# Bird Species Observation Analysis - Insights Report

This report summarizes the exploratory data analysis of bird observations collected across forest and grassland habitats. Visualizations highlight species diversity, temporal patterns, environmental conditions, observer contributions, and detection characteristics.

Data Summary

Total records: 15372
Unique species (common names): 126
Location types: Forest, Grassland

Top 10 Most Observed Species

Shows the ten species with the highest number of observations. Useful to identify common species and potential sampling bias toward abundant species.
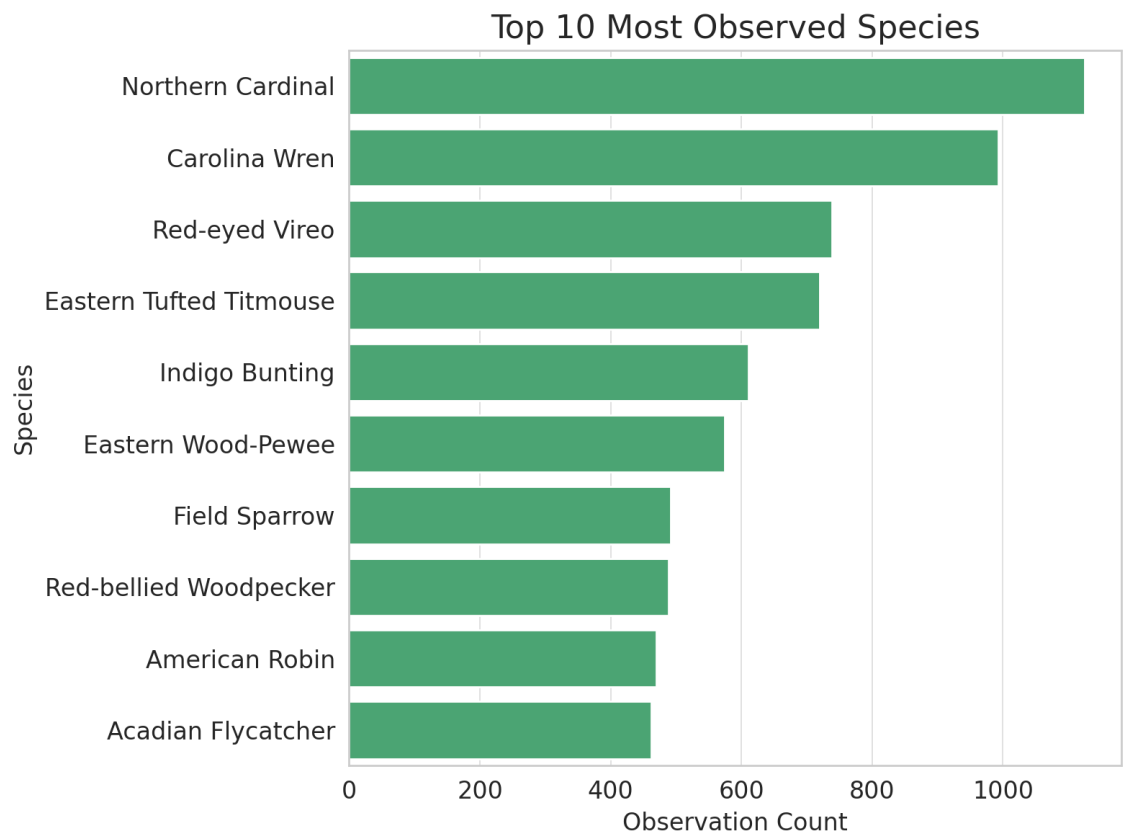
Species Richness by Habitat

Compares the count of unique species recorded in Forest and Grassland habitats, indicating relative biodiversity between habitat types.

Unique Species by Habitat

(Bar chart showing Unique Species Count by Habitat: Forest ≈ 108, Grassland ≈ 107)
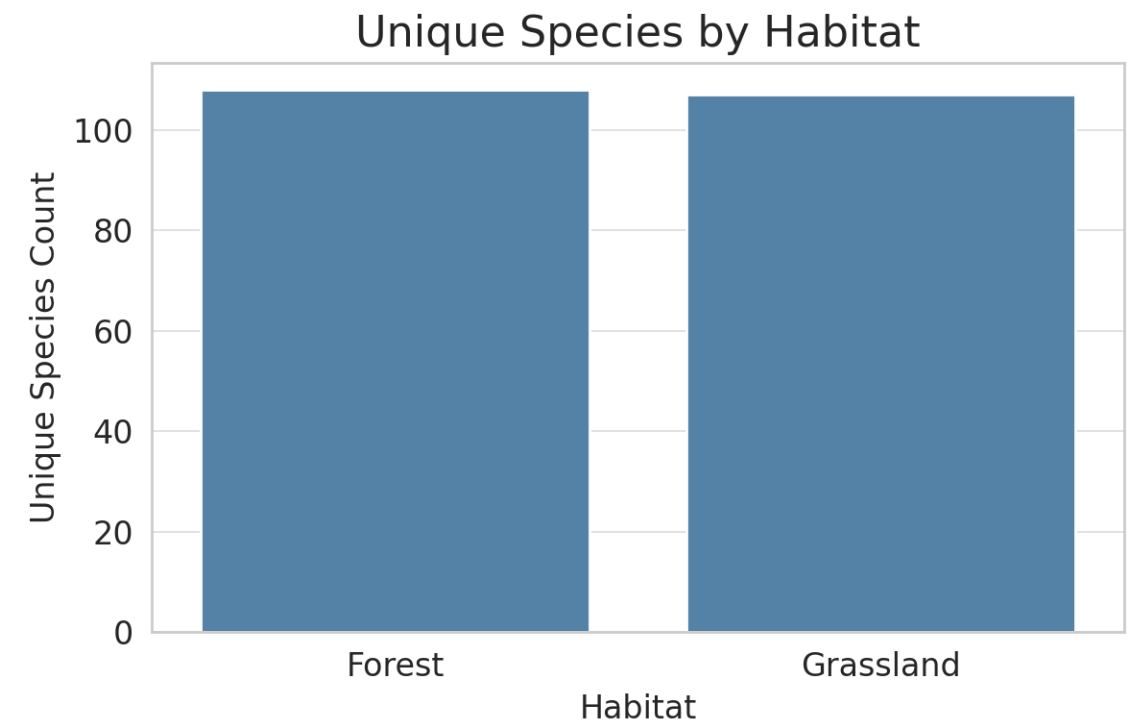
Observations by Month

Displays monthly observation counts to identify seasonal peaks and potential migration periods.

Observations by Month

(Bar chart showing Observation Count by Month: Month 5 ≈ 4850, Month 6 ≈ 6150, Month 7 ≈ 4270)
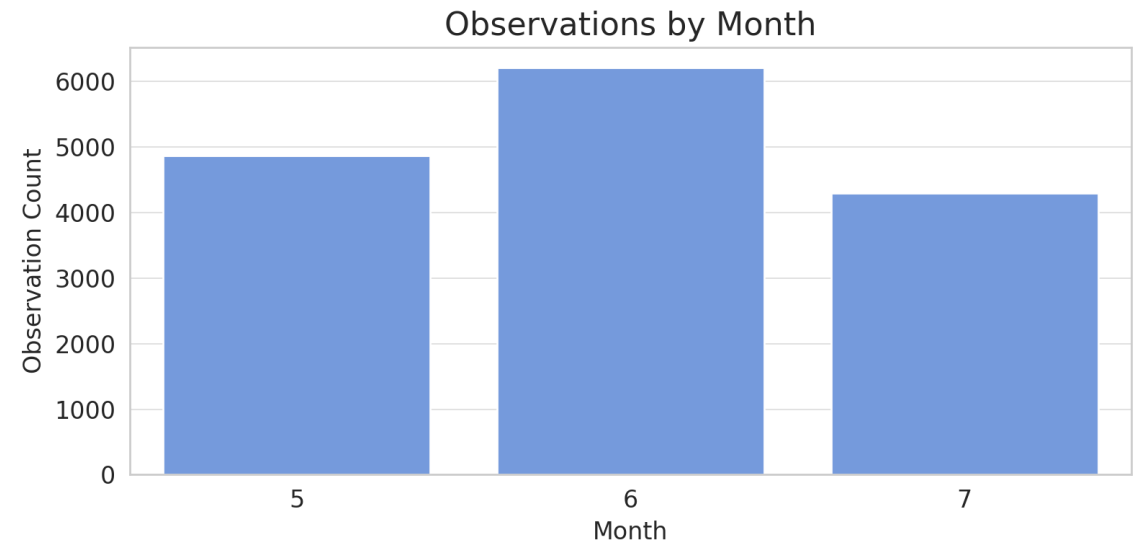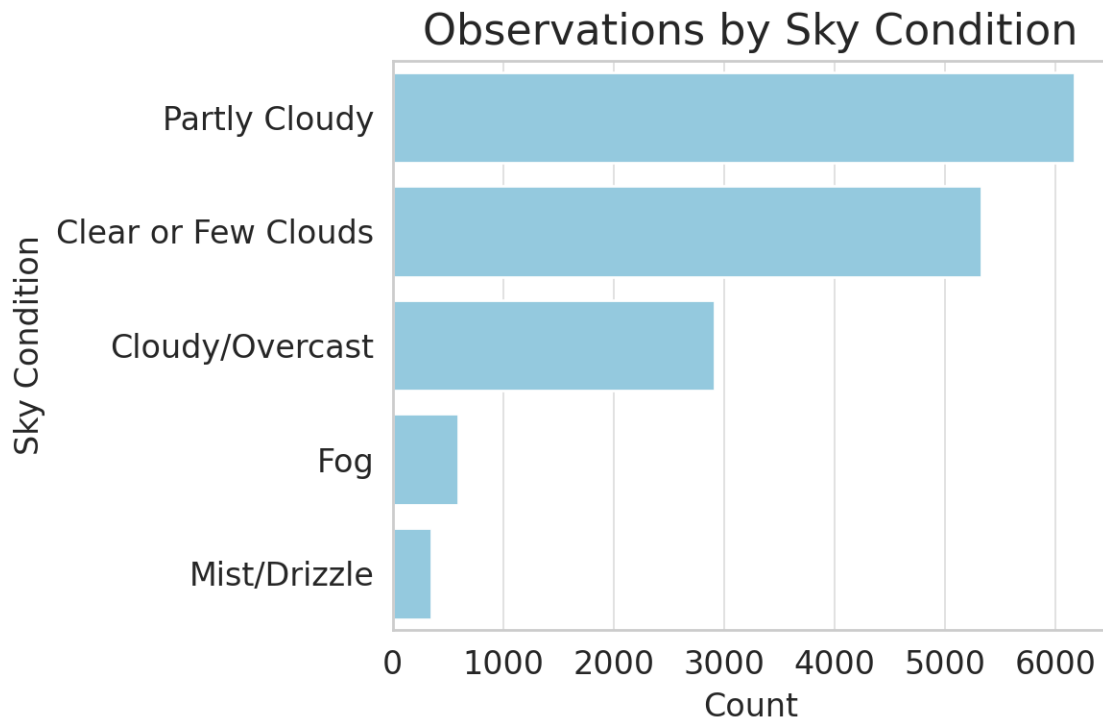
Temperature & Humidity Distributions

Shows the distribution of temperature and humidity during observation sessions to understand the environmental conditions under which observations were made.
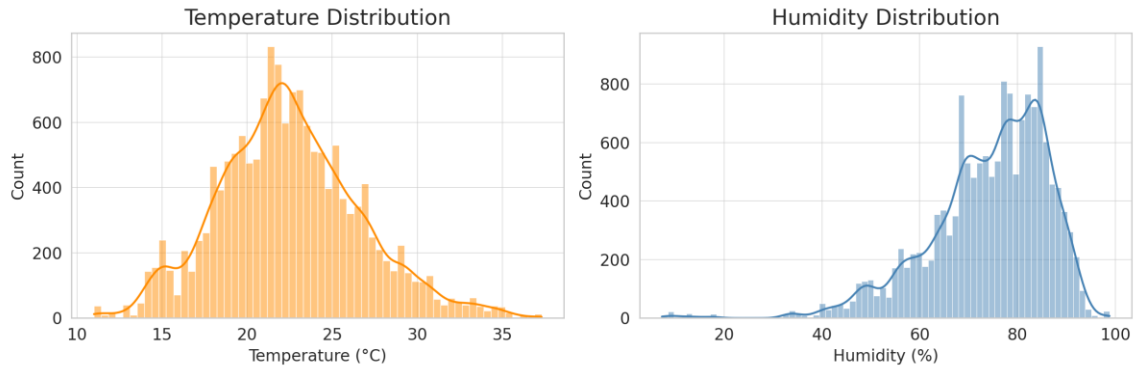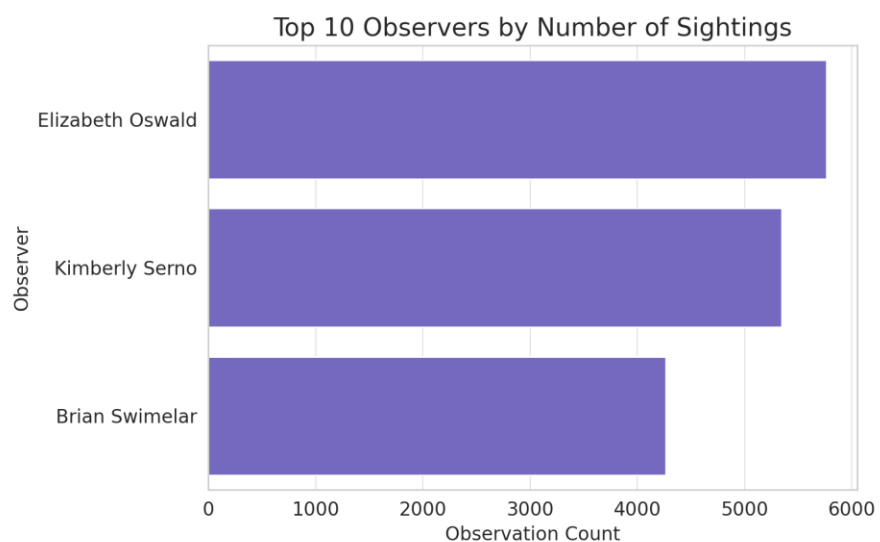

Observations by Sky Condition

Shows how sky conditions (clear, overcast, etc.) affect observation counts — important for detectability.
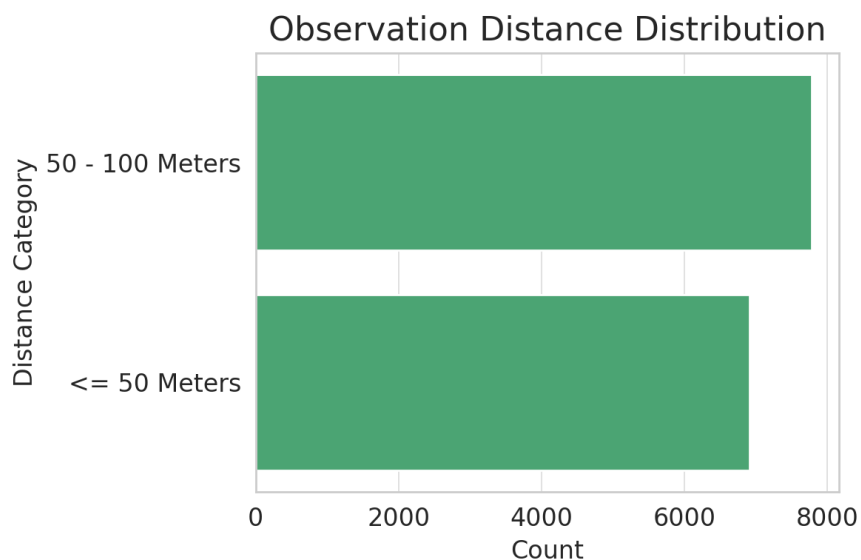
Top Observers

Highlights which observers contributed the most records, helping assess sampling effort and potential observer bias.
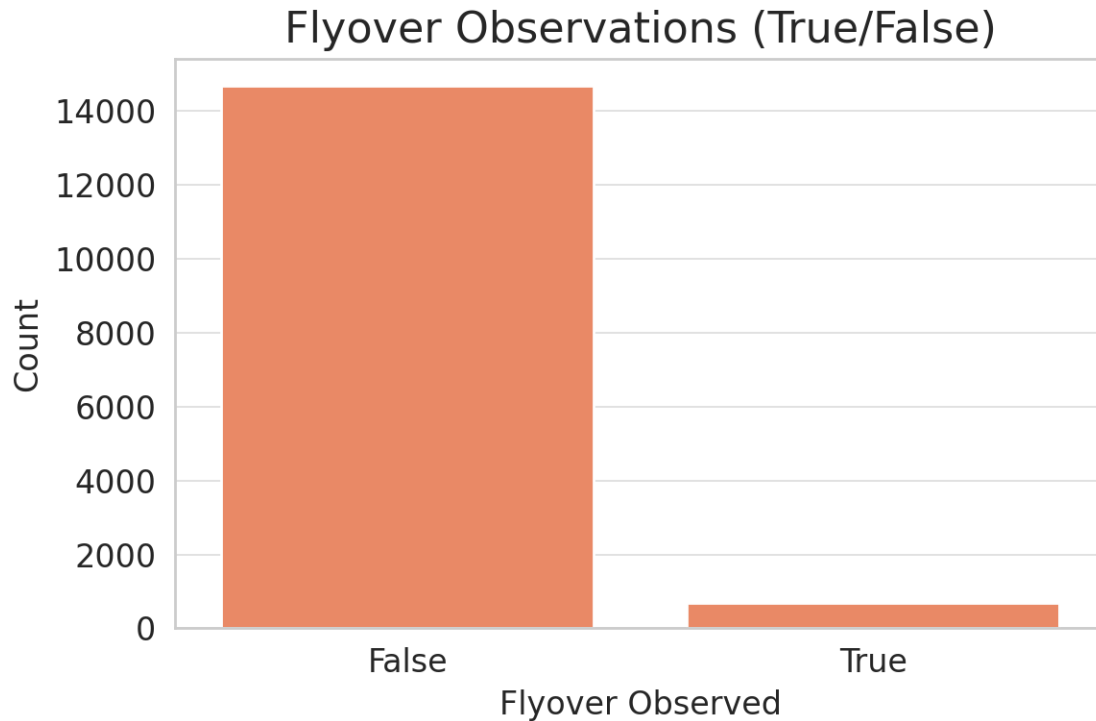

Observation Distance Distribution

Shows the distribution of distances at which birds were detected — informs detectability and distance sampling.

Flyover Observations

Compares counts of flyover observations vs. stationary detections, indicating behavior and possible detection bias.

Recommendations

• Focus monitoring effort during peak months identified in the monthly analysis to maximize detection rates.

• Prioritize conservation assessments for species frequently observed and those flagged in the PIF Watchlist.

• Standardize observer training and protocols to reduce detection bias and improve data consistency.

• Increase sampling effort at under-sampled plots and sites to improve spatial coverage.

• Record additional habitat quality metrics (vegetation structure, land-use) to better explain species-habitat relationships.