Platypus
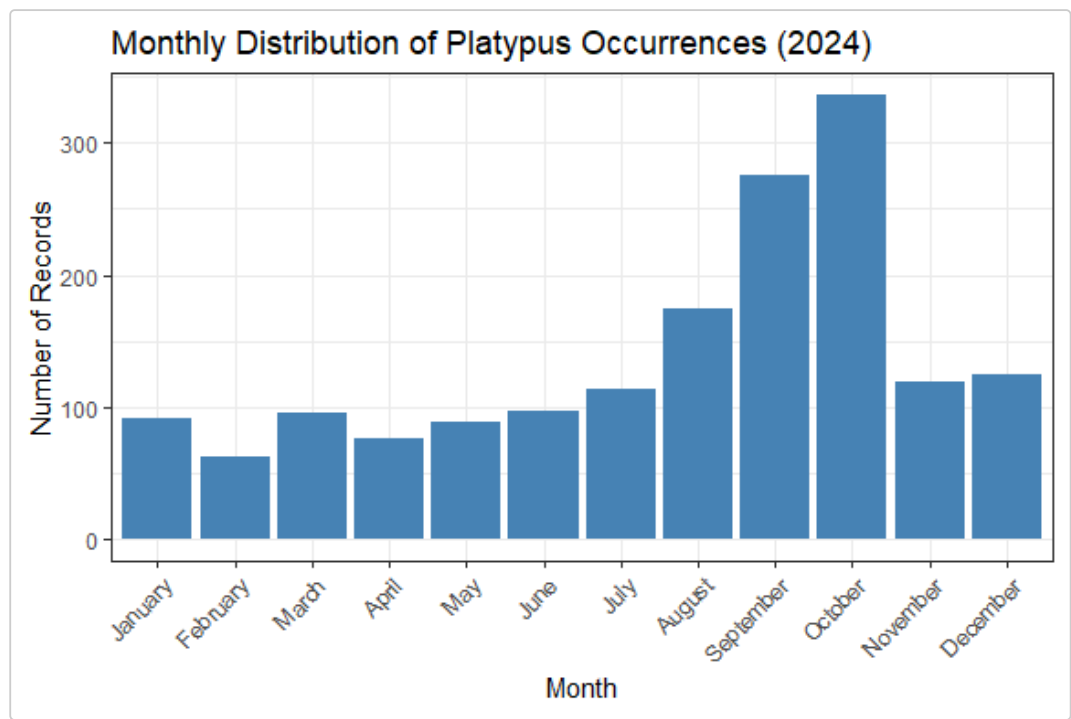

Platypus

We are investigating occurrence data of the **Platypus** 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 -43.4  147.  2024 2024-07-26 00:00:00 Ornithorhynchus anatinus
#> 2 -43.2  147.  2024 2024-10-15 00:00:00 Ornithorhynchus anatinus
#> 3 -43.2  147.  2024 2024-10-15 00:00:00 Ornithorhynchus anatinus
#> 4 -43.2  147.  2024 2024-12-31 00:00:00 Ornithorhynchus anatinus
#> 5 -43.2  147.  2024 2024-10-12 00:00:00 Ornithorhynchus anatinus
#> 6 -43.2  147.  2024 2024-01-08 21:02:13 Ornithorhynchus anatinus
```
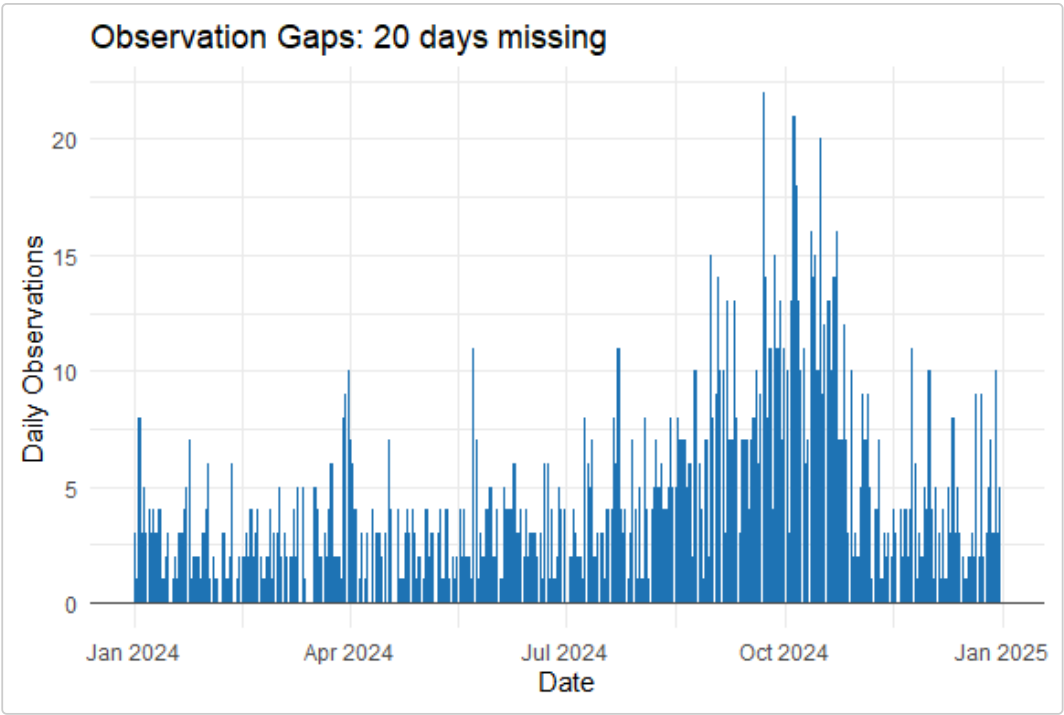
the length of the records is 1656

Monthly Distribution of organism (2024)

Data Regularity & Temporal Gaps

Observation Gaps: 20 days missing

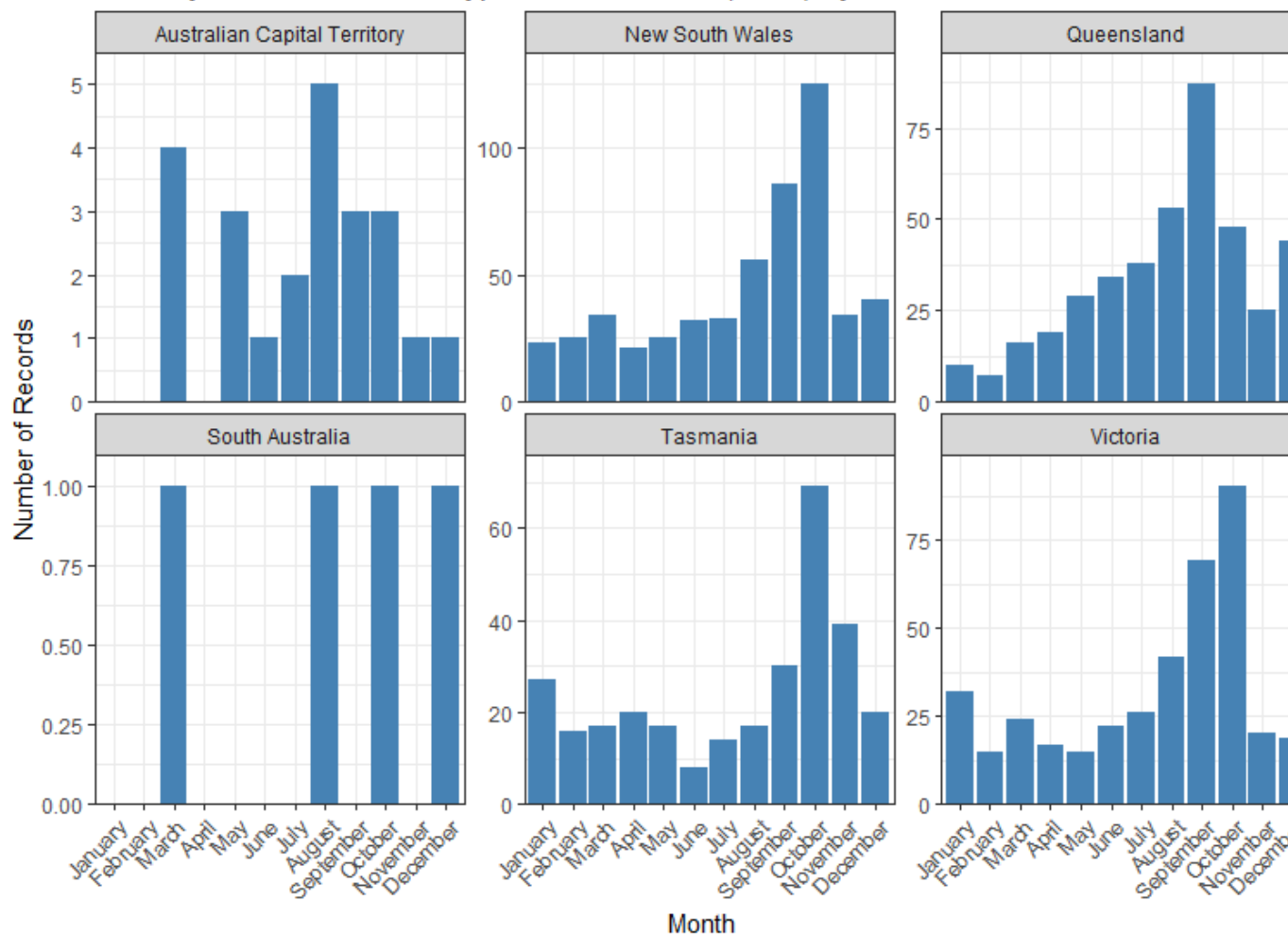## Nearest Weather Station Mapping

```
#> # A tibble: 3 × 12
#>   lat.x lon.x  year eventDate           scientificName weather_station_id stname
#>   <dbl> <dbl> <dbl> <dttm>              <chr>          <chr>              <chr>
#> 1 -43.4  147.  2024 2024-07-26 00:00:00 Ornithorhynch… 959670-99999       CAPE …
#> 2 -43.2  147.  2024 2024-10-15 00:00:00 Ornithorhynch… 949610-99999       DOVER
#> 3 -43.2  147.  2024 2024-10-15 00:00:00 Ornithorhynch… 949610-99999       DOVER
#> # ℹ 5 more variables: lat.y <dbl>, lon.y <dbl>, address <chr>, city <chr>,
#> #   state <chr>
```

```
#>                         State Frequency
#> 1             New South Wales       534
#> 2                  Queensland       410
#> 3                    Victoria       391
#> 4                    Tasmania       294
#> 5 Australian Capital Territory       23
#> 6             South Australia         4
```
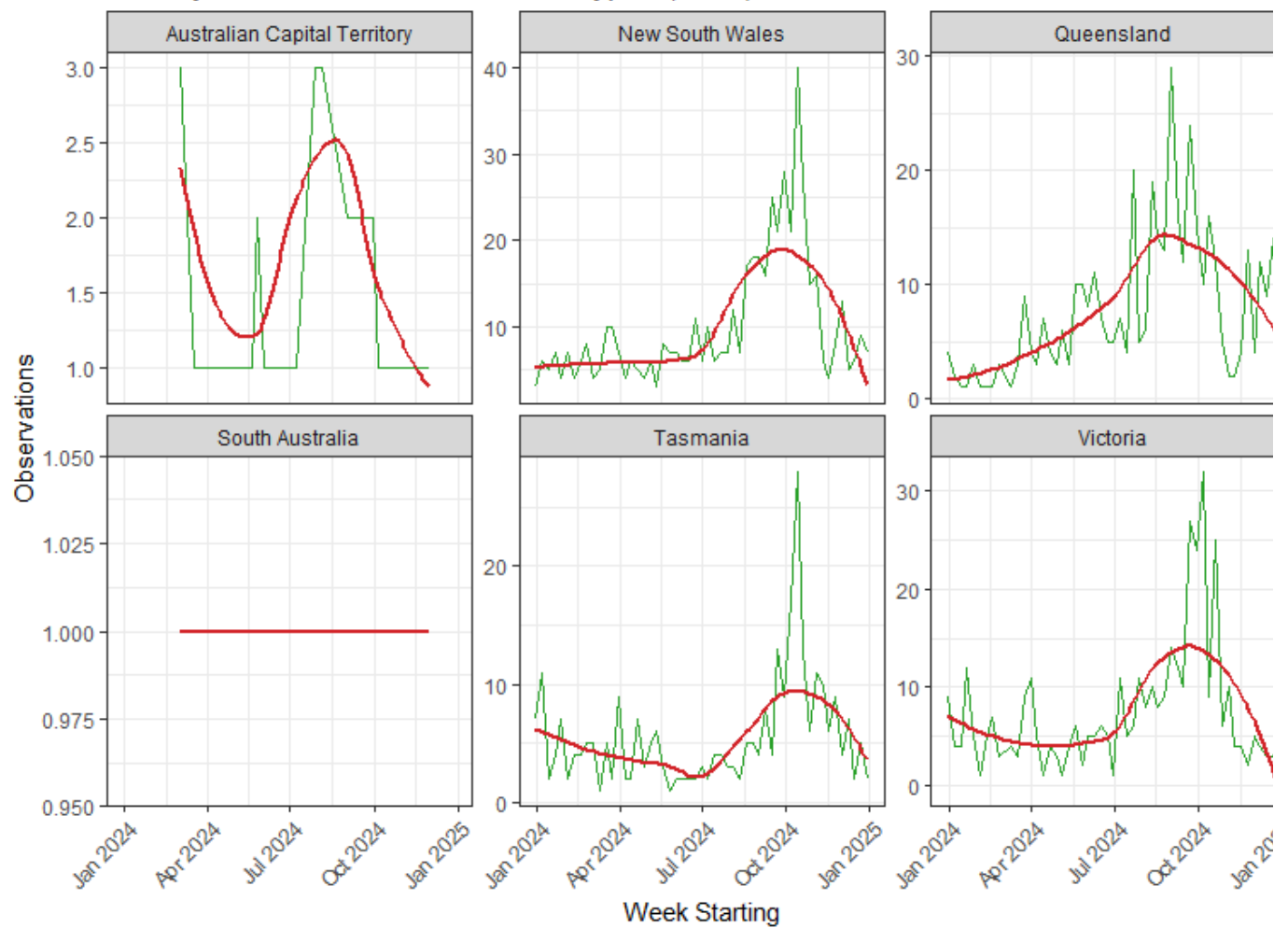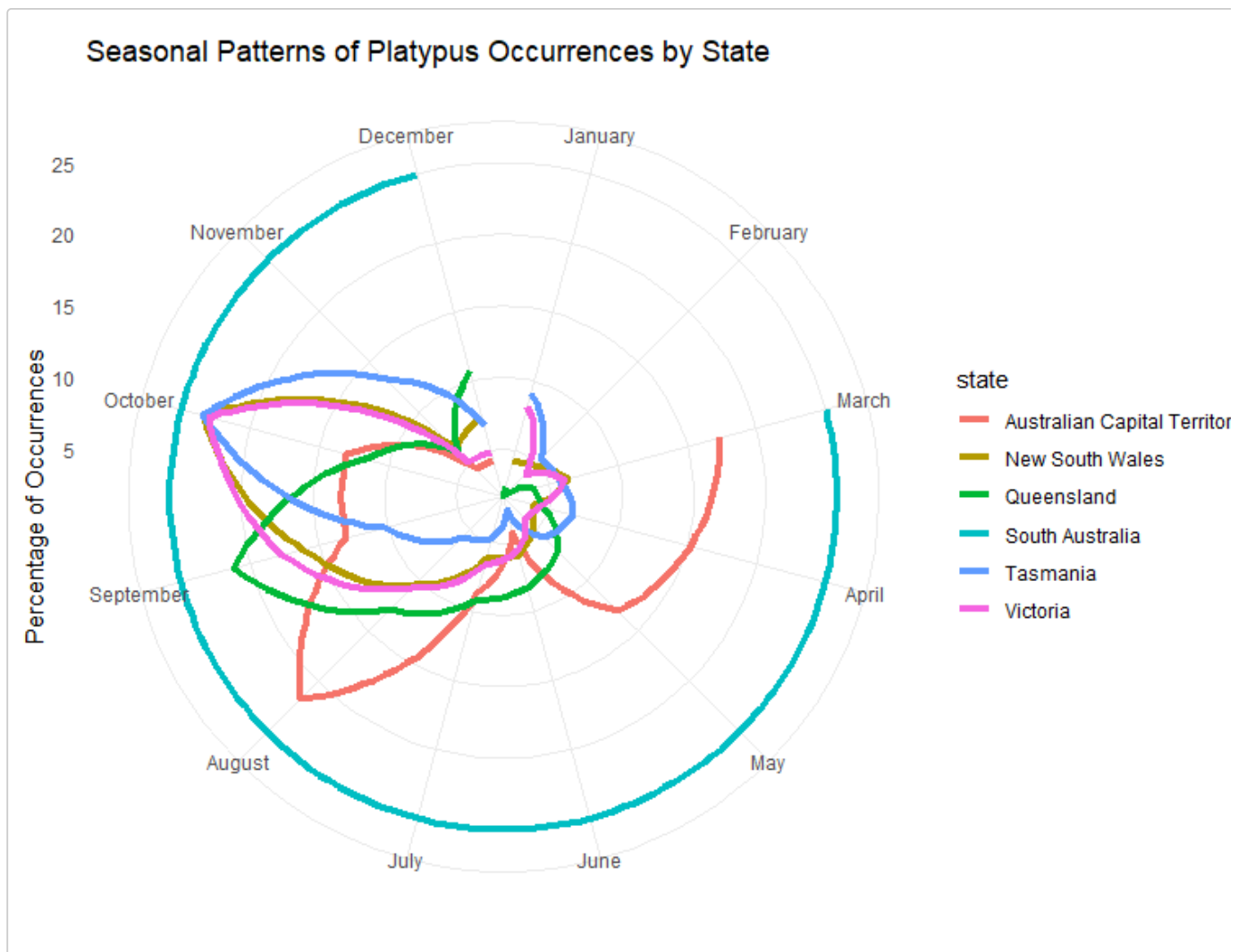
Pattern Analysis

Monthly Distribution of Platypus Occurrences (2024) by State

Weekly Occurrence Patterns of Platypus (2024) with Trend Lines

Seasonal Patterns of Platypus Occurrences by State

Datasets Overview

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

- `platypus_2024.rda`
  Contains platypus occurrence records across all states in Australia.

- `platypus_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)
  ```

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

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