

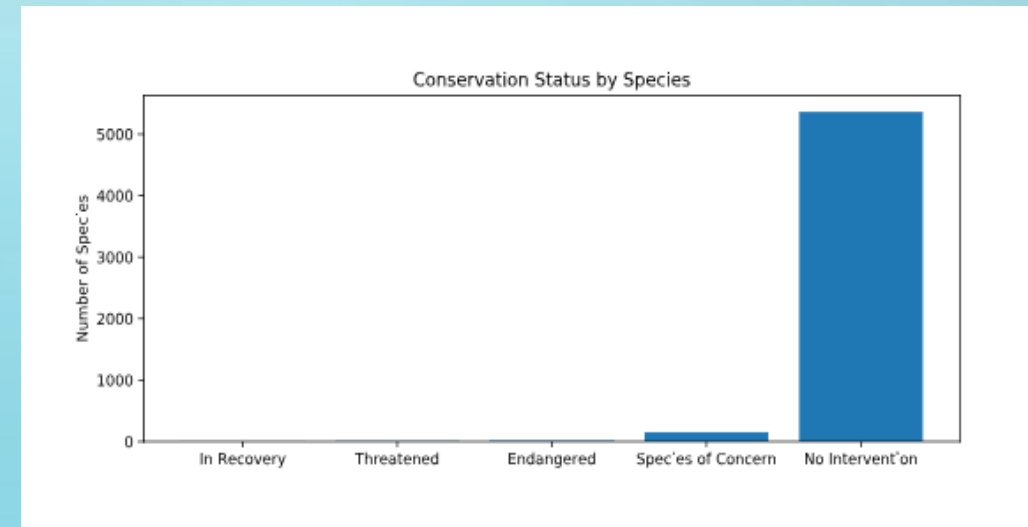


# Biodiversity in National Parks

Capstone 2: dmwinters

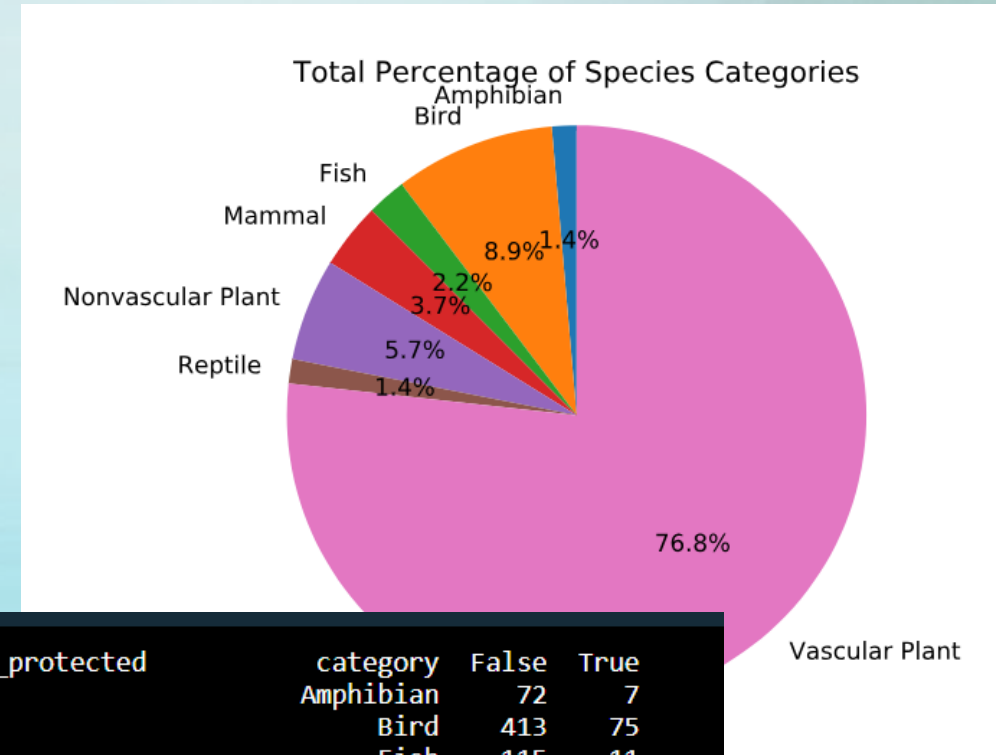
# The Data

- The species data is comprised of 5824 rows and 4 columns: category, scientific\_name, common\_names, and conservation\_status
- category is defined as 'Mammal', 'Bird', 'Reptile', 'Amphibian', 'Fish', 'Nonvascular Plant', or 'Vascular Plant'.
- scientific\_name has 5541 unique entries
- common\_names may have more than one name listed (separated by a comma)
- There are 5363 entries that are not listed with a conservation\_status, meaning that they are not identified for protection.



# The Data (insights)

- Vascular Plant species make up 76.8% of the data.
- Only 1% of Vascular Plant species are protected.
- Overall, 3.24% of the species are protected.



is_protected	category	False	True
0	Amphibian	72	7
1	Bird	413	75
2	Fish	115	11
3	Mammal	146	30
4	Nonvascular Plant	328	5
5	Reptile	73	5
6	Vascular Plant	4216	46

conservation_status	scientific_name
0	Endangered 15
1	In Recovery 4
2	No Intervention 5363
3	Species of Concern 151
4	Threatened 10

# Significance Findings for endangered\_status

Question: Are certain types of species more likely to be endangered?

Findings:

- Chi-Squared Tests revealed the following significant differences:
  - Mammals are more likely to be endangered than Reptiles.
  - Both plant species are significantly less likely to be endangered than any other species, but neither plant species is more or less likely to be endangered than the other.
  - Mammals are not more likely to be endangered than birds.

# Recommendation

- Based upon our significance tests, some species are more likely to be endangered than others.
- Therefore, it is recommended that conservation efforts, funding, and focus should be evaluated based upon the likelihood of the species being endangered.
- Efforts and funding should not be divided by the number of species in a category.

# Foot and Mouth Disease Study (Sample Size)

- We used the Bryce National Park data as the baseline of Foot and Mouth disease in sheep populations.
- To ensure a 90% chance of significance of changes equal to 5% of the population, the team would need a sample size of 890.
- We would expect it to take just under 2 weeks to collect the sample size of observations at Yellowstone.

Baseline conversion rate: 15 %

Statistical significance: 85% 90% 95%

Minimum detectable effect: 33 %

Sample size: 890

