

BIODIVERSITY CAPSTONE PROJECT

INVESTIGATING PROTECTED SPECIES





Conservation Data





Conservation Status Observations

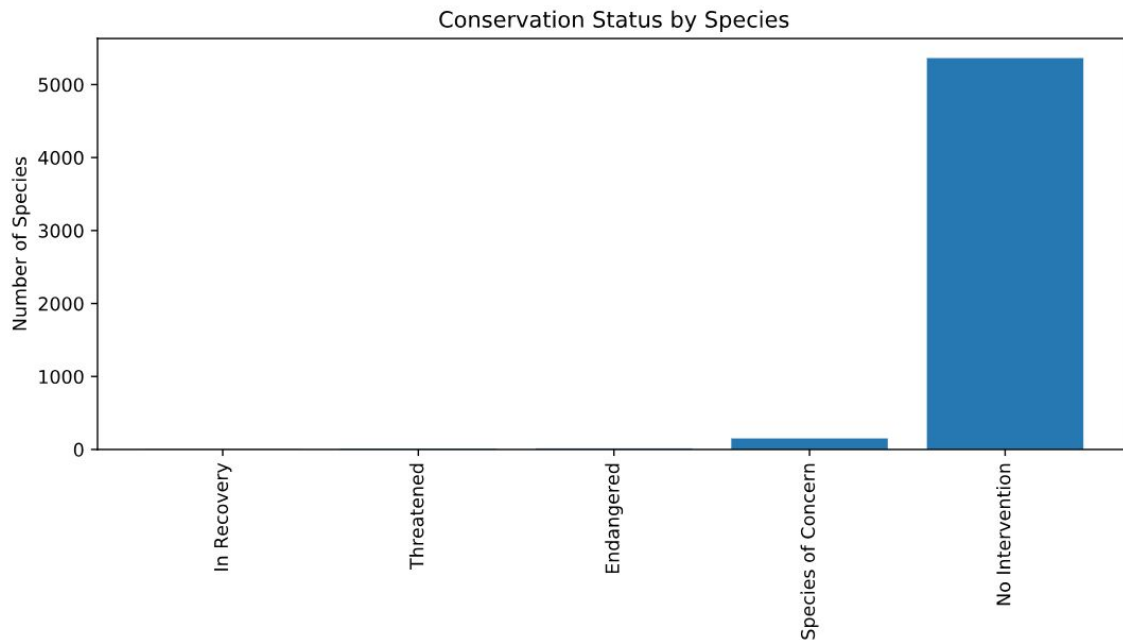
National Parks Service asked for analysis on conservation status

Data included 5,543 different species

96.75% of species do not need intervention

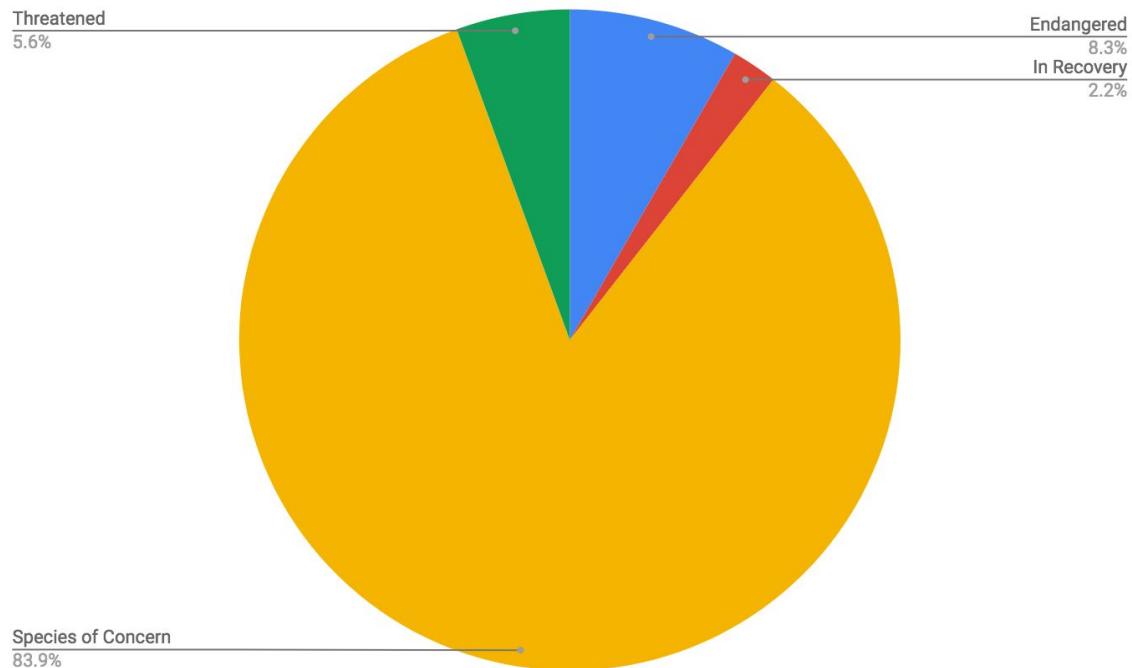


Species Count by Conservation Status





Conservation Status Requiring Intervention



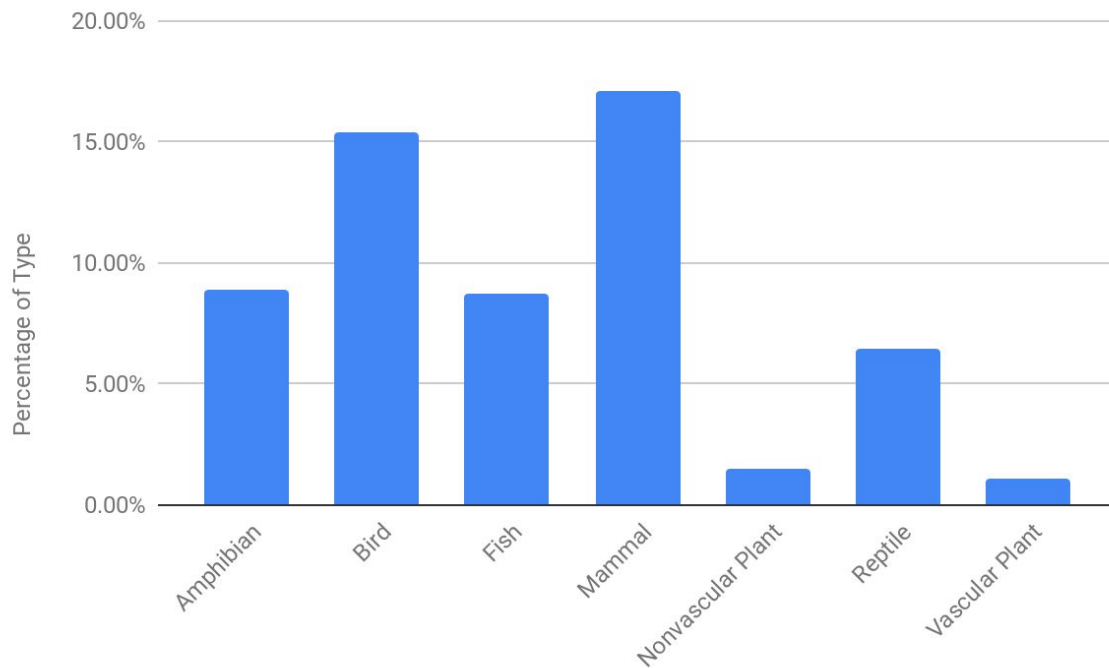


Conservation Analysis





Species Types Requiring Intervention





Are Certain Species More Vulnerable?

Using a Chi-Squared Test for Significance

No significant difference found beyond simple chance for Mammals vs Birds

However, Reptiles are more likely to be endangered when compared to Mammals

Conclusion is that there is a difference between species, some are more vulnerable than others.

Focus should be applied to more vulnerable species such as reptiles.



Foot and Mouth Reduction





Foot and Mouth Reduction Requirements

The National Park Service has been running a program to reduce Foot and Mouth Disease in their sheep flocks in Yellowstone National Park

NPS Scientists need to know how many observations need to be made to detect a statistically significant drop

Observations available for last year from Bryce National Park show **15% of sheep have Foot and Mouth disease**

Success is defined as the number of diseased animals **changing from 15% to 10%** of the flock



Foot and Mouth Reduction Calculations

A baseline percentage of **15%** (the number observed in Bryce National Park)

The minimum detectable effect is **33%** (5% from the success criteria out of 15% from the baseline)

The minimum number of observations is 870 so observation will take

- **3.48 weeks at Bryce National Park, and**
- **1.72 weeks at Yellowstone National Park**