A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is a light green. They are positioned diagonally, with the blue one partially covering the green one.

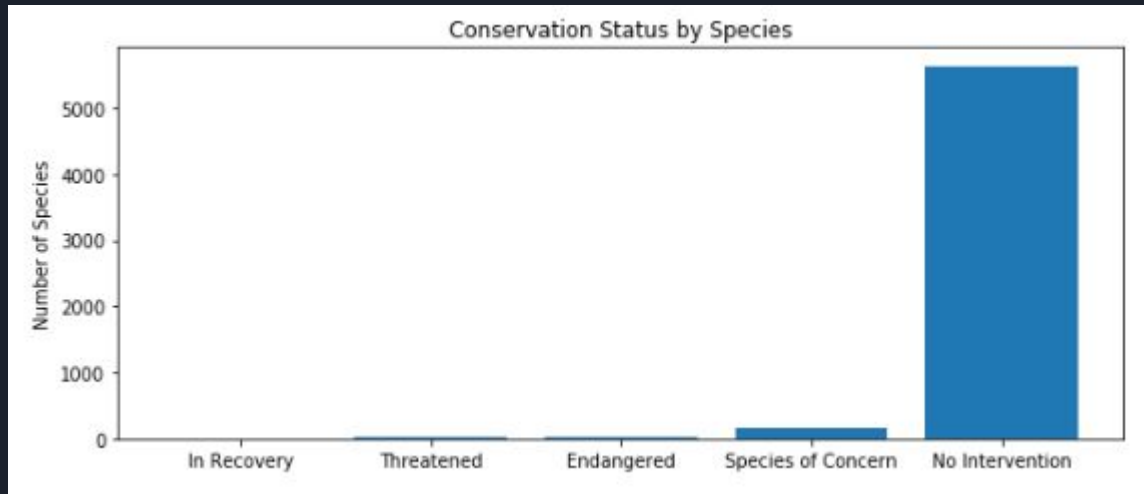
Endangered Species Analysis and Recommendations

A look at data from the US National Park Service

What's the Breakdown of Conservation Status by species?

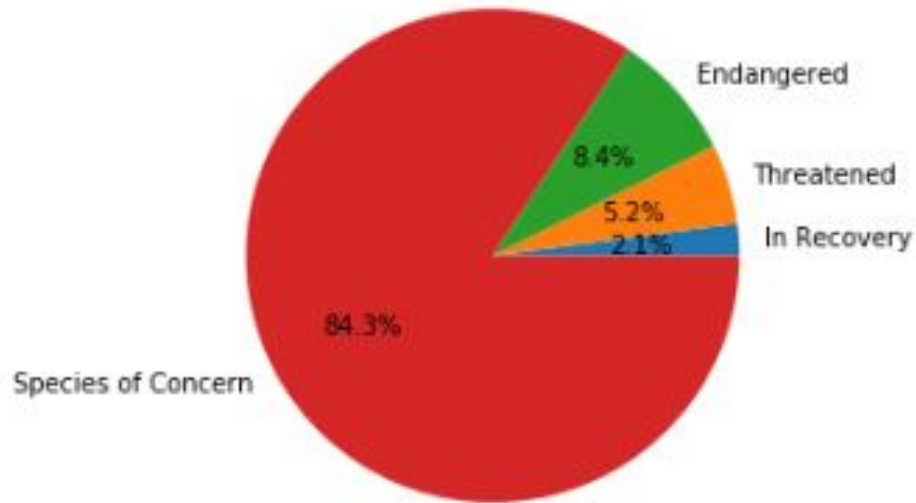
Most species are not assigned a protected status in the United States.

	conservation_status	scientific_name
1	In Recovery	4
4	Threatened	10
0	Endangered	16
3	Species of Concern	161
2	No Intervention	5633



What's the breakdown by category of only protected species?

Protected Species by Category



Large majority of the protected species are in 'Species of Concern'

'Endangered', 'Threatened' and 'In Recovery' make up just over 15% combined.

Are more species likely to be endangered?

	category	not_protected	protected	total_species	percent_protected
6	Vascular Plant	4216	46	4262	0.010793
4	Nonvascular Plant	328	5	333	0.015015
5	Reptile	73	5	78	0.064103
2	Fish	115	11	126	0.087302
0	Amphibian	72	7	79	0.088608
1	Bird	413	75	488	0.153689
3	Mammal	146	30	176	0.170455

Plants have by far the least percent.

Amongst animal species:

1) Mammals and birds have the highest percent of their species that is protected.

2) Reptiles and fish have the least amount



Are the differences significant or is it caused by random chance?

	category	not_protected	protected	total_species	percent_protected
6	Vascular Plant	4216	46	4262	0.010793
4	Nonvascular Plant	328	5	333	0.015015
5	Reptile	73	5	78	0.064103
2	Fish	115	11	126	0.087302
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1	Bird	413	75	488	0.153689
3	Mammal	146	30	176	0.170455

Chance that data is merely random:

Birds & Mammals -> 68.76%

Mammals & Reptiles -> 3.84%

What this means:

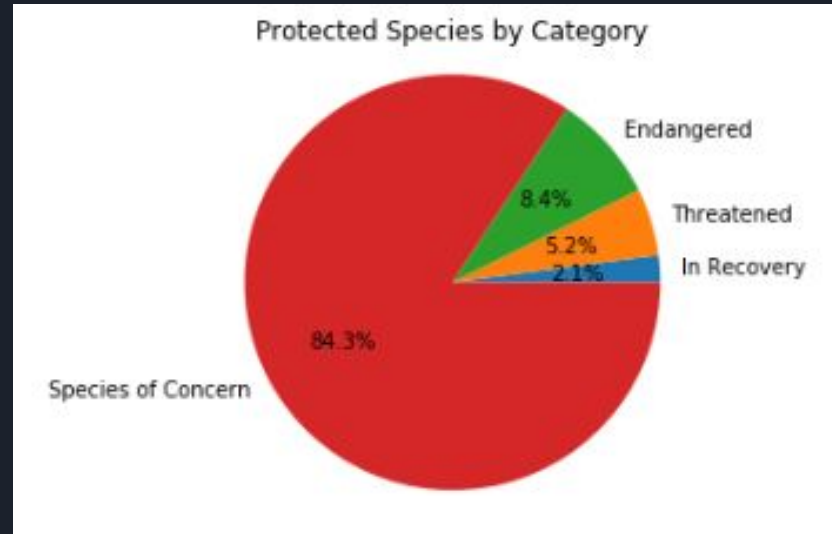
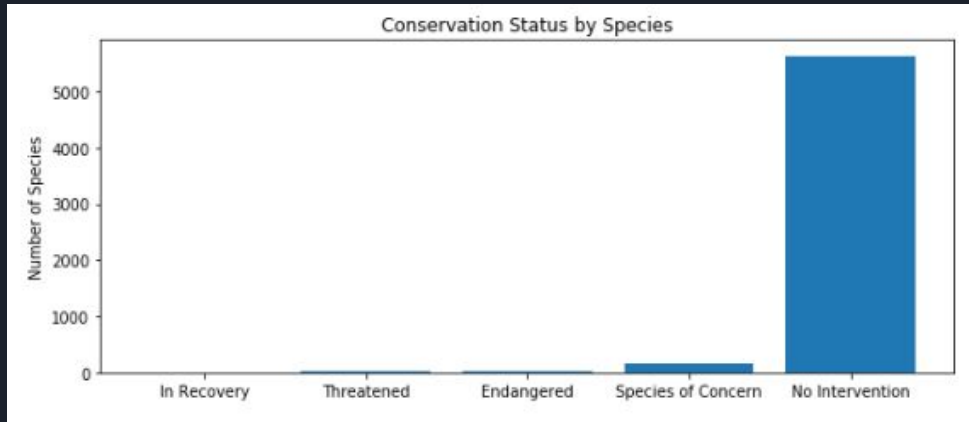
There is something (or multiple things) that are affecting the percent of mammals that are protected and the percent of reptiles that are protected.

Recommendation #1:

Most species are not protected - let's hope this continues!

For the species that are protected:

- 1) Continued or increased efforts on highest risk species ('endangered' and 'threatened')
- 2) Vigilant monitoring of trends in 'Species of Concern' category



Recommendation #2:

Discover what is the relationship between percent of species that are threatened between Mammals and Reptiles.

Suggestions:


- 1) Categorization discrepancy
- 2) Systemic issue within national park ecosystem

	category	not_protected	protected	total_species	percent_protected
6	Vascular Plant	4216	46	4262	0.010793
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Chance that data is merely random:

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How large should the sample size be for our sheep foot and mouth disease reduction program?

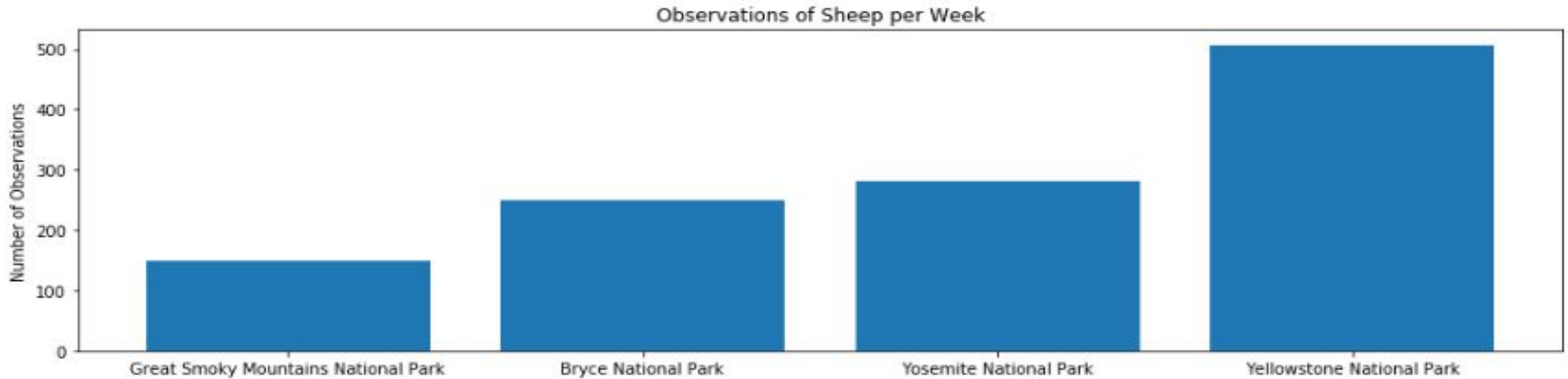
IF:

- 1) Affected sheep at Bryce: 15%
- 2) Our hopeful outcome: 5% decrease
- 3) Confidence Interval: 90 %

Then:

Our Sample Size should be 510 sheep

How long will it take to collect observations for our sheep foot and mouth reduction program?



Bryce: About 2 weeks

Yellowstone: About 1 week

Note: Continue collecting until you've met the total observed amount of sheep. Don't stop until before or after!

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