Biodiversity: Capstone Project

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Species_info.csv Species Observations

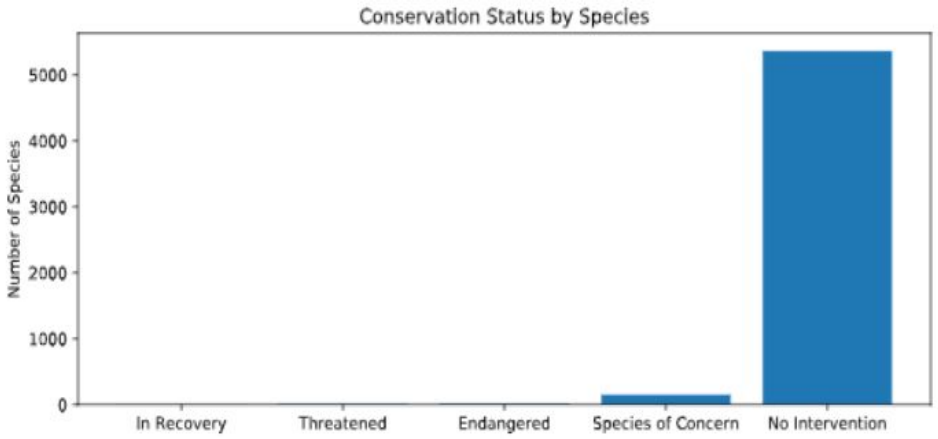
-Majority of species were listed as ‘No Intervention’ and few species were listed as ‘Threatened’ or ‘Endangered’ from the data

-Reptiles, Birds, Amphibians, Fish, Nonvascular Plants and Vascular Plants have lower rates of endangered species than Mammals and Birds

-Species that were listed as ‘No Intervention’ were then categorized under ‘No Protection’

-Vascular Plants have the largest number of species among Plants while Birds have the largest number of species among every other Animal groups

Species Graph



-Because Nonvascular Plants accounted for the largest amount of species recorded and had a lower rate of endangered or threatened species, the number of species under the graph ‘No Intervention’ seemed to dwarf the amount of endangered species.

-Endangered and Threatened species appeared to have a very small number because Mammals and Birds who showed higher rates of those endangered had about 18% of Mammals were Protected while 15% of birds were Protected, a small minority compared to other Mammal and Bird species.

Table of Protected and Not Protected

	category	not_protected	protected	percent_protected
0	Amphibian	73	7	0.087500
1	Bird	442	79	0.151631
2	Fish	116	11	0.086614
3	Mammal	176	38	0.177570
4	Nonvascular Plant	328	5	0.015015

-The graph showed the state of every species documented in the parks, but this did not show that certain types of animals are more likely to need protection due to higher percentage of certain species falling under the endangered category.

Significance of Endangered Species

-Mammals and Birds are more likely to be endangered then other animal and plant types, the difference between the two percentage wise is **not significant** when running a chi-squared test.

-The p-value for that chi-squared test was at 0.688

-Comparing the percentage of endangered species from mammals to reptiles shows a **significance** in percentage and that some species are more likely to be endangered than other animal groups

-The p-value for this chi-squared test was at 0.038

-When focusing on restoring endangered populations, I recommend to really focus on mammals and birds, as they are significantly more likely to fall under the endangered list. Mammals and birds are similarly as likely to fall under the endangered list, so similar resource allocation to monitoring and protecting of mammals and birds would be ideal.

-Other types of animals would not need as much supervision as they are less likely to be at risk of becoming endangered.

Foot and Mouth Disease Study

-When observing sheep at Bryce Canyon National Park, 15% of the sheep had foot and mouth disease, making this the baseline percentage when observing the sheep population.

-If the scientists wanted to observe a drop of at least 5% in foot and mouth disease was significant, they would need 870 observations at Yellowstone.

-This would take over one week to obtain at Yellowstone while this number would take two weeks to observe at Bryce Canyon. The reason for this is the absolute number of sheep observed at Yellowstone was highest among all other national parks, and would take less time for scientists to reach the sample size needed for an observation.

Observations of Sheep