

# Biodiversity in National Parks: Conservation Analysis

Patterns of Endangered Species and Observations Overview  
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# Understanding the Dataset: Species Info

- Dataset contains information on **5,824** unique species.
- **Categories:** Mammals, Birds, Reptiles, Amphibians, Fish, Vascular and Non-Vascular Plants.
- **Initial Findings:** Many entries had missing conservation statuses. We identified these as "No Intervention" (common species).
- **Goal:** Investigate why certain categories are more protected than others.



# Statistical Significance in Protection Rates

- **Observation:** Mammals (17.05%) and Birds (15.37%) appear to have the highest risk levels.
- **The Test:** Used a Chi-Square test to compare Mammals vs. Birds.
- **The Result:** P-value was **~0.69** (above 0.05).
- **Insight:** The difference between Mammal and Bird protection rates is not statistically significant. They are being treated/monitored with similar priority.



# Strategic Recommendations

- **Focus on Mammals:** While not statistically different from birds, mammals have the highest proportion of endangered species. Resources should stay prioritized here.
- **Monitor Non-Vascular Plants:** This group has the lowest protection rate. We should verify if this is due to natural resilience or a lack of research data.
- **Unified Strategy:** Since protection rates for major animal groups are similar, continue the cross-species conservation programs.

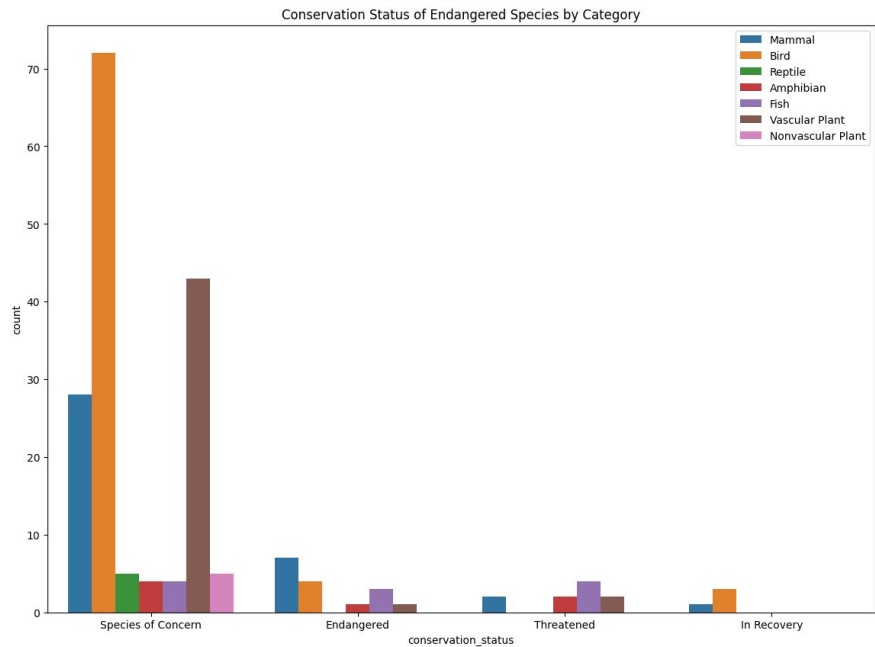


# Study Design: Foot and Mouth Disease in Sheep

- **Objective:** How many sheep do we need to test to see a significant reduction in infection rates?
- **Parameters:**
  - Baseline conversion: 15% (current infection rate)
  - Minimum detectable effect: 5% (we want to see it drop to 10%)
  - Statistical Power: 80% / Significance Level: 5%
- **Required Sample Size:** ~610 sheep per group.

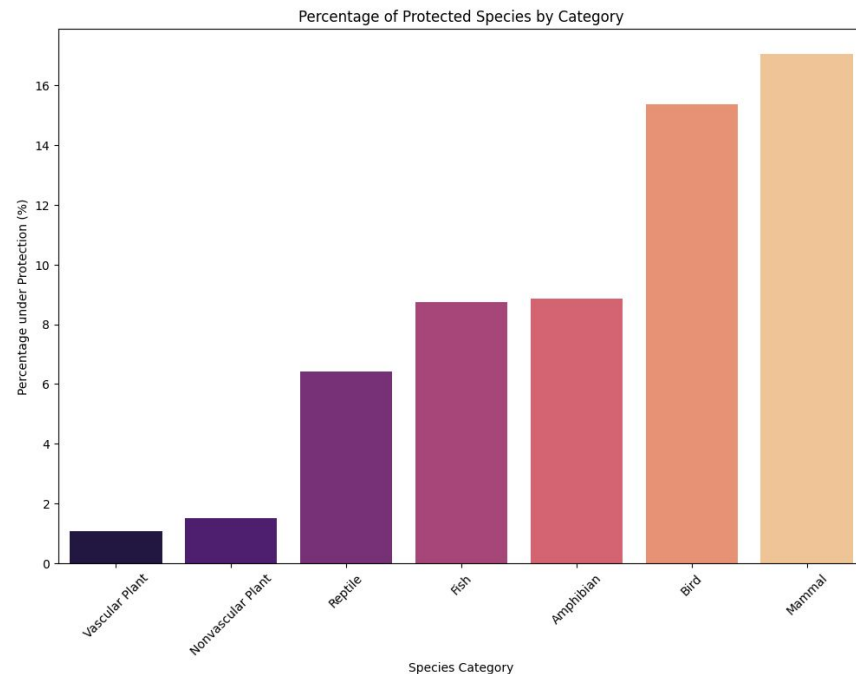


# Visual Overview of Findings





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