# NESTING COMPARISON WITHIN 2020 TO 2025

| | NUMBER OF NESTS | | | | | |
|---|---|---|---|---|---|---|
| **MONTH** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** |
| **JAN** | **1** | **3** | **1** | **3** | **0** | **0** |
| **FEB** | **1** | **8** | **4** | **4** | **0** | **6** |
| **MAR** | **7** | **14** | **5** | **19** | **4** | **22** |
| **APR** | **7** | **19** | **7** | **35** | **10** | **19** |
| **MAY** | **13** | **21** | **10** | **44** | **14** | **14** |
| **JUN** | **9** | **9** | **12** | **19** | **11** | **6** |
| **JUL** | **7** | **3** | **5** | **11** | **1** | **4** |
| **AUG** | **3** | **5** | **7** | **2** | **2** | **0** |
| **SEP** | **6** | **3** | **7** | **0** | **2** | **0** |
| **OCT** | **4** | **2** | **2** | **0** | **0** | **0** |
| **NOV** | **1** | **0** | **2** | **0** | **0** | **0** |
| **DEC** | **3** | **0** | **4** | **1** | **1** | **0** |
| **TOTAL** | **62** | **87** | **66** | **138** | **45** | **71** |

*Table 3: The monthly nest count comparison throughout 2020 to 2025*

### 3.3 Nesting Data Overview (2020–2025)

Monthly sea turtle nesting data collected between 2020 and 2025 provide important insights into nesting patterns, seasonal trends and inter-annual variability along the Tiwi coastline. Over the six-year period, a total of **469** nests were recorded with annual nest counts ranging from **45** to **138** nests. These findings highlight the ecological importance of the area as a consistent nesting site for sea turtles.

Nesting activity demonstrated a distinct seasonal pattern with the highest concentrations occurring between **March** and **June** each year. During this period, nesting peaked consistently in **April** and **May** indicating optimal environmental conditions for nesting. In contrast, minimal nesting activity was recorded between October and January, marking this time-frame as the off-peak nesting season.

### 3.4 Interannual Nesting Trends

Annual nesting totals showed considerable variation across the study period. Nest numbers increased from 62 nests in 2020 to 87 nests in 2021 followed by a slight decline to 66 nests in 2022. A substantial increase was observed in 2023 when 138 nests were recorded, representing the highest nesting activity documented during the monitoring period. This increase may be attributed to favorable environmental conditions, improved patrol coverage or natural re-migration cycles of nesting females.

In 2024, nesting activity declined sharply to 45 nests, the lowest annual total recorded. However, this decline was followed by a recovery in 2025 with 71 nests documented, suggesting that the reduced nesting observed in 2024 was likely temporary rather than indicative of a long-term population decline.

### 3.5 Seasonal Distribution of Nests

Analysis of monthly nest distribution revealed that over 70% of all nests were laid between March and June. March marked the onset of increased nesting activity which intensified through April and May before gradually declining in June and July. This consistent seasonal distribution across years underscores the importance of focused monitoring and protection efforts during these peak months.

Nest counts recorded outside the core nesting season (August–February) remained low throughout all years, reinforcing the need for strategic allocation of conservation resources during periods of highest nesting activity.

### 3.6 Observations

Despite fluctuations in annual nest numbers, the timing of nesting remained consistent throughout the six-year period. This stability suggests strong nesting site fidelity and indicates that the Tiwi coastline continues to provide suitable habitat conditions for nesting sea turtles.

The exceptionally high nesting recorded in 2023 demonstrates the coastline's capacity to support elevated nesting densities under favorable conditions. Additionally, the partial recovery observed in 2025 following the low nesting year in 2024 highlights the resilience of the nesting population.

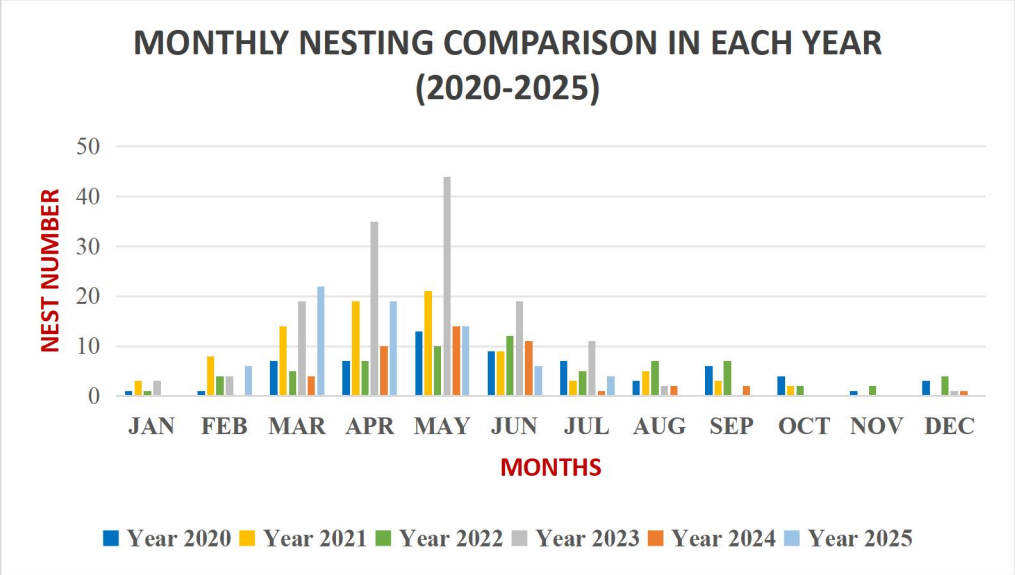
### 3.7 Key Findings

i. The Tiwi coastline functions as a seasonally stable and ecologically significant nesting habitat for sea turtles.

ii. Nesting activity is highly seasonal with peak nesting occurring between March and June.
iii. Inter-annual variability in nest numbers is evident but does not indicate a sustained decline in nesting activity.
iv. The nesting population shows resilience as demonstrated by recovery following periods of reduced nesting.

### 3.8 Conclusion

The nesting data from 2020 to 2025 confirm the continued importance of the Tiwi coastline for sea turtle reproduction. While annual nesting levels fluctuate, the consistent seasonal patterns and observed recovery following low nesting years indicate a viable and resilient nesting population. Continued long-term monitoring and targeted protection during peak nesting months are essential to sustain and enhance sea turtle conservation efforts along the Tiwi coastline.




*A graphical representation of the comparison of sea turtle nesting monthly nesting in each year (2020 – 2025).*

## 1. HATCHING SUCCESS ACROSS THE SEASON

During the 2025 nesting season, the Tiwi Turtle Police conducted systematic monitoring of sea turtle nesting activities along the Tiwi Beach coastline. The primary objective of this effort was to safeguard nests, enhance hatching success and support

the safe emergence and migration of hatchlings into the marine environment. This section presents a summary of nesting statistics, hatching performance and key management interventions undertaken during the season.

### 4.1. Nesting Overview

- Total Nests Recorded: 71
- Total Eggs Laid: 6788
- Total eggs hatched: 5152

### 4.2. Success Rates

The overall hatching success rate for the 2025 season was calculated at 75.59%, indicating a relatively high reproductive output despite localized threats. However, 10 nests experienced complete hatching failure, primarily due to dog disturbance within the Hill Park beach section. These incidents underscore the continued vulnerability of turtle nests in areas with high human and domestic animal activity.

### 4.3 Conservation Interventions and Management Actions

To reduce nest mortality associated with predation and disturbance, the Tiwi Turtle Police relocates nests from high-risk, dog-infested zones to more secure beach sections. This proactive intervention significantly increased the likelihood of successful incubation and hatchling emergence.

In response to the dog-related nest destruction incidents, the matter was formally reported to Hill Park management. Following these engagements, management committed to strengthening control measures by preventing dogs from accessing nesting areas and sensitizing beach users on responsible behavior during the turtle nesting season. These collaborative efforts are expected to reduce future nest losses and improve overall nesting success.