Biodiversity Project
of
Our National Parks

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CODECADEMY
DATA ANALYSIS CAPSTONE PROJECT
MARCH 13 - JUNE 5TH, 2018 COHORT

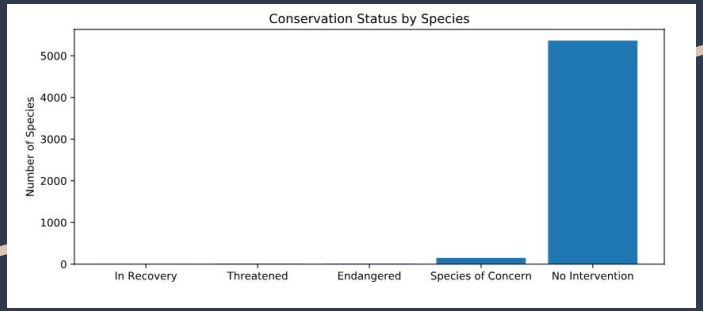
What we will cover:

- Analytical findings to understand significant patterns endangered species
- Highlight possible patterns and conduct investigation
- Provide recommendations as needed to determine next action to collection for animals with foot & mouth disease

Data Tools Used

Review of csv file

- species_info.csv



SPECIES_INFO - Data File included:

- Species details type of scientific name, species category, conservation status
- Listing of 5,541 unique species across several national parks
- Species categories - Mammal, Birds, Reptile, Amphibian, Fish, Vascular Plant & Nonvascular Plant
- Conservation Statues - Species of Concern, Endangered, Threatened, In Recovery, & No Intervention (didn't have conservation statues)

(graph on the left describes status of species)

Purpose of Analysis

Are certain types of species more likely to be endangered?

After review of the data more patterns arose :

a. Endangerment risk of significance between:
   i. Mammals vs. Birds
   ii. Protected Reptiles vs Mammals

b. Understanding if risks was by chance or related

c. Use of data analysis tool to determine what was really going on (Chi-squared test used)

	category	not_protected	protected	percent_protected
0	Amphibian	72	7	0.088608
1	Bird	413	75	0.153689
2	Fish	115	11	0.087302
3	Mammal	146	30	0.170455
4	Nonvascular Plant	328	5	0.015015
5	Reptile	73	5	0.064103
6	Vascular Plant	4216	46	0.010793

Recommendations

- What endangerment risk of significance between:
    a. Mammals vs. Birds
    b. Protected Reptiles vs Mammals

- Mammals vs. Birds
    a. No significance found were results by chance

- Mammals vs. Protected Reptiles
    a. Significance found were results was related

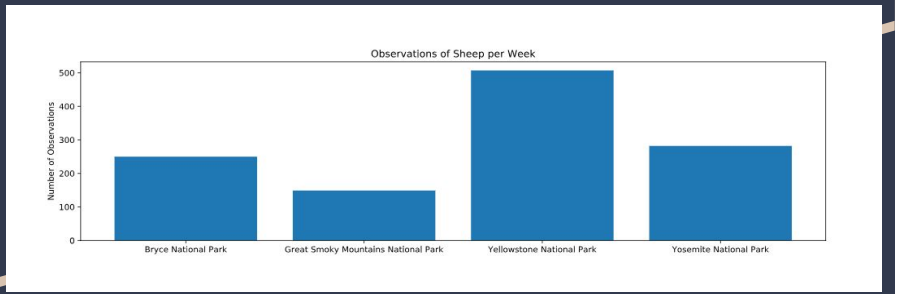
Conclusion

Are certain types of species more likely to be endangered?

Yes, certain type of species are more likely to be endangered than others.

Foot & Mouth Disease Study

Focus on Sheep



- After analysis insights on the best places to observe sheep, and find the sample size needed potentially reduce the disease (graph on the left of sheep observations)
- To help rangers & scientists observe we must used 870 sheep sample size:
    - Yellowstone Park requires about 1 week
    - Bryce Park about 2 weeks or more