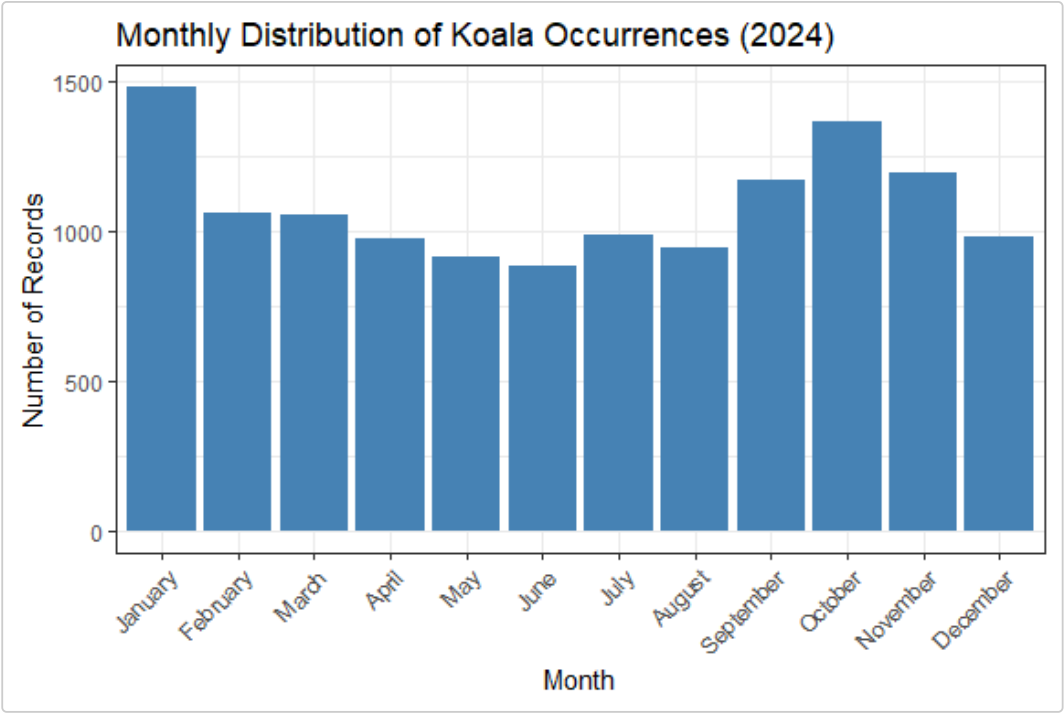# Koala

Koala

We are investigating occurrence data of the **[Koala](#)** in Australia from the **Atlas of Living Australia**, and make a map showing the spatial locations of sightings for 2024.
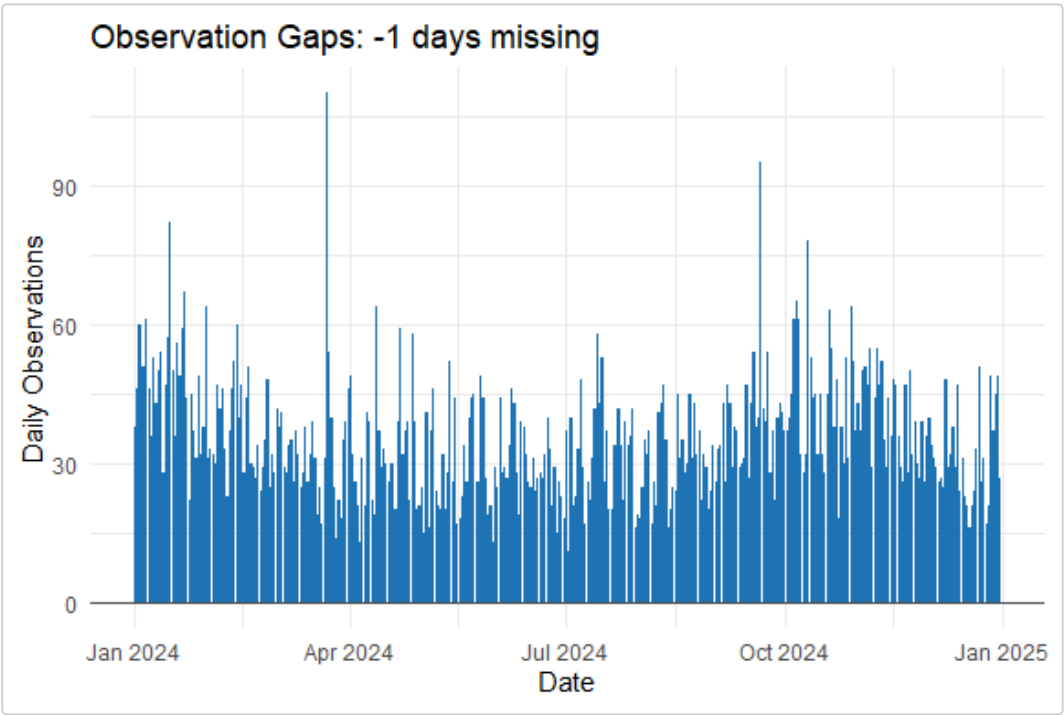
```
#> # A tibble: 6 × 5
#>     lat   lon  year eventDate           scientificName
#>   <dbl> <dbl> <dbl> <dttm>              <chr>
#> 1 -38.9  146.  2024 2024-05-12 12:33:36 Phascolarctos cinereus
#> 2 -38.9  143.  2024 2024-12-08 16:38:00 Phascolarctos cinereus
#> 3 -38.8  146.  2024 2024-11-01 09:34:00 Phascolarctos cinereus
#> 4 -38.8  144.  2024 2024-12-07 15:14:35 Phascolarctos cinereus
#> 5 -38.8  144.  2024 2024-12-02 11:16:44 Phascolarctos cinereus
#> 6 -38.8  144.  2024 2024-04-18 13:47:46 Phascolarctos cinereus
```

the length of the records is 13032

Monthly Distribution of organism (2024)

Monthly Distribution of Koala Occurrences (2024)

Data Regularity & Temporal Gaps

Observation Gaps: -1 days missing

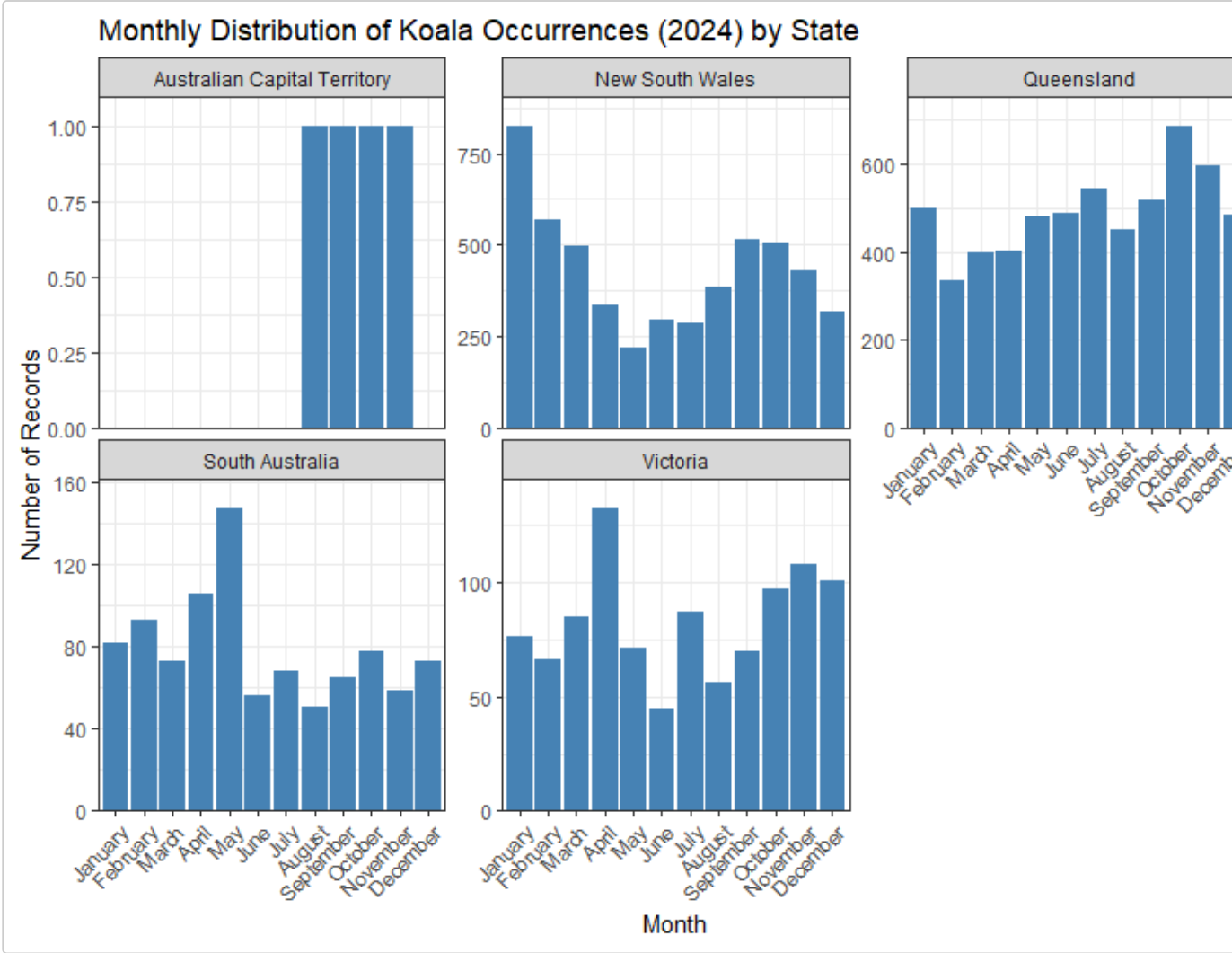## Nearest Weather Station Mapping

```
#> # A tibble: 3 × 12
#>   lat.x lon.x  year eventDate           scientificName weather_station_id stname
#>   <dbl> <dbl> <dbl> <dttm>              <chr>          <chr>              <chr>
#> 1 -38.9  146.  2024 2024-05-12 12:33:36 Phascolarctos… 949110-99999       YANAK…
#> 2 -38.9  143.  2024 2024-12-08 16:38:00 Phascolarctos… 948420-99999       CAPE …
#> 3 -38.8  146.  2024 2024-11-01 09:34:00 Phascolarctos… 949110-99999       YANAK…
```

```
#> # i 5 more variables: lat.y <dbl>, lon.y <dbl>, address <chr>, city <chr>,
#> #   state <chr>
```
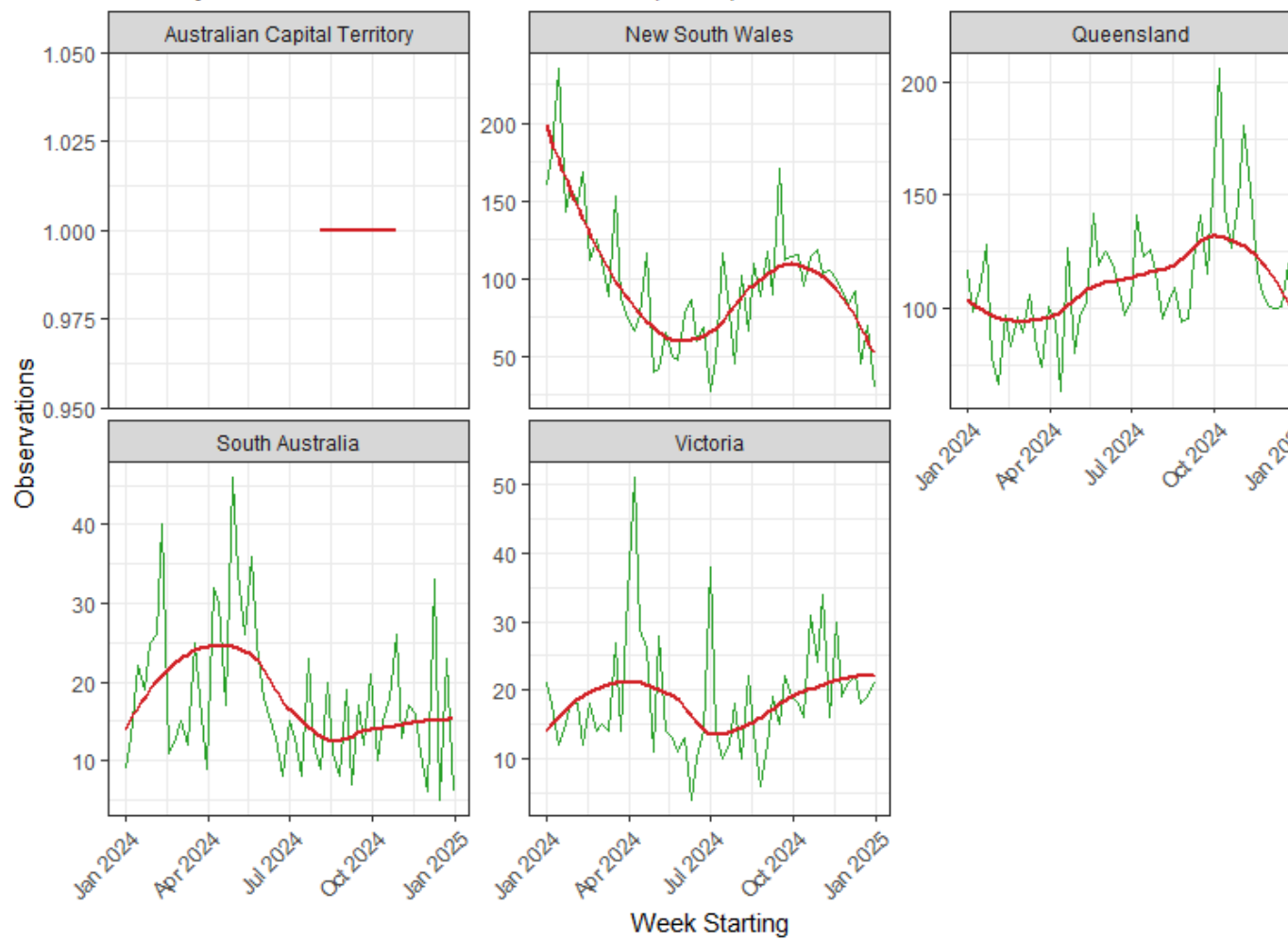
```
#>                            State Frequency
#> 1                     Queensland      5901
#> 2                New South Wales      5182
#> 3                       Victoria       994
#> 4                South Australia       951
#> 5 Australian Capital Territory         4
```
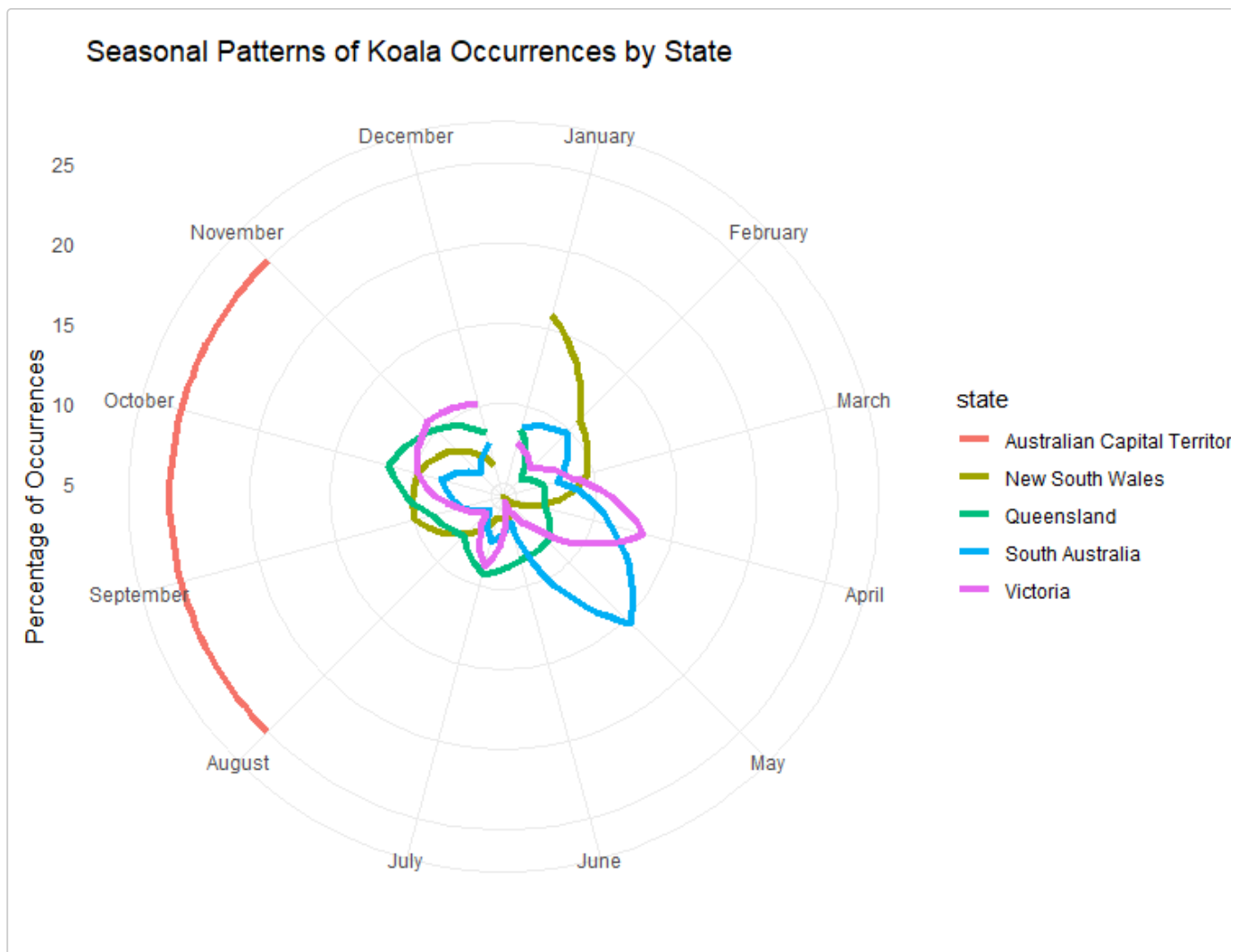
Pattern Analysis

Monthly Distribution of Koala Occurrences (2024) by State

Weekly Occurrence Patterns of Koalas (2024) with Trend Lines

Seasonal Patterns of Koala Occurrences by State

Datasets Overview

We have organized the koala occurrence and weather station data into the following structured datasets, stored in the `data/` directory:

- `koala_2024.rda`
  Contains koala occurrence records across all states in Australia.

- `koala_2024_ws.rda`
  An enhanced version of the occurrence data, merged with the nearest weather station information, including:

  ```
  --Station ID (weather_station_id)
  --Station name (stname)
  --Geographic details (lat.y, lon.y, address, city, state)
  ```

- `koala_top_weather.rda`
  Focuses on weather data from the top 3 most frequently recorded stations associated with koala occurrences.

- `weather_stations.rda`
  A standalone dataset of all unique weather stations in Australia, providing reference metadata for cross-referencing.