taxonomic details, as well as associated weather station metadata for ecological analysis.

Usage

```
orchids
```

Format

A tibble with 302,123 rows and 14 variables:

obs_lat Latitude of the observation (decimal degrees)

obs_lon Longitude of the observation (decimal degrees)

date Date of the observation (YYYY-MM-DD)

time Time of the observation (HH:MM:SS)

year Year of the observation

month Month (1–12)

day Day of the month

hour Hour extracted from the time (0–23)

weekday Day of the week (as ordered factor)

dayofyear Day of the year (1–366)

sci_name Scientific name of the observed orchid species

record_type Type of observation (e.g., HUMAN_OBSERVATION, PRESERVED_SPECIMEN)

obs_state Australian state where the observation occurred (may be missing)

ws_id Nearest weather station ID linked to the observation

Details

The data was collected using the **galah** package from the Atlas of Living Australia, cleaned, and linked to nearby weather stations for ecological and climatic studies. The records span multiple orchid genera and include a range of observation types.

Source

Atlas of Living Australia via **galah**

See Also

`glowworms`, `gouldian_finch`, `weather`

Examples

```
data(orchids)
head(orchids)
```

oz_sa2 *Australian Statistical Area Level 2 Boundaries*

Description

Simplified 2021 Statistical Area Level 2 (SA2) polygon boundaries for the SA2 codes used in Tourism Research Australia exports. Representative interior-point coordinates are included for analyses that need one point per SA2.

Usage

```
oz_sa2
```

Format

An sf data frame with 2,350 rows and 4 variables: * **sa2_code_tra**: Integer SA2 identifier used by Tourism Research Australia. This field can be joined to tourism_reason, tourism_activity, and tourism_region. * **lat**: Latitude of a representative point located within the SA2, in decimal degrees. * **lon**: Longitude of a representative point located within the SA2, in decimal degrees. * **geometry**: Simplified SA2 polygon or multipolygon geometry in GDA2020 (EPSG:7844).

Details

Boundaries were obtained from the Australian Bureau of Statistics ASGS Edition 3 digital boundary files. Full-resolution polygons were matched to TRA codes by state and SA2 name. Representative points were calculated from the full-resolution geometry in Australian Albers (EPSG:3577), using a point guaranteed to lie on the SA2 surface. Polygon geometry was simplified with **rmapshaper**, retaining five percent of removable vertices while preserving shapes and shared boundaries.

Source

Australian Bureau of Statistics, ASGS Edition 3 digital boundary files.

References

Australian Bureau of Statistics. Australian Statistical Geography Standard (ASGS), Edition 3, July 2021–June 2026.

See Also

tourism_region, tourism_reason, tourism_activity

Examples

```
data(oz_sa2)
head(oz_sa2)
```

top_stations *Top Weather Stations for Each Organism*

Description

A lookup table identifying the top 3 most frequently linked weather stations for each focal organism in the ecotourism package. These stations were selected based on the number of linked observations across a 10-year period (2014–2024).

Usage

```
top_stations
```

Format

A tibble with 12 rows and 2 variables:

organism Name of the organism (e.g., "glowworms", "orchids")

ws_id Weather station ID (e.g., "948720-99999")

Details

This table was created by counting the frequency of ‘ws_id‘ assignments within each organism dataset and selecting the top 3 stations per organism. These top stations are used for downloading daily weather data via the **GSODR** package.

See Also

weather, weather_stations

Examples

```
data(top_stations)
head(top_stations)
```

tourism_activity *Monthly Tourism Trips by Stopover Activity*

Description

Estimated domestic overnight trips to Australian SA2 areas by month and stopover activity. The data contain only observations with non-zero trip estimates and non-zero survey sample sizes.

Usage

```
tourism_activity
```

Format

A tibble with 320,188 rows and 6 variables: * **year**: Calendar year, from 2014 to 2024. * **month**: Ordered factor giving the month returned from the trip. * **sa2_code_tra**: Integer SA2 code used by Tourism Research Australia. This can be joined to tourism_region. * **stop_activity**: Integer activity code that can be joined to tourism_activity_name. * **trips**: Estimated number of overnight trips, in thousands. * **n_sample**: Number of survey responses supporting the estimate.

Details

Records for which either `trips` or `n_sample` equals zero are excluded. Estimates with small sample sizes should be interpreted with appropriate caution.

References

Tourism Research Australia: https://www.tra.gov.au

See Also

tourism_activity_name, tourism_reason, tourism_region

Examples

```
data(tourism_activity)
head(tourism_activity)
```

---

tourism_activity_name *Tourism Stopover Activity Names*

Description

A lookup table matching the stopover activity codes in tourism_activity to descriptive names.

Usage

```
tourism_activity_name
```

Format

A tibble with 8 rows and 2 variables: * **stop_activity**: Integer stopover activity code. * **name**: Descriptive name of the stopover activity.

References

Tourism Research Australia: https://www.tra.gov.au

See Also

tourism_activity

Examples

```
data(tourism_activity_name)
tourism_activity_name
```

`tourism_reason` *Monthly Tourism Trips by Stopover Reason*

Description

Estimated domestic overnight trips to Australian SA2 areas by month and stopover reason. The data contain only observations with non-zero trip estimates and non-zero survey sample sizes.

Usage

```
tourism_reason
```

Format

A tibble with 196,044 rows and 6 variables: * **year**: Calendar year, from 2014 to 2024. * **month**: Ordered factor giving the month returned from the trip. * **sa2_code_tra**: Integer SA2 code used by Tourism Research Australia. This can be joined to `tourism_region`. * **stop_reason**: Integer reason code that can be joined to `tourism_reason_name`. * **trips**: Estimated number of overnight trips, in thousands. * **n_sample**: Number of survey responses supporting the estimate.

Details

Records for which either `trips` or `n_sample` equals zero are excluded. Estimates with small sample sizes should be interpreted with appropriate caution.

References

Tourism Research Australia: https://www.tra.gov.au

See Also

`tourism_reason_name`, `tourism_activity`, `tourism_region`

Examples

```
data(tourism_reason)
head(tourism_reason)
```

tourism_reason_name *Tourism Stopover Reason Names*

Description

A lookup table matching the stopover reason codes in tourism_reason to descriptive names.

Usage

```
tourism_reason_name
```

Format

A tibble with 7 rows and 2 variables: * **stop_reason**: Integer stopover reason code. * **name**: Descriptive name of the stopover reason.

References

Tourism Research Australia: https://www.tra.gov.au

See Also

tourism_reason

Examples

```
data(tourism_reason_name)
tourism_reason_name
```

tourism_region *Tourism Regions and Nearest Weather Stations*

Description

A dataset containing the locations of Australian tourism regions, their geographic coordinates, and the nearest Bureau of Meteorology weather station. Each region is assigned a unique identifier for linking to other tourism datasets.

Usage

```
tourism_region
```

Format

A tibble with 2,353 rows and 7 variables: * **state**: Australian state or territory abbreviation. * **region**: Name of the tourism region. Tourism regions are defined by Tourism Research Australia and generally formed through the aggregation of Statistical Area Level 2 (SA2) geographies. * **sa2**: Name of the SA2 area. * **lon**: Longitude of the SA2 representative point (WGS84). * **lat**: Latitude of the SA2 representative point (WGS84). * **ws_id**: Identifier of the nearest Bureau of Meteorology weather station to the SA2 area. * **sa2_code_tra**: Character SA2 code used by Tourism Research Australia. Join this field to the identically named field in the detailed tourism datasets after harmonising its type.

Details

Coordinates for each SA2 are intended to represent a central location within the area (e.g., polygon centroid). The nearest weather station is determined using great-circle distance calculations based on the Bureau of Meteorology's official station list.

References

Tourism Research Australia: https://www.tra.gov.au Australian Bureau of Meteorology.

Examples

```
data(tourism_region)
head(tourism_region)
```

---

weather *Daily Weather Data for Top Stations (2014–2024)*

Description

This dataset contains daily weather observations for the top weather stations associated with focal species in the ecotourism package. Data spans from 2014 to 2024 and includes temperature, humidity, precipitation, and wind measures.

Usage

```
weather
```

Format

A tibble with 35,527 rows and 18 variables:

ws_id Weather station ID (e.g., "948720-99999")

stn_lat Latitude of the weather station

stn_lon Longitude of the weather station

date Observation date (YYYY-MM-DD)

year Year of observation

month Month of observation (1–12)

day Day of the month

weekday Day of the week (as ordered factor)

dayofyear Day of the year (1–366)

temp Average temperature (°C)

min Minimum temperature (°C)

max Maximum temperature (°C)

dewp Dew point temperature (°C)

rh Relative humidity (%)

prcp Precipitation (mm)

rainy Binary flag indicating whether PRCP > 5 mm (1 = rainy day)

wind_speed Average wind speed (m/s)

max_speed Maximum sustained wind speed (m/s)

Details

The weather data was retrieved from the Global Surface Summary of the Day (GSOD) dataset via the **GSODR** package for the top 3 weather stations per organism in the ecotourism project. This data supports climate-biodiversity interaction analyses.

Source

GSOD via **GSODR**

See Also

`top_stations`, `glowworms`, `gouldian_finch`, `weather_stations`

Examples

```
data(weather)
head(weather)
```

---

weather_stations *Australian Weather Station Metadata*

Description

This dataset contains metadata for 732 weather stations across Australia, including coordinates, station names, and geocoded location details.

Usage

```
weather_stations
```

Format

A tibble with 732 rows and 7 variables:

ws_id Weather station ID (e.g., "941000-99999")

stname Station name (e.g., "KALUMBURU")

stn_lat Latitude of the station (decimal degrees)

stn_lon Longitude of the station (decimal degrees)

address Full geocoded address (from reverse geocoding)

stn_city Parsed city or locality name

stn_state Australian state or territory

Details

This data was derived from the GSOD inventory using the **GSODR** package, filtered for Australian stations, and geocoded using OpenStreetMap APIs. It is used to match ecological observations with relevant local weather conditions.

Source

GSOD inventory via **GSODR**; geocoded with OpenStreetMap

See Also

`weather`, `top_stations`, `gouldian_finch`

Examples

```
data(weather_stations)
head(weather_stations)
```

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