Biodiversity Capstone Project - Investigating Protected Species

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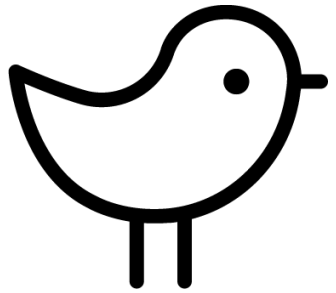
Overwiew

Species_info spreedheet contains data of animal and plant categories, scientific and common names and conservation statuses to particular species.

In National Parks you may find:

- 80 species of Amphibians,
- 521 species of Birds,
- 127 species of Fishes,
- 214 species of Mammals,
- 79 species of Reptiles,
- 333 species of Nonvascular Plants,
- 4470 species of Vascular Plants,



Particular species has been classified to 5 categories depending on conservation status. Conservation statuses and count of species assigned to particular conservation groups presented below.

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

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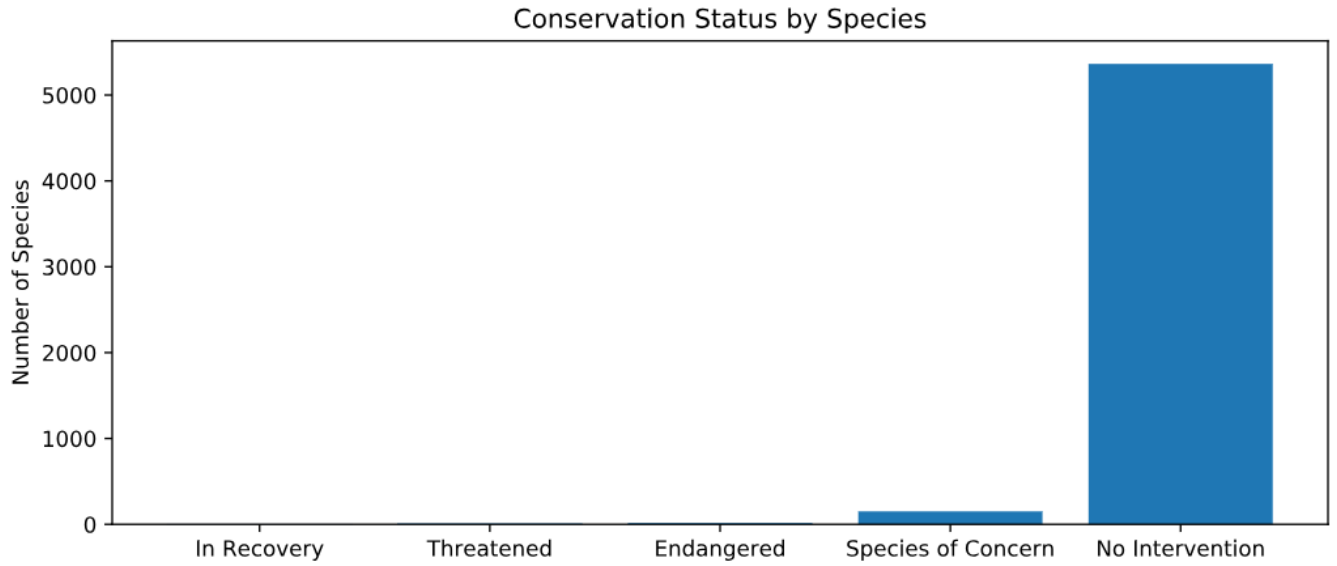


Below presented a list of categories together with conservation status in 2 groups. Not protected – there are species classified as no intervention. Protected – species with every other statuses.

category	not protected	protected	percent protected
Amphibian	72	7	8.86%
Bird	413	75	15.37%
Fish	115	11	8.73%
Mammal	146	30	17.05%
Nonvascular Plant	328	5	1.50%
Reptile	73	5	6.41%
Vascular Plant	4216	46	1.08%
SUM	5363	179	3.34%

Generally we can say that only a 3.3% of all species are under protection.

Are certain types of species more likely to be endangered?

01

Compared to previous data with the use of chi-square test.

02

Based on calculation we can be 95% sure that there is a difference between protected mammals and reptile.

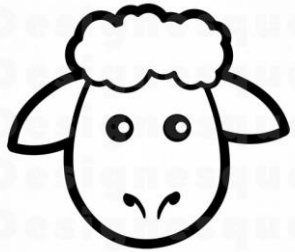
03

It brings us the conclusion that some species are more endangered than the others.

04

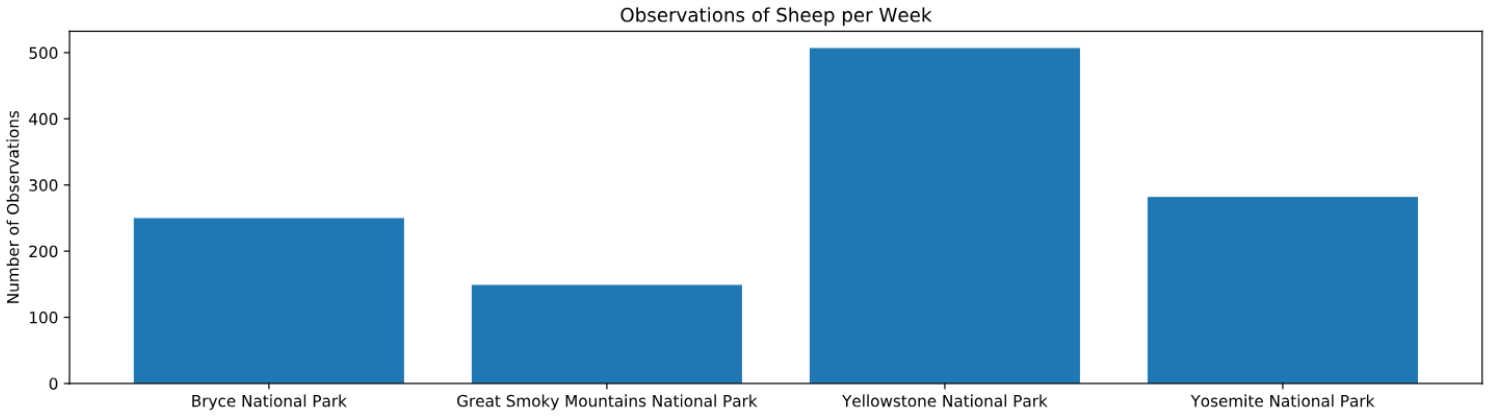
Conservationists should pay attention not only to mammals and birds.

Sheep populations



2nd part of the project contain data about animals in several parks. Below presented number of sheep observations made by biologist in particular National parks.

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



Sheep foot and mouth disease

The scientists want to know how many sheep they need to observe to have 90% of confidence that the result can be transformed to all population.

The baseline is a 15% occurrence of foot and mouth disease in sheep at Bryce National Park.

The scientists want to be sure of >5% drop in observed cases of the disease in Yellowstone.

Based on the sheep population in Bryce National Park calculated that in Yellowstone biologists needs to observe at least 870 sheep to be sure.

Such observations will take approximately one week in Yellowstone.