Protected Species Investigation

By Shahed Alam

Index

- Introduction
- Current conservation status of different species
- Analysis between different species
- Final thoughts on endangered species and recommendation
- Sheep species
- Foot and Mouth Reduction Effort
- Conclusion
- References

Introduction

National parks are considered one of many ways in preserving its inhabitants from not only being endangered, but also going extinct. It is important to know if each species is surviving based on the population and what solutions can be presented in order ensure each group's survival.
In this presentation, I will give an insight on the data about some of the species that was collected in the analysis. It will include graphs, which will show the number of species and their conservation status. I will present calculations in order to see if there is a significance between any two different species. I will also present a recommendation based on the analysis for improving conservation. Finally, I will present my findings on the foot and mouth disease and how it affects the sheep species.

Current conservation of different species groups

From species_info.csv, there are seven groups of species, which are Mammal, Bird, Reptile, Amphibian, Fish, nonvascular plants, and vascular plants. The total number from all species is 5,541. Below are numbers for species that are not protected. Each group are being protected way less then being not protected. The species that is not protected the most is the vascular plant due to land development and climate change. After grouping the number of different species in different conservation statuses, here are the results:

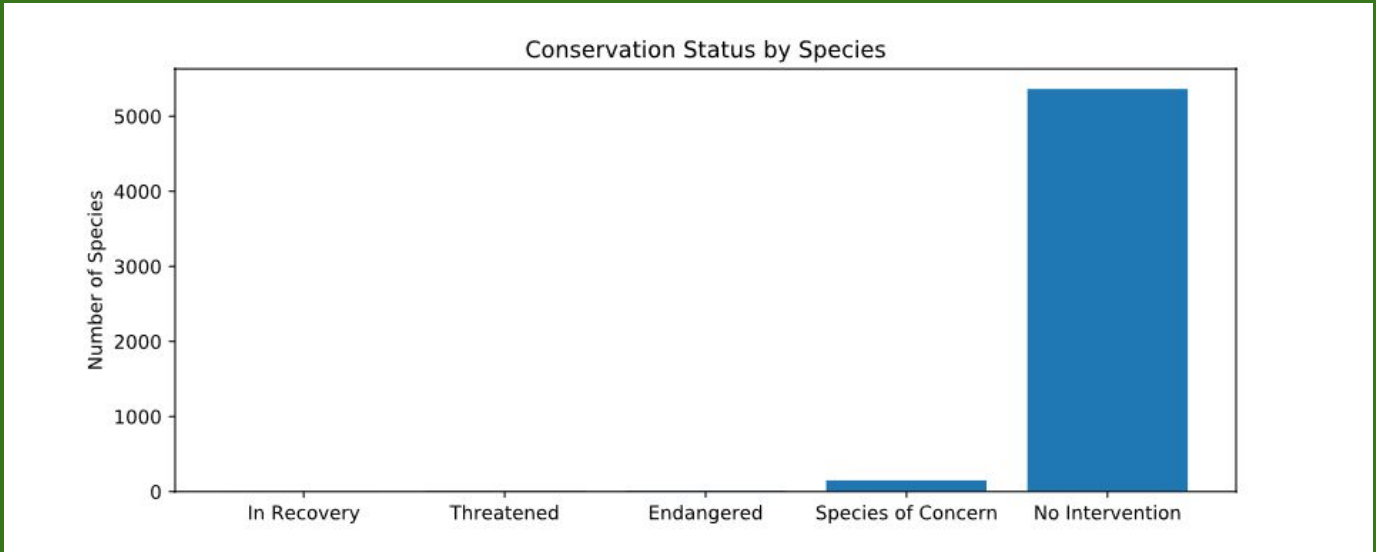
Amphibian	Bird	Fish	Mammal	Nonvascular Plant	Reptile	Vascular Plant
72	413	115	146	328	73	44216

Conservation Status

Endangered	In Recovery	No Intervention	Species of Concern	Threatened
15	4	5363	151	10

Conservation Status by Species graph

The bar graph shows that most of the species require no intervention. The status “No Intervention” means to allow natural processes to take place without any aid to the inhabitants (wildeurope.org, n.d.). However, the graph shows some species require attention in other statuses.



Significant calculations

The null hypothesis is whether any of the species are considered protected more than others due to chance. The data had to be pivoted first in order to show many of each species group is protected or not. After setting up a chi-squared test, the protected mammals and birds were used to see if there was any significance. The value calculated was 0.68, which indicates there is no significance and the hypothesis cannot be rejected. Then another chi-square test was used to determine the significance between protected mammals and reptiles.The value was 0.038, indicating there is is a significance and having to accept the null hypothesis. In conclusion, certain species are more endangered than others due to being affected by circumstances such as habitat destruction or dangerous waste.

Recommendations

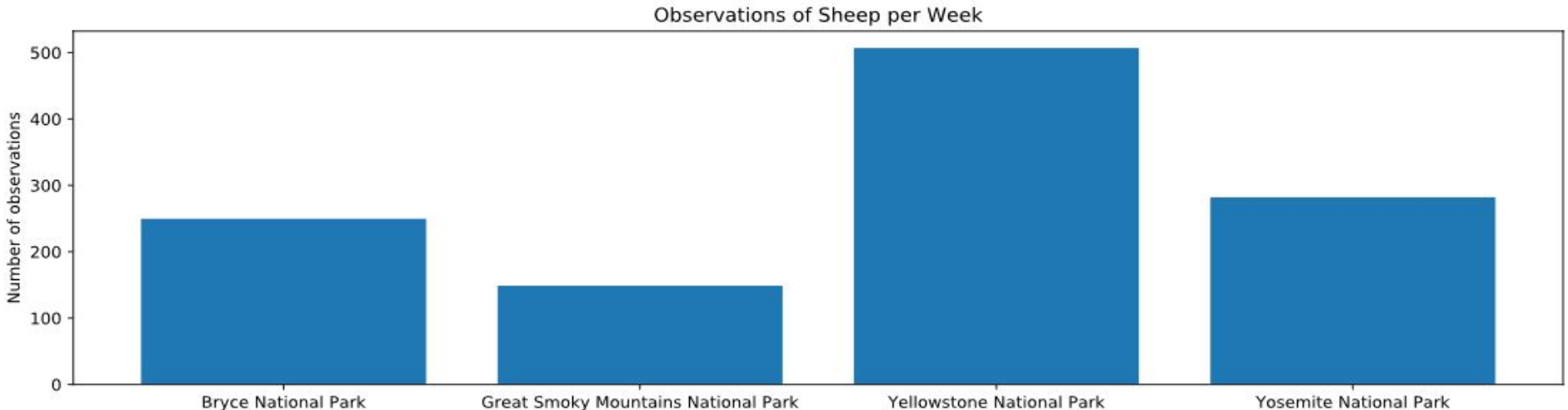
Based on the significant calculations, I would recommend employing better conservation methods for certain specie groups that require more attention, but at the same time continue current conservation methods for species that are well-protected and require no intervention. Here are some solutions I recommend:

- **Promote activities that will engage the public to not only learn about endangered species, but possibly volunteer in wild conservation as well (endangered.org, n.d.).**
- **Impose more penalties on illegal hunting as well on possessing animal trophies made from protected species (endangered.org, n.d.).**
- **Create more sanctuaries for endangered species in order to preserve the remaining numbers (endangered.org, n.d.).**
- **Protect natural habitats should also be increased as well as sanctioned on ones needed to sustain wildlife (endangered.org, n.d.).**

Sheep species

Many species of sheep have been sighted all over many national parks. The graph below shows the number of observations per week.Below are the total sum for each park:

Bryce National Park	Great Smoky Mountains National Park	Yellowstone National Park	Yosemite National Park
250	149	507	282



Foot and Mouth disease

In order to determine the size of population needed to ensure that the foot and mouth percentage is significant, it required knowing what the values for the baseline and the minimum detectable effect are. The baseline is fifteen percent of the sheep population that had foot and mouth disease. In order to calculate the minimum detectable effect, the percentage point, which is five, was divided by the baseline then multiplied by one hundred to get thirty-three percent. Then using the sample size calculator, the sample size needed to be more than the five percent significant was five hundred and twenty sheep per week. The number of weeks it would take to observe the sheep at Yellowstone National Park would be one week, while at Bryce National Park would be two weeks. This would ensure that there was more than a five percent drop in disease cases.

Conclusion

In conclusion, conducting these analytic tests have shown that there have been some improvement in the environment as well as changing the ways that species are being preserved. Although many different species have gone extinct, other species have grown back to a more stable population. More protection laws need to be put into place as well finding more ways to reduce waste that is being left in the environment can make a difference in protecting many species out there. If species conservation continues as well as improves, then the chances for many species to continue on is possible.

References

- Non intervention’ management guidelines in operation. (n.d.). Retrieved from http://www. wildeurope.org
- 10 Easy Things You Can Do to Save Endangered Species. (n.d.). Retrieved from www.endangered.org