

Penguins



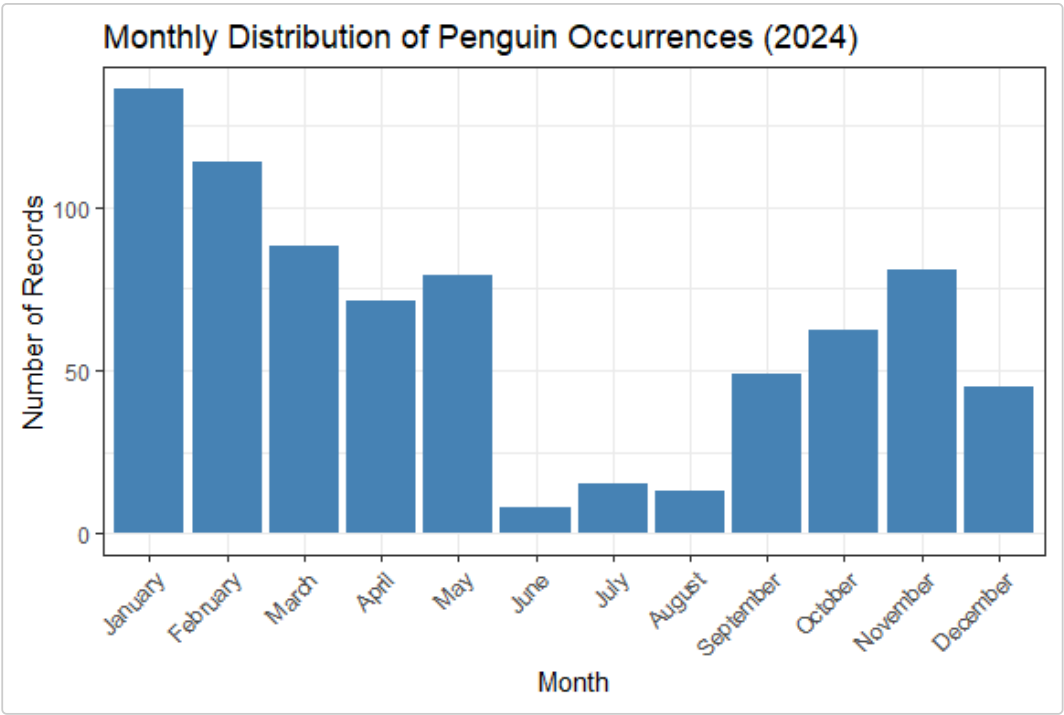
Penguins

We are investigating occurrence data of [Penguins](#) in Australia from the **Atlas of Living Australia**, and make a map showing the spatial locations of sightings for 2024.

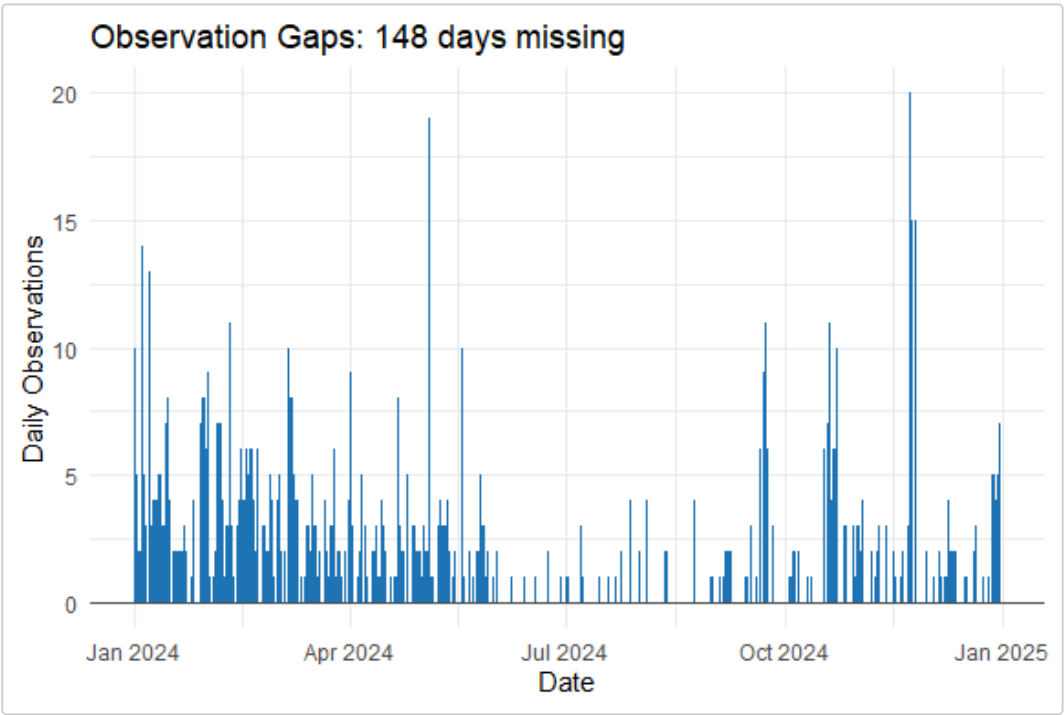
```
#> # A tibble: 6 × 5
#>   lat lon year eventDate      scientificName
#>   <dbl> <dbl> <dbl> <dtm>      <chr>
#> 1 -43.3 147. 2024 2024-02-06 16:24:00 Eudyptula minor
#> 2 -43.3 147. 2024 2024-02-04 19:20:00 Eudyptula minor
#> 3 -43.3 147. 2024 2024-02-05 09:40:00 Eudyptula minor
#> 4 -43.3 147. 2024 2024-02-17 20:39:00 Eudyptula minor
#> 5 -43.3 147. 2024 2024-02-12 21:56:00 Eudyptula minor
#> 6 -43.3 147. 2024 2024-02-17 20:39:00 Eudyptula minor
```

the length of the records is 761

Monthly Distribution of organism (2024)



Data Regularity & Temporal Gaps



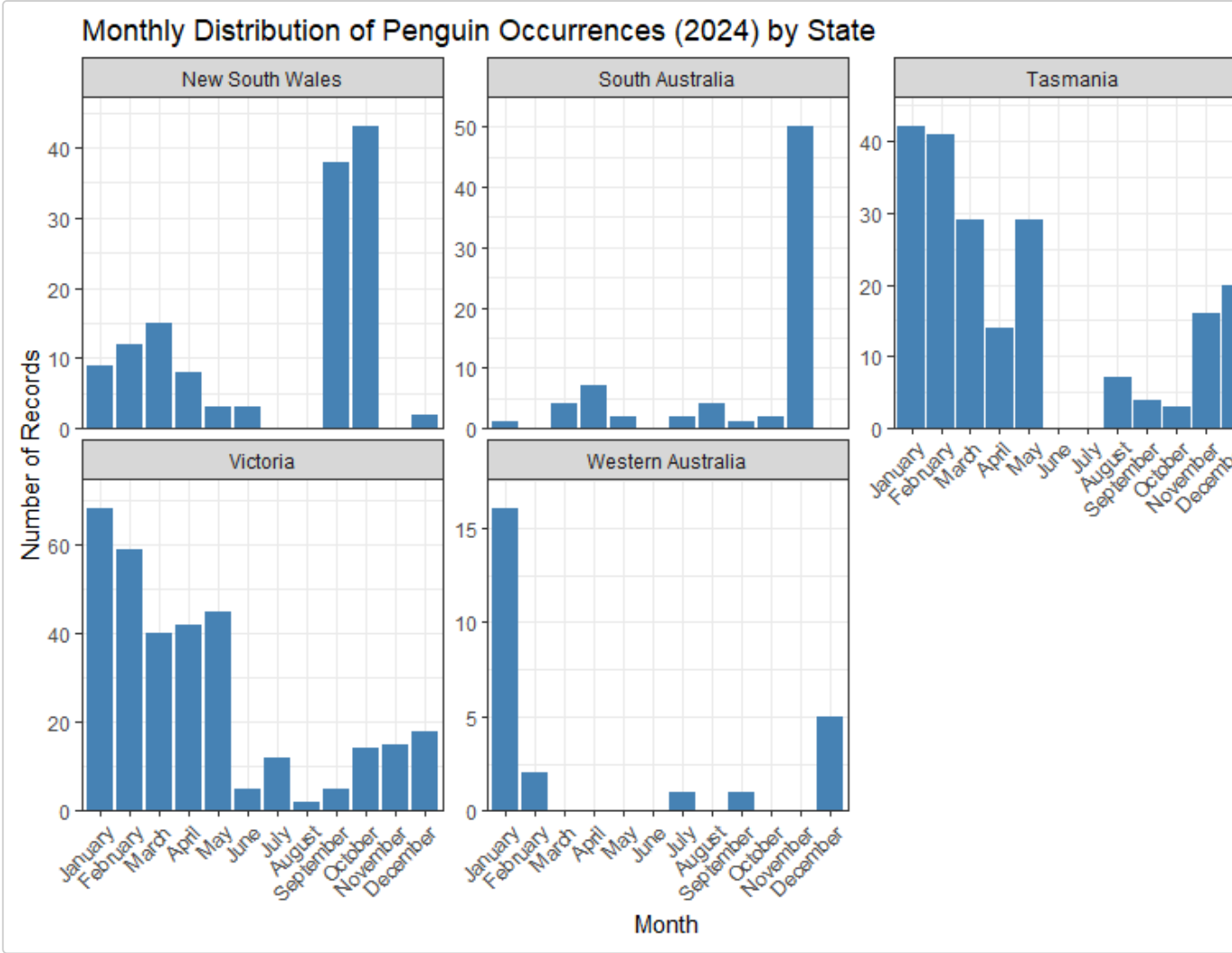
Nearest Weather Station Mapping

```
#> # A tibble: 3 × 12
#>   lat.x lon.x year eventDate      scientificName weather_station_id stname
#>   <dbl> <dbl> <dbl> <dtm>      <chr>          <chr>          <chr>
#> 1 -43.3  147.  2024 2024-02-06 16:24:00 Eudyptula min... 949880-99999 DENNE...
#> 2 -43.3  147.  2024 2024-02-04 19:20:00 Eudyptula min... 949880-99999 DENNE...
#> 3 -43.3  147.  2024 2024-02-05 09:40:00 Eudyptula min... 949880-99999 DENNE...
```

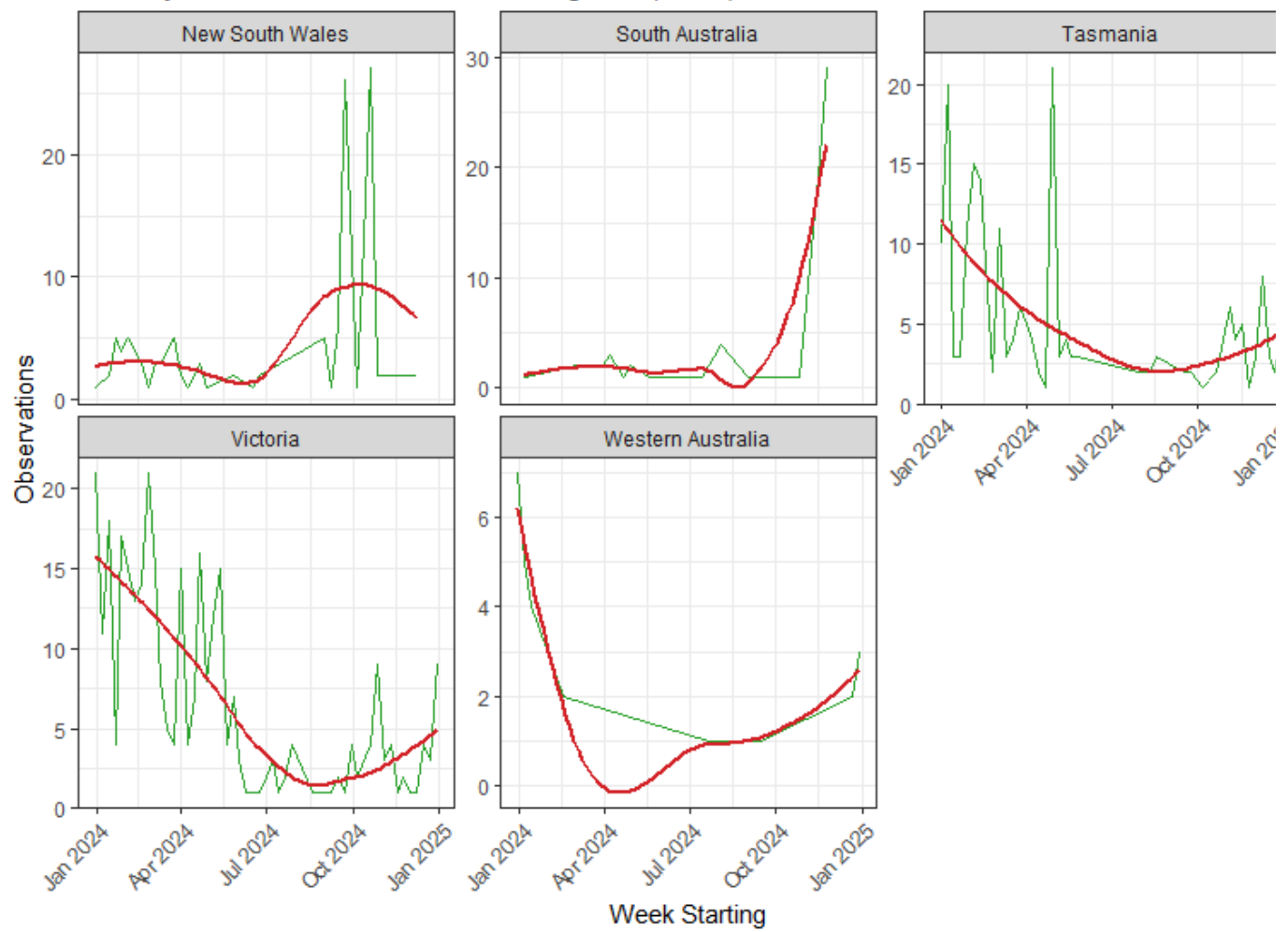
```
#> # i 5 more variables: lat.y <dbl>, lon.y <dbl>, address <chr>, city <chr>,  
#> #   state <chr>
```

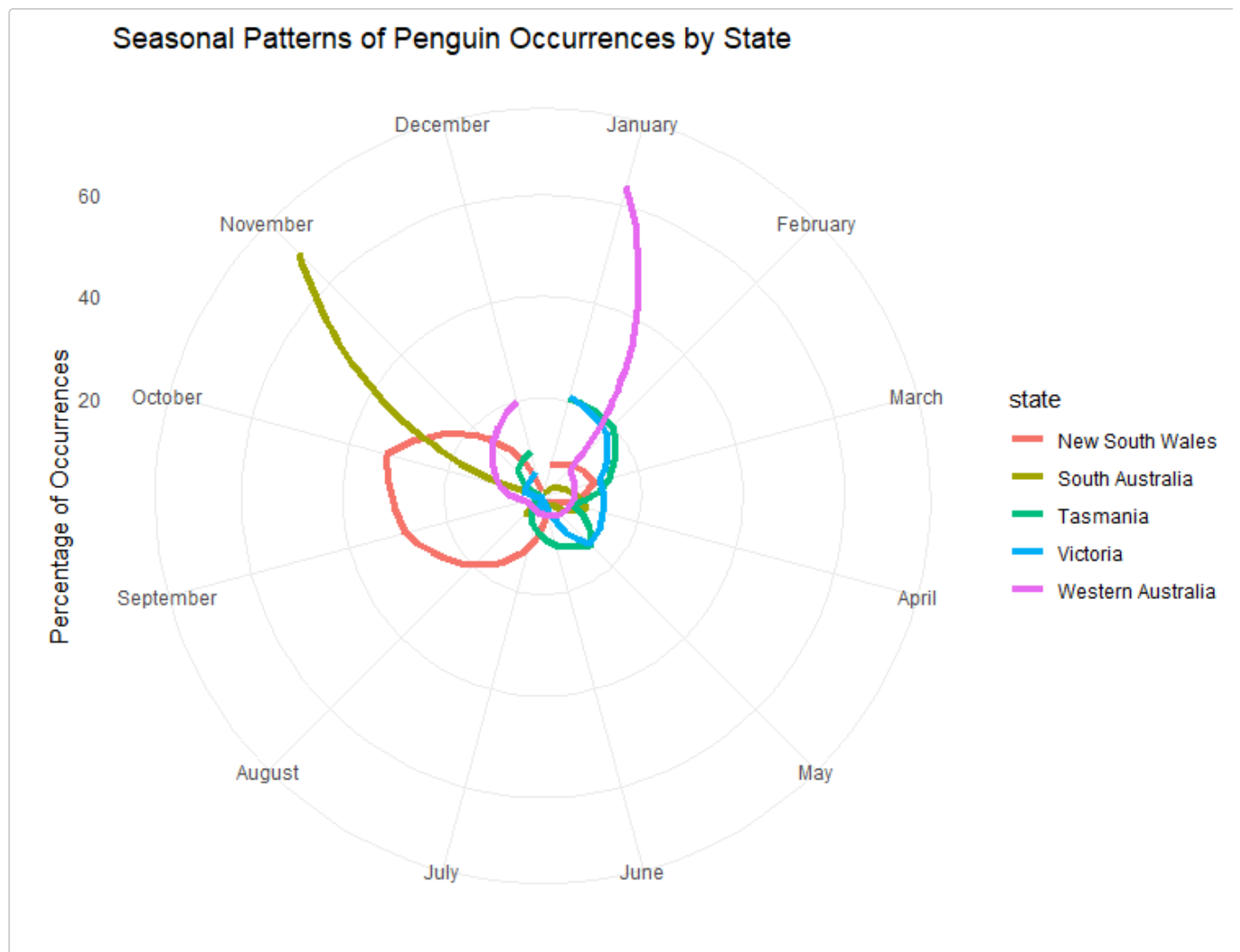
#>	State	Frequency
#> 1	Victoria	325
#> 2	Tasmania	205
#> 3	New South Wales	133
#> 4	South Australia	73
#> 5	Western Australia	25

Pattern Analysis



Weekly Occurrence Patterns of Penguins (2024) with Trend Lines





Datasets Overview

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

- `penguins_2024.rda`
Contains penguin occurrence records across all states in Australia.
- `penguins_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 (sname)
--Geographic details (lat.y, lon.y, address, city, state)
```
- `penguins_top_weather.rda`
Focuses on weather data from the top 3 most frequently recorded stations associated with penguin occurrences.
- `weather_stations.rda`
A standalone dataset of all unique weather stations in Australia, providing reference metadata for cross-referencing.