



# BIODIVERISTY CAPSTONE PROJECT - INVESTIGATING PROTECTED SPECIES

By Srikandarajah  
Nallaiwickreman

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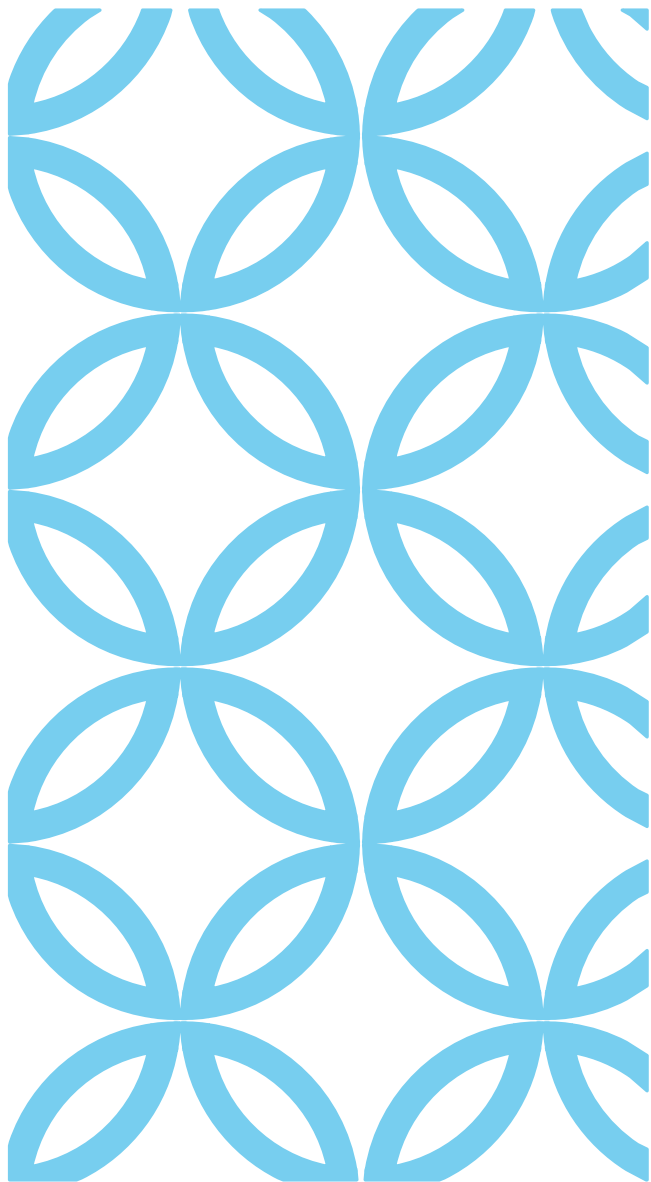
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## SPECIES INFO

# SPECIES INFO - I

- ❑ Number of different species in National parks is 5541
- ❑ Different categories of species are : Mammal, Bird, Reptile, Amphibian, Fish, Vascular Plant, Nonvascular Plant
- ❑ There are four conservation statuses: Species of Concern, Endangered, Threatened, In Recovery

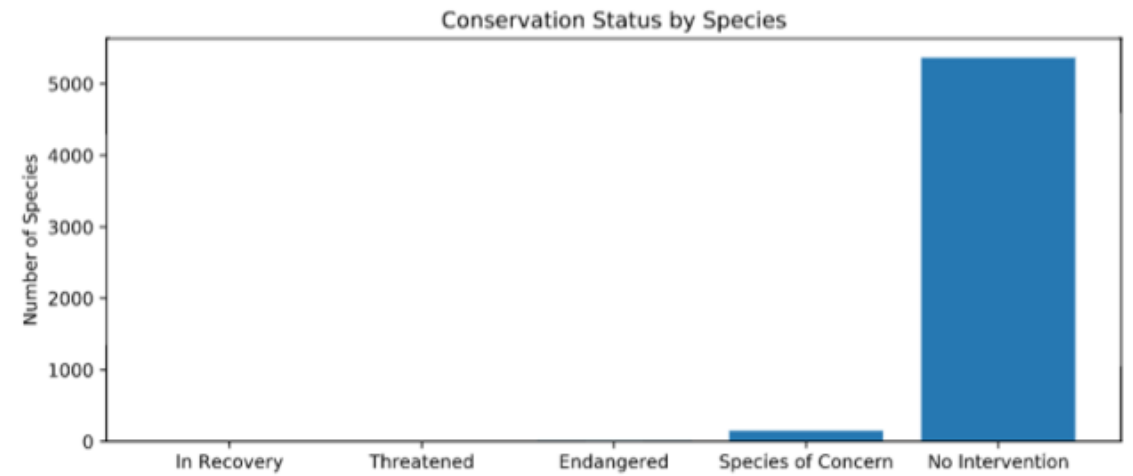
# SPECIES INFO - II

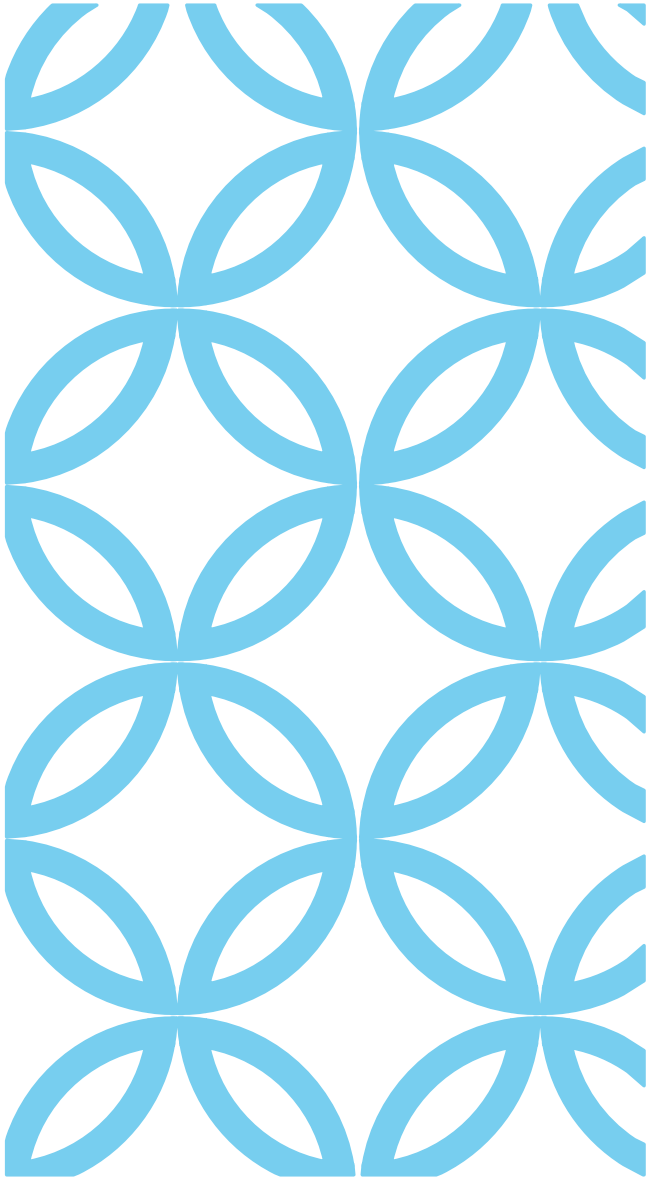
☐ In the below table where scientific names of species grouped into their conservation status

Conservation Status	Scientific Name
Endangered	15
In Recovery	4
Species of Concern	151
Threatened	10
No Intervention	5363

# SPECIES INFO - III

## Conservation Status by Species





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## ENDANGERED STATUS OF DIFFERENT SPECIES



# ENDANGERED STATUS OF DIFFERENT SPECIES - I

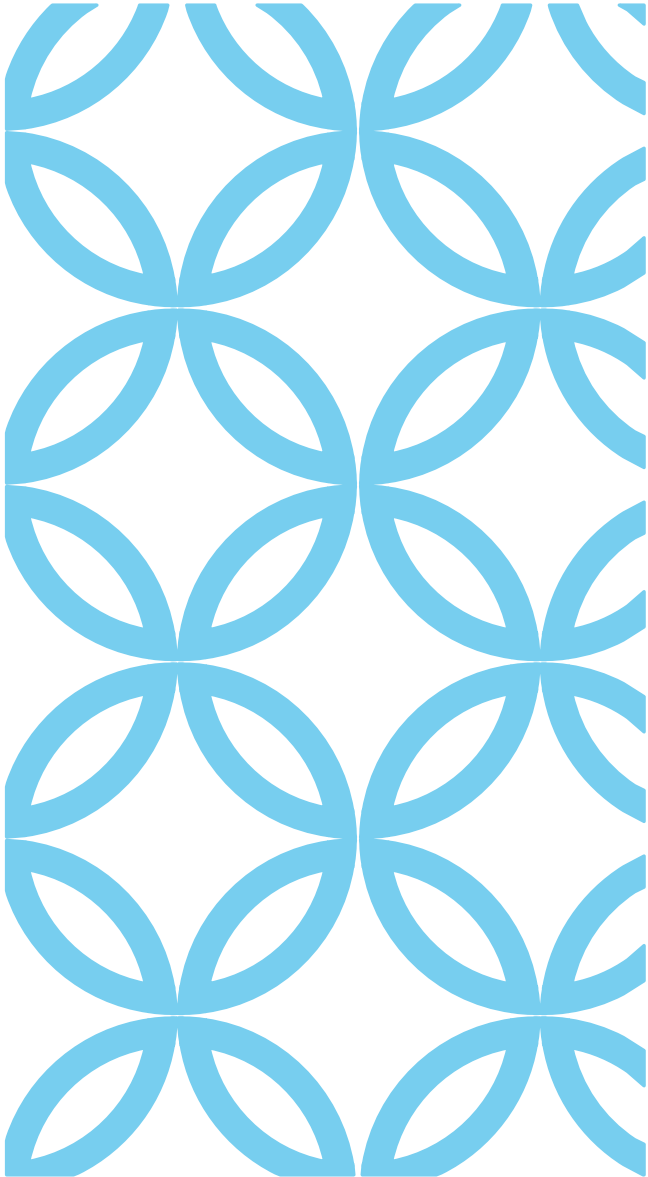
☐ In the below table category of species grouped into their endangered status

Category	Not Protected	Protected	Percentage of Protected Species
Amphibian	72	7	0.088608
Bird	413	75	0.153689
Fish	115	11	0.087302
Mammal	146	30	0.170455
Nonvascular Plant	328	5	0.015015
Reptile	73	5	0.064103
Vascular Plant	4216	46	0.010793



# ENDANGERED STATUS OF DIFFERENT SPECIES - II

- ❑ From the table, only Bird and Mammal have higher percentage of protection above 0.15 percent
- ❑ Species like Amphibian, Fish and Reptile are less than 0.10 percent protected.
- ❑ Nonvascular Plant and Vascular Plant have less than 0.02 percent protected.

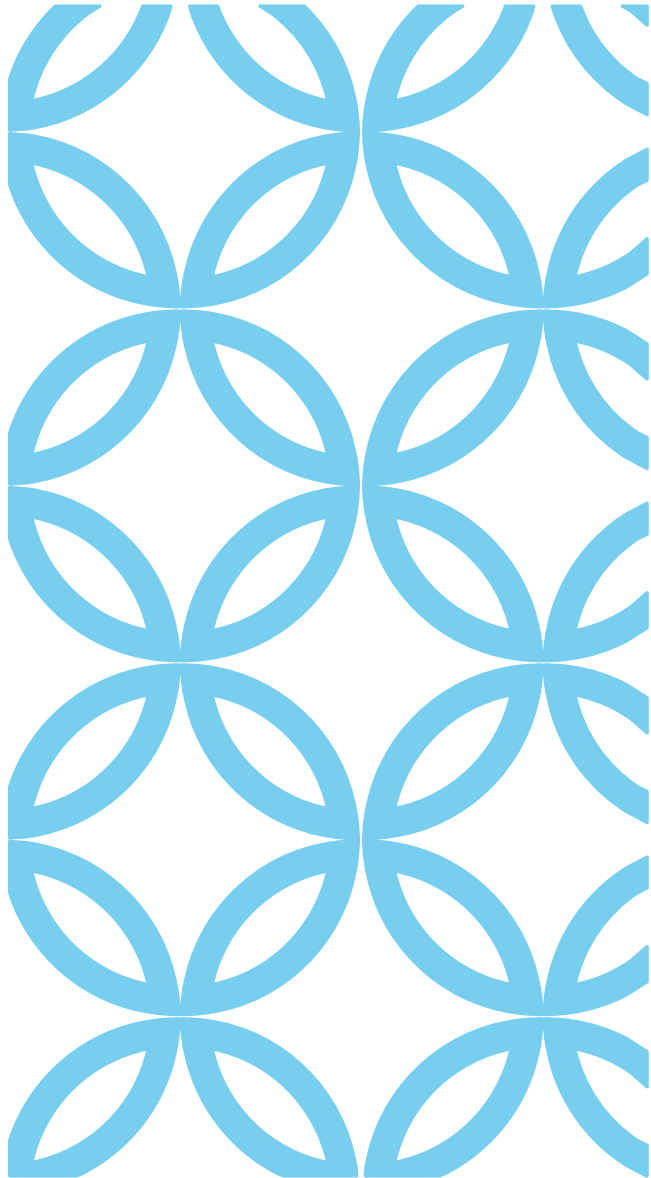


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## RECOMMENDATION FOR COSERVATIONISTS

# RECOMMENDATION FOR CONSERVATIONISTS

- ❑ From the Chi Square Test, P Value is less than 0.05, so there is a significant difference in endangered status between Reptiles and Mammals. Reptiles are more likely to be endangered than Mammals. They need more protection or their species are in grave danger of extinction.
- ❑ Using Chi Square Test, P Value is higher than 0.05, we can reject the Null Hypothesis. Hence the conclusion is both Mammals and Bird are equally endangered. Conservationists need to preserve these species to sustain the wildlife for a longer period of time.



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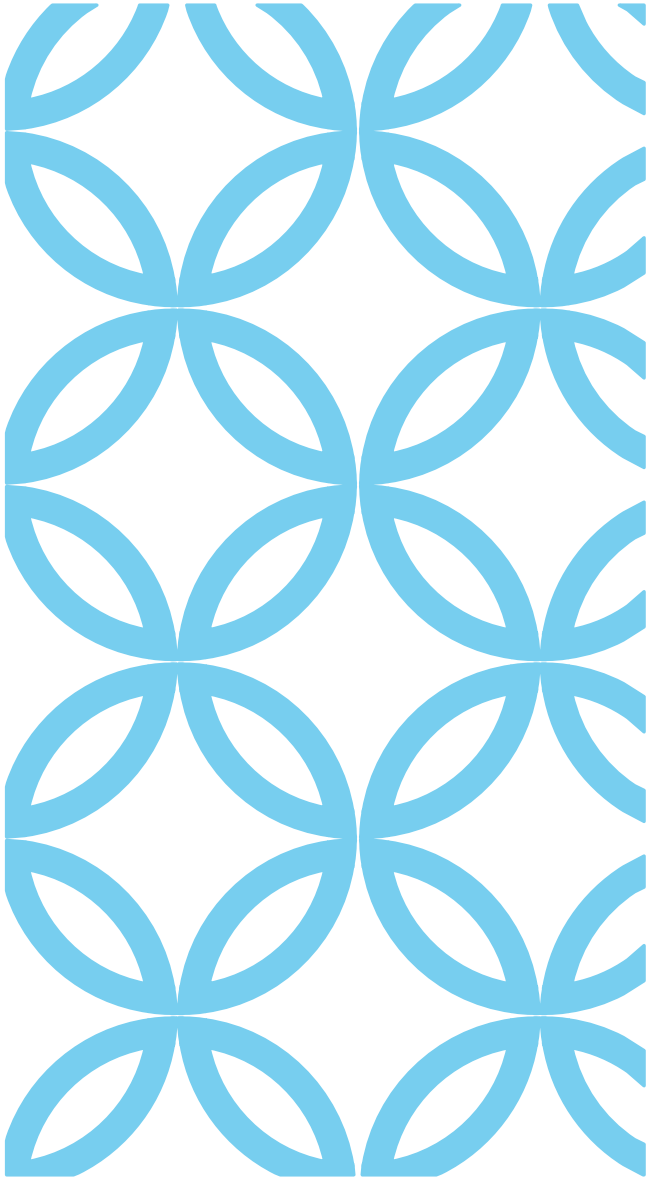
## FOOT & MOUTH STUDY

# FOOT & MOUTH STUDY

- ❑ Park Rangers at Yellow National Park is running a program to reduce foot and mouth disease. Scientists wanted to check if the program is working or not.
- ❑ To determine the sample size for this study, it was recorded that 15% of sheep at Bryce National Park have foot and mouth disease. This is our baseline conversion rate.
- ❑ Minimum detectable effort is 33.3% and Statistical significance is 90%
- ❑ By applying above values in the sample size calculator, the required sample size is 870 sheep.

# FOOT & MOUTH STUDY

- ❑ Using the sample size, it will take approximately 2 weeks of observation in Yellowstone to see that many sheep.
- ❑ In Bryce National park, it requires approximately 4 weeks of observation.

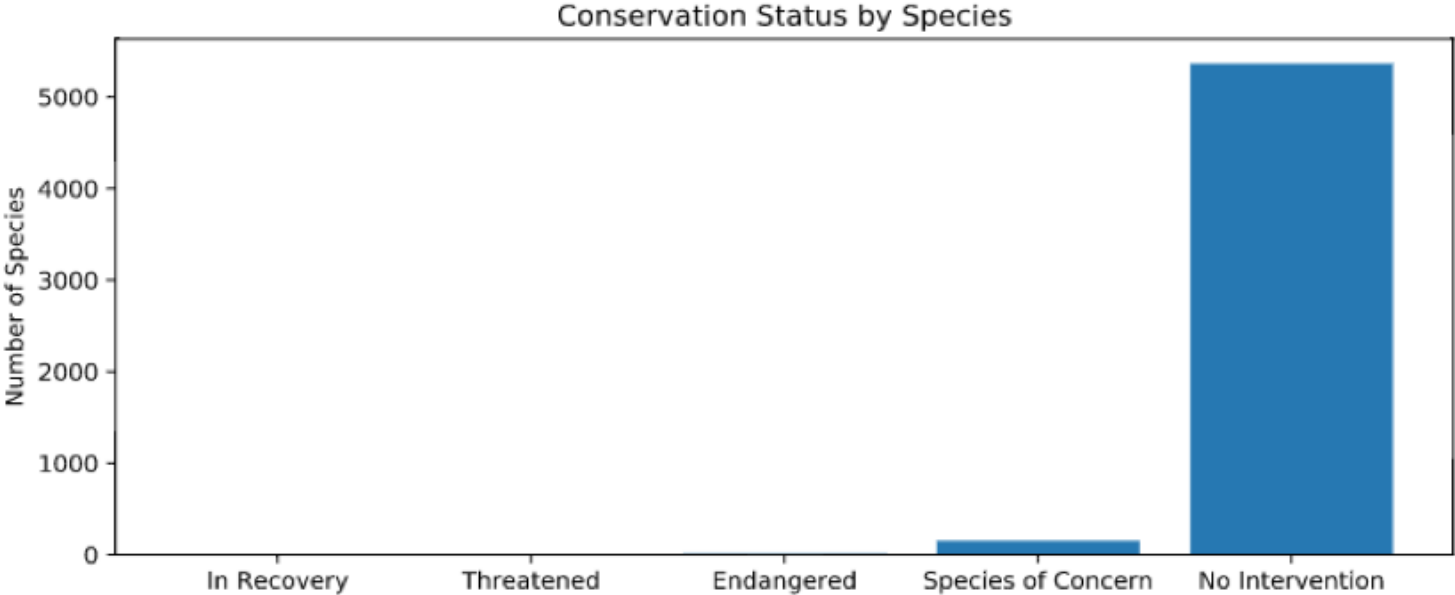


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# GRAPHS

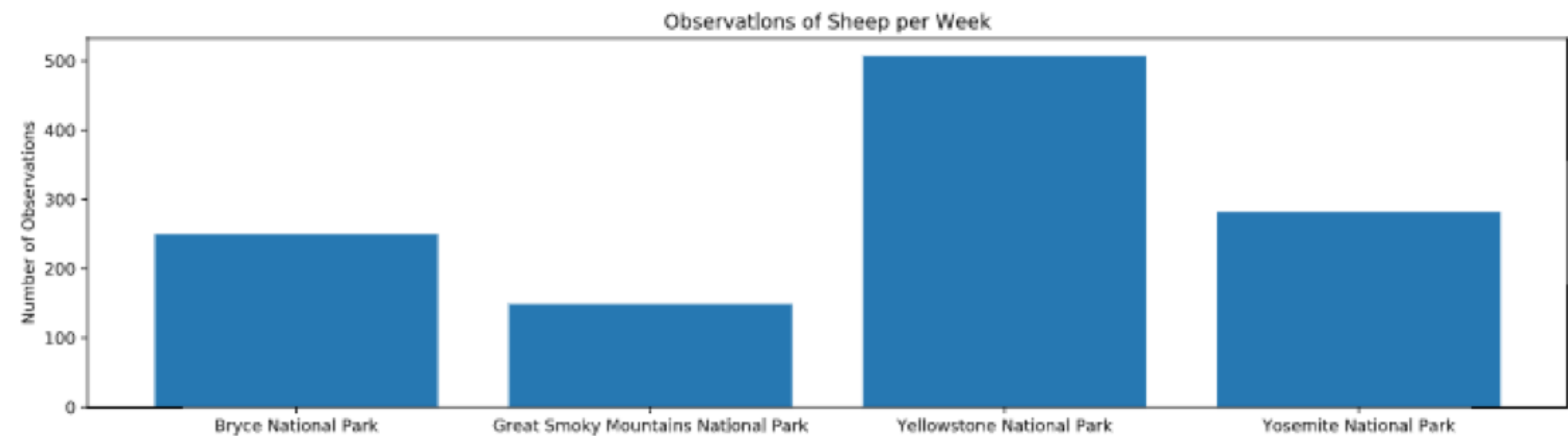


# CONSERVATION STATUS OF SPECIES



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# OBSERVATIONS OF SHEEP PER WEEK



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