

Analysis of the Species



for the National Parks Service
by Daria Borisenko-Orlowski

Part 1. Endangered Species

We have received data on over 5,500 species contained in the US national parks. Of those:

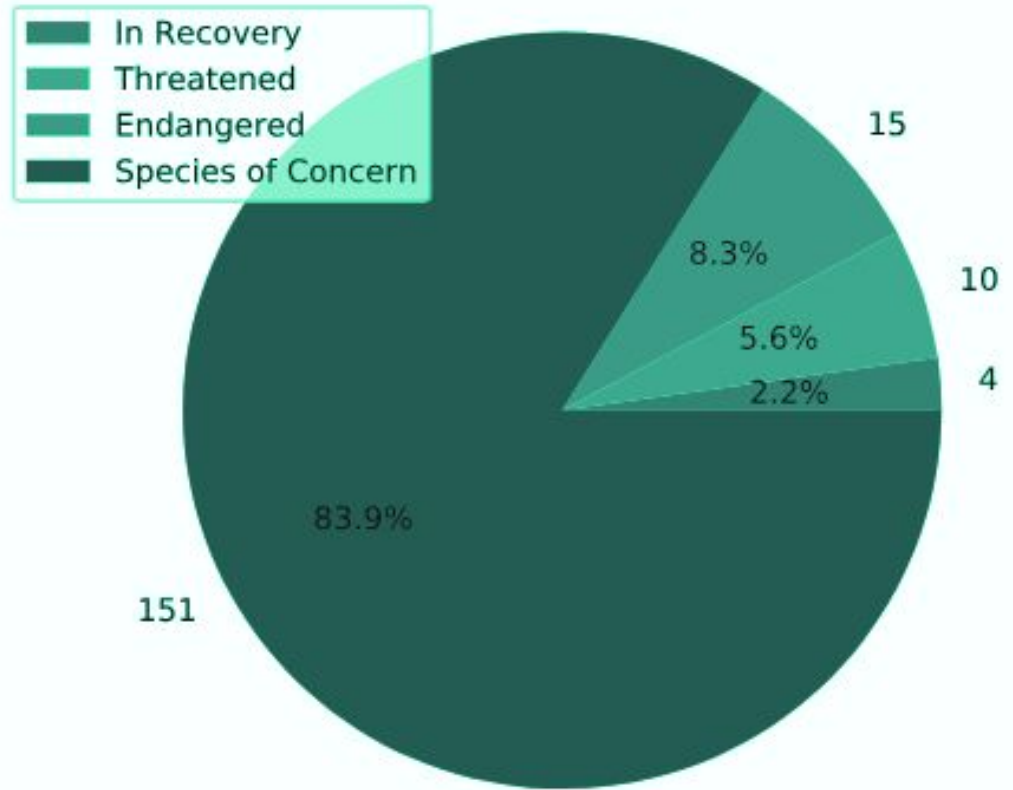
- 15 species are endangered
- 4 species are in recovery
- 10 species are threatened
- 151 species are considered species of concern

However, 5,363 species seem to be doing alright.



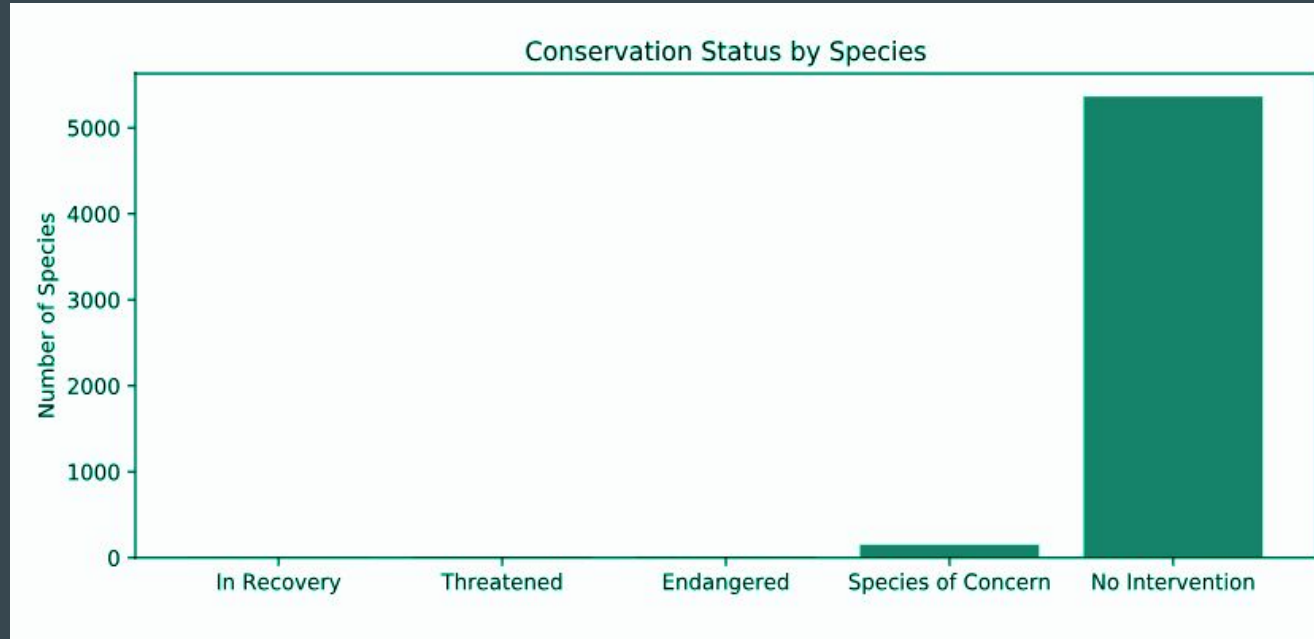
Take a Look

Of all the endangered species, the vast majority are “Species of Concern”.



Take a Look

Compared to species who haven't experienced any intervention, the number of endangered species doesn't seem very significant. (Which doesn't mean there's nothing to worry about!)



So What?

Over 3% of species contained in national parks are protected.

1 of every 34 species can go extinct if we don't take care of it.



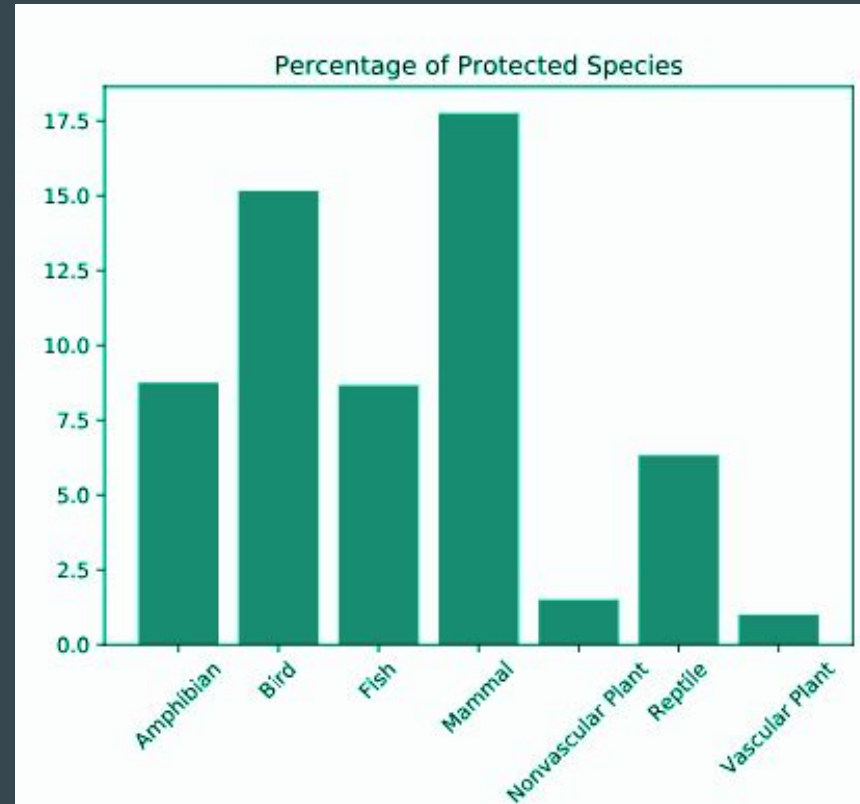
Endangered Species by Category

We have compared the number of protected and non-protected species for different categories of animals.

Category	Non-protected	Protected
Amphibian	73	7 (8.75%)
Bird	442	79 (15.16%)
Fish	116	11 (8.66%)
Mammal	176	38 (17.75%)
Nonvascular Plant	328	5 (1.5%)
Reptile	74	5 (6.32%)
Vascular Plant	4424	46 (1%)

Are certain species more likely to be endangered?

Clearly, yes. We can see that the percentage of protected birds and mammals is significantly higher compared to other categories of species. The lowest percentage of protected species is to be found among plants.



Are mammals more likely to be endangered than birds?

Probably not. At least, we can't assert that. Although we see that currently 2.59% more mammals are protected, our significance test showed that this difference can be the result of pure chance.

We have also compared two categories of plants and three categories of water species and haven't detected significant difference inside these groups. Thus, we can rank the tendency toward endangerment the following way:

#1 Birds and mammals

#2 Fish, amphibians and reptiles

#3 Plants

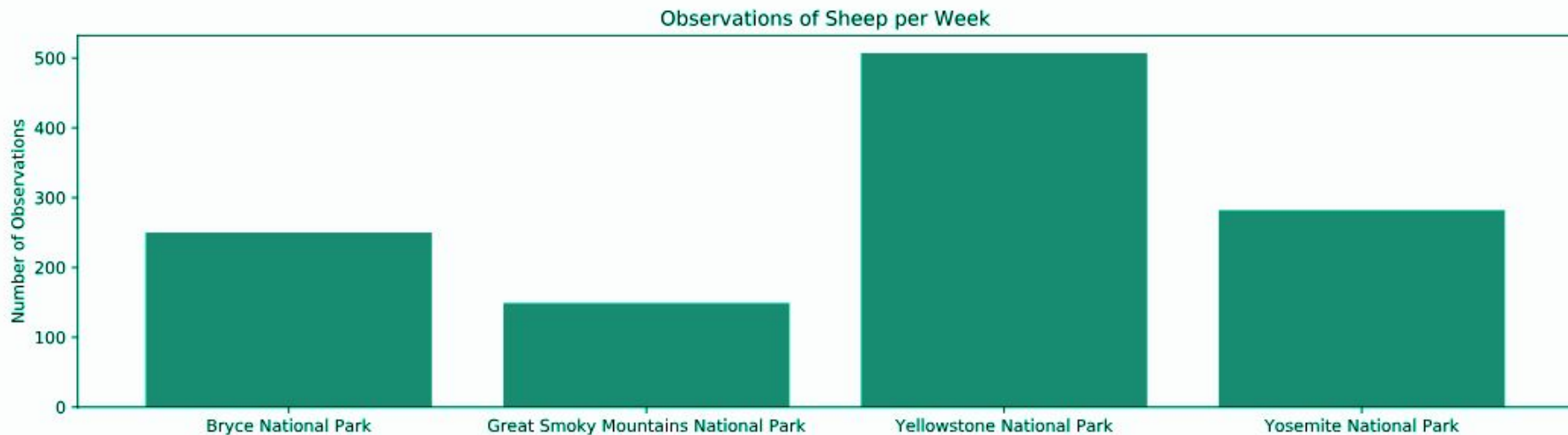
Part 2. Sheep Observations

Two different species of sheep—Ovis aries and Ovis canadensis—were observed at four different national parks over the past 7 days. Although, Ovis canadensis seem to be found only at Yellowstone. And endangered Ovis canadensis sierrae haven't been seen at all! That's somewhat disturbing :(

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

Take a Look

Yellowstone is full of sheep!



Save the Sheep

Yellowstone has been running a program to reduce the rate of foot and mouth disease among sheep. Last year, 15% of the poor creatures at Bryce had the disease. We'll be able to say the program is working if we detect reductions of at least 5 percentage points.

To define the future of the program with 90% of confidence we need to observe **870 sheep**. This means **13 days** of observations at Yellowstone. To repeat the measurements at Bryce, scientists will need to spend **24 days** counting sheep.

THANKS CODEACADEMY!
THAT WAS FUN.

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