

# Sea Turtles



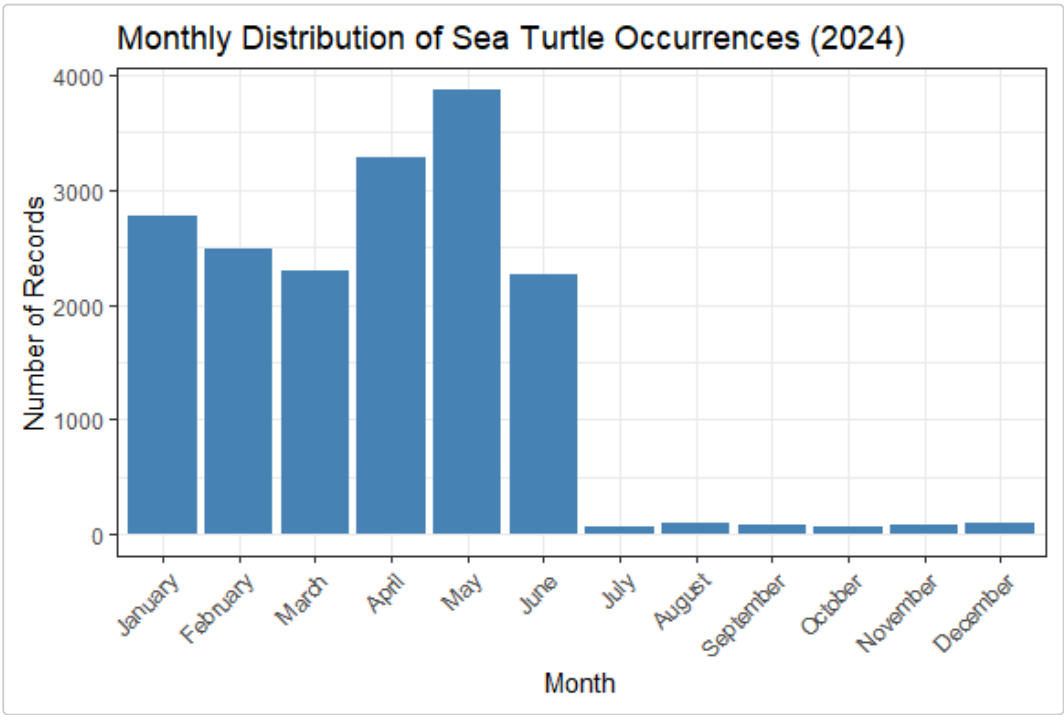
Sea Turtle

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

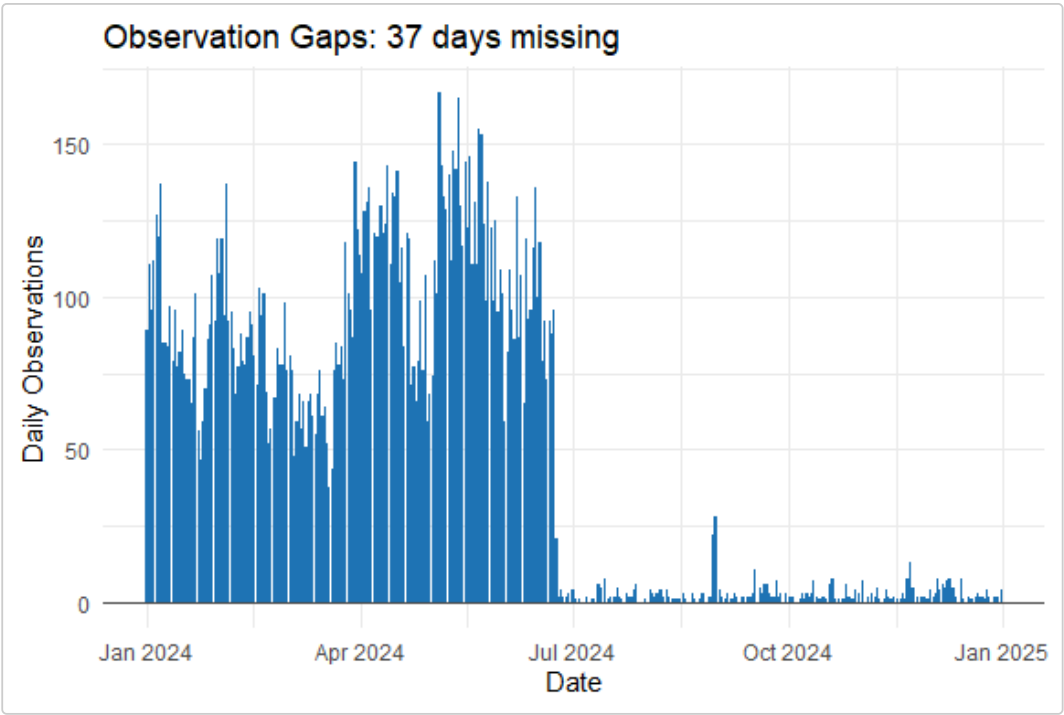
```
#> # A tibble: 6 × 5
#>   lat lon year eventDate      scientificName
#>   <dbl> <dbl> <dbl> <dtm>      <chr>
#> 1 -39.0 146. 2024 2024-07-22 13:25:04 CHELONIIDAE
#> 2 -38.9 146. 2024 2024-02-07 14:11:10 Chelonia mydas
#> 3 -38.9 146. 2024 2024-02-07 14:12:28 Chelonia mydas
#> 4 -38.8 146. 2024 2024-07-04 12:40:00 Chelonia mydas
#> 5 -38.4 144. 2024 2024-02-06 13:04:46 Eretmochelys imbricata
#> 6 -38.4 144. 2024 2024-02-06 17:16:17 Eretmochelys imbricata
```

the length of the records is 17450

## Monthly Distribution of organism (2024)



## Data Regularity & Temporal Gaps



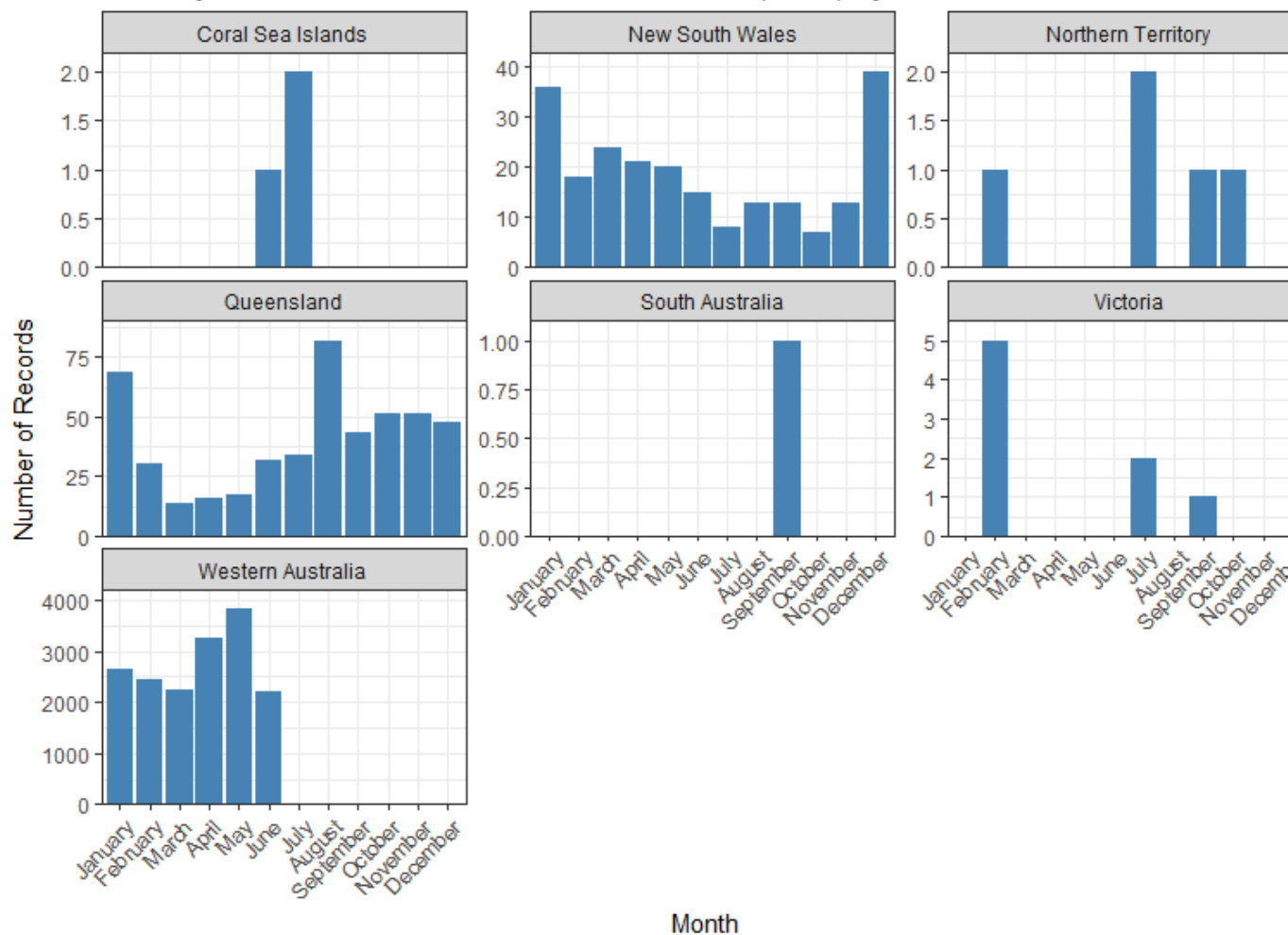
Nearest Weather Station Mapping

```
#> # A tibble: 3 × 12
#>   lat.x lon.x year eventDate      scientificName weather_station_id stname
#>   <dbl> <dbl> <dbl> <dtm>      <chr>          <chr>          <chr>
#> 1 -39.0  146.  2024 2024-07-22 13:25:04 CHELONIIDAE    948930-99999  WILSO...
#> 2 -38.9  146.  2024 2024-02-07 14:11:10 Chelonia mydas 948930-99999  WILSO...
#> 3 -38.9  146.  2024 2024-02-07 14:12:28 Chelonia mydas 948930-99999  WILSO...
#> # i 5 more variables: lat.y <dbl>, lon.y <dbl>, address <chr>, city <chr>,
#> #   state <chr>
```

```
#>           State Frequency
#> 1 Western Australia    16719
#> 2      Queensland      487
#> 3 New South Wales     227
#> 4      Victoria        8
#> 5 Northern Territory    5
#> 6 Coral Sea Islands     3
#> 7   South Australia     1
```

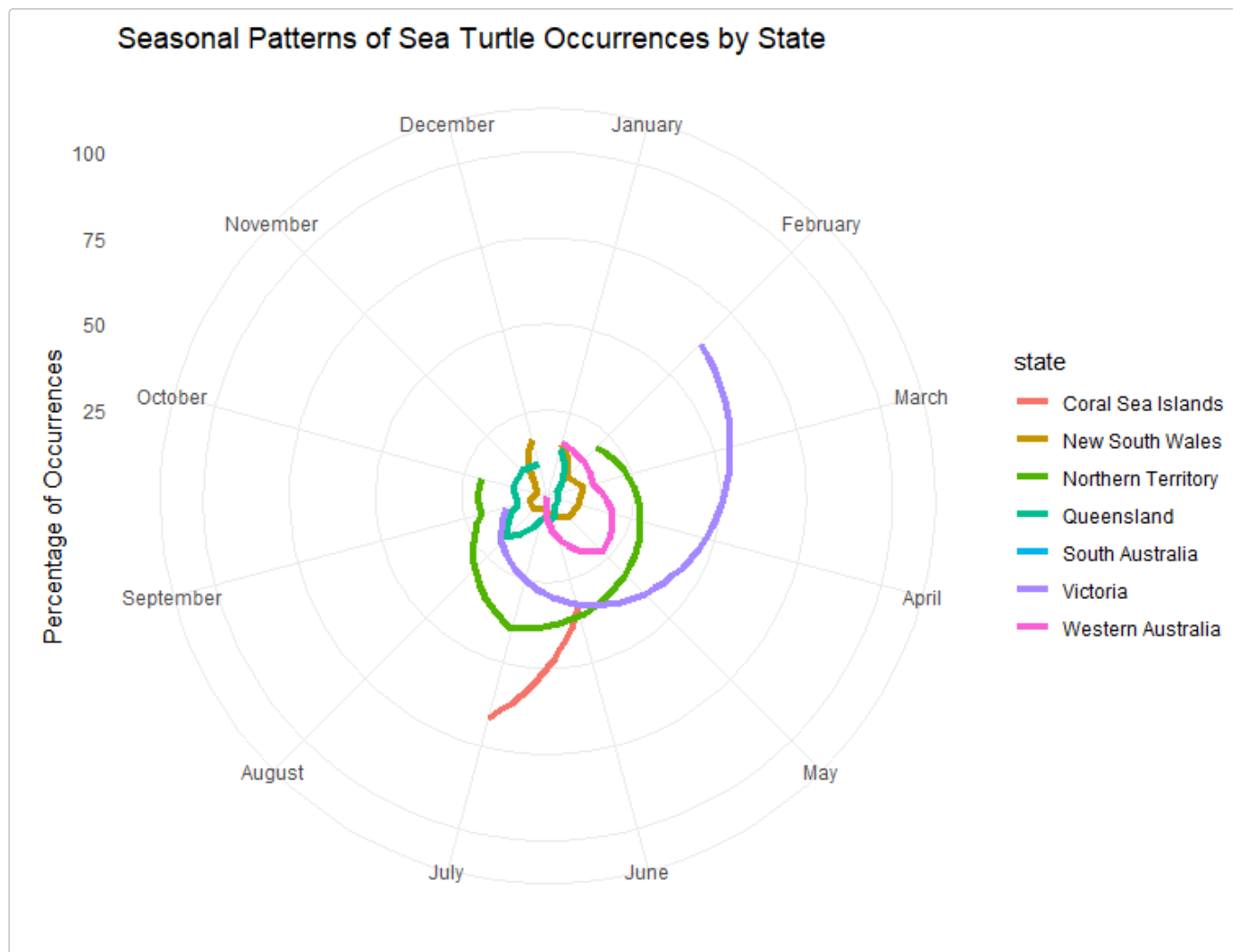
Pattern Analysis

### Monthly Distribution of Sea Turtle Occurrences (2024) by State



## Weekly Occurrence Patterns of Sea Turtles (2024) with Trend Lines





## Datasets Overview

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

- `sea_turtles_2024.rda`  
Contains sea turtle occurrence records across all states in Australia.
- `sea_turtles_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)
```
- `sea_turtles_top_weather.rda`  
Focuses on weather data from the top 3 most frequently recorded stations associated with sea turtle occurrences.
- `weather_stations.rda`  
A standalone dataset of all unique weather stations in Australia, providing reference metadata for cross-referencing.