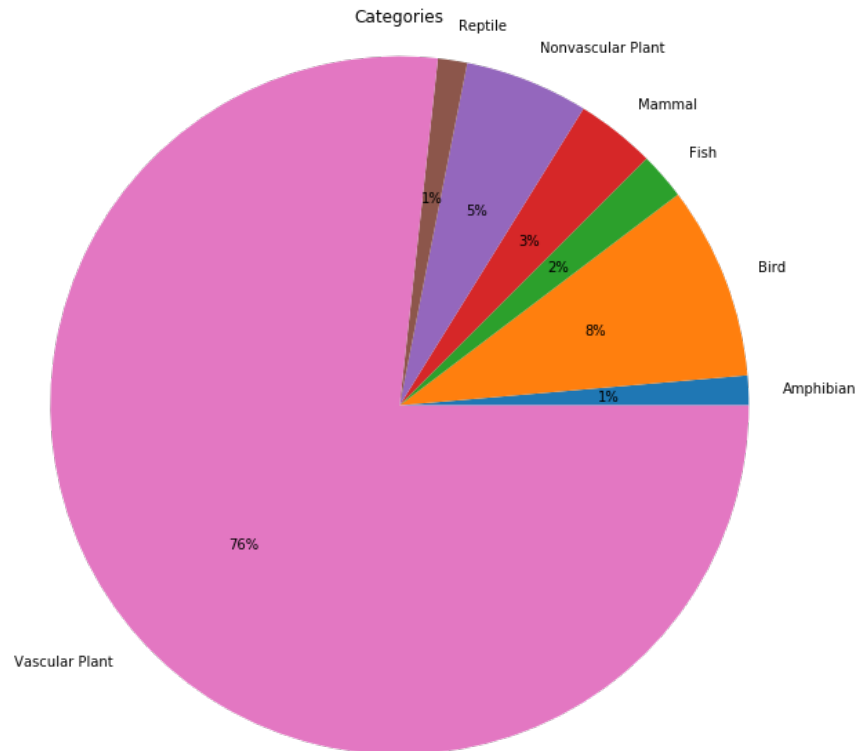


Capstone Project Option 2: Biodiversity for the National Parks

By: Shannon Boller

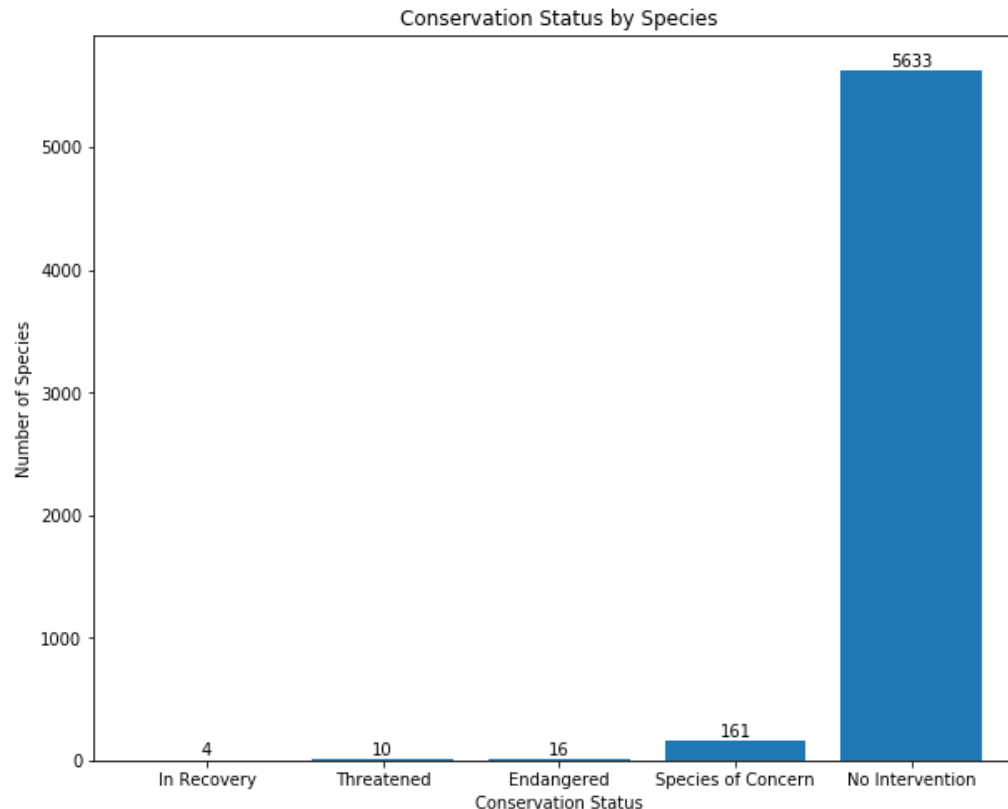
Species Overview

- There is data for 5,824 species found in the national parks
- There are seven different categories of species:
 - Mammal, Bird, Reptile, Amphibian, Fish, Vascular Plant, Nonvascular Plant
 - Vascular Plants make up 76% of the species, almost 10X the next biggest category



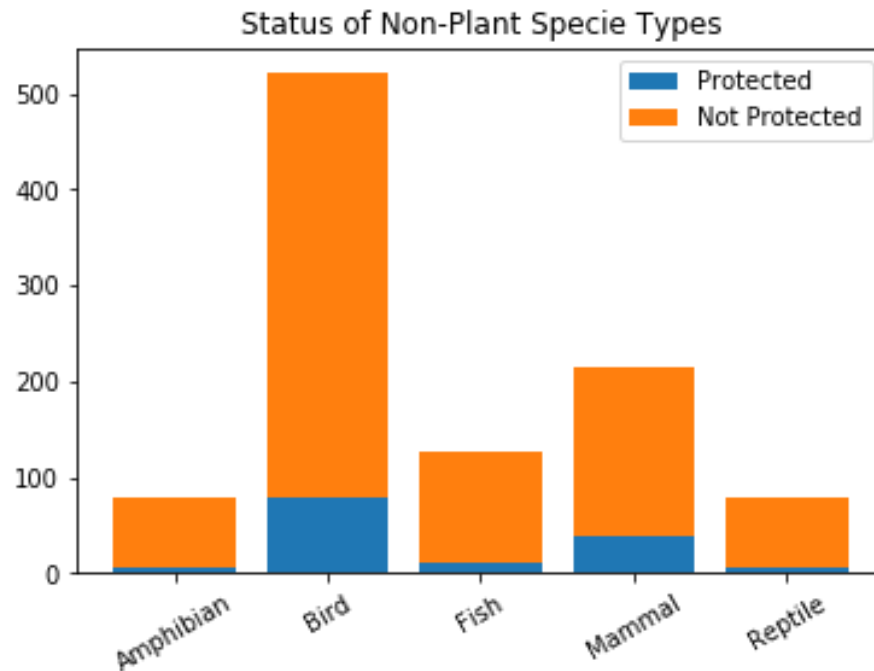
Conservation Status Overview

- There are 4 different Conservation Statuses that can be assigned to species that require intervention:
1) Endangered 2) Threatened 3) In Recovery 4) Species of Concern
- The vast majority of species require no intervention



Endangered Status of Different Species

- Mammals and Birds have the highest percentage of protected species with 18% and 15% respectively



- Mammals are more likely to require protection than fish or reptiles.
 - There is less than a 5% chance that the number of protected mammals compared to the number of protected reptiles and birds is due to chance.

Recommendation for Conservationists

- We should look further into why mammals are more threatened than reptiles and fish.
- Are there specific types of mammals?
 - Based on the data, certain varieties of: Wolves, Myotis, Sheep, and Squirrels are among the endangered types of species
- Are the specific types of mammals:
 - concentrated in one geographical area?
 - Dependent on certain predators/prey?
 - More sensitive to changing temperatures?

Foot and Mouth Disease Study

- 15% of sheep at Bryce National Park have Foot & Mouth disease.
- Park rangers at Yellowstone National Park have been running a program to reduce the rate of Foot & Mouth disease at that park.
- To test whether the Yellowstone National Park program is working to deliver a 5% lower rate of Foot & Mouth disease, we need a sample size of **520** sheep per park.
- Scientists at **Bryce National Park** will need to observe sheep for a **3 week period**
- Scientists at **Yellowstone National Park** will need to observe sheep for a **2 week period**
- Then we can evaluate the results to see if the Yellowstone program is working.

