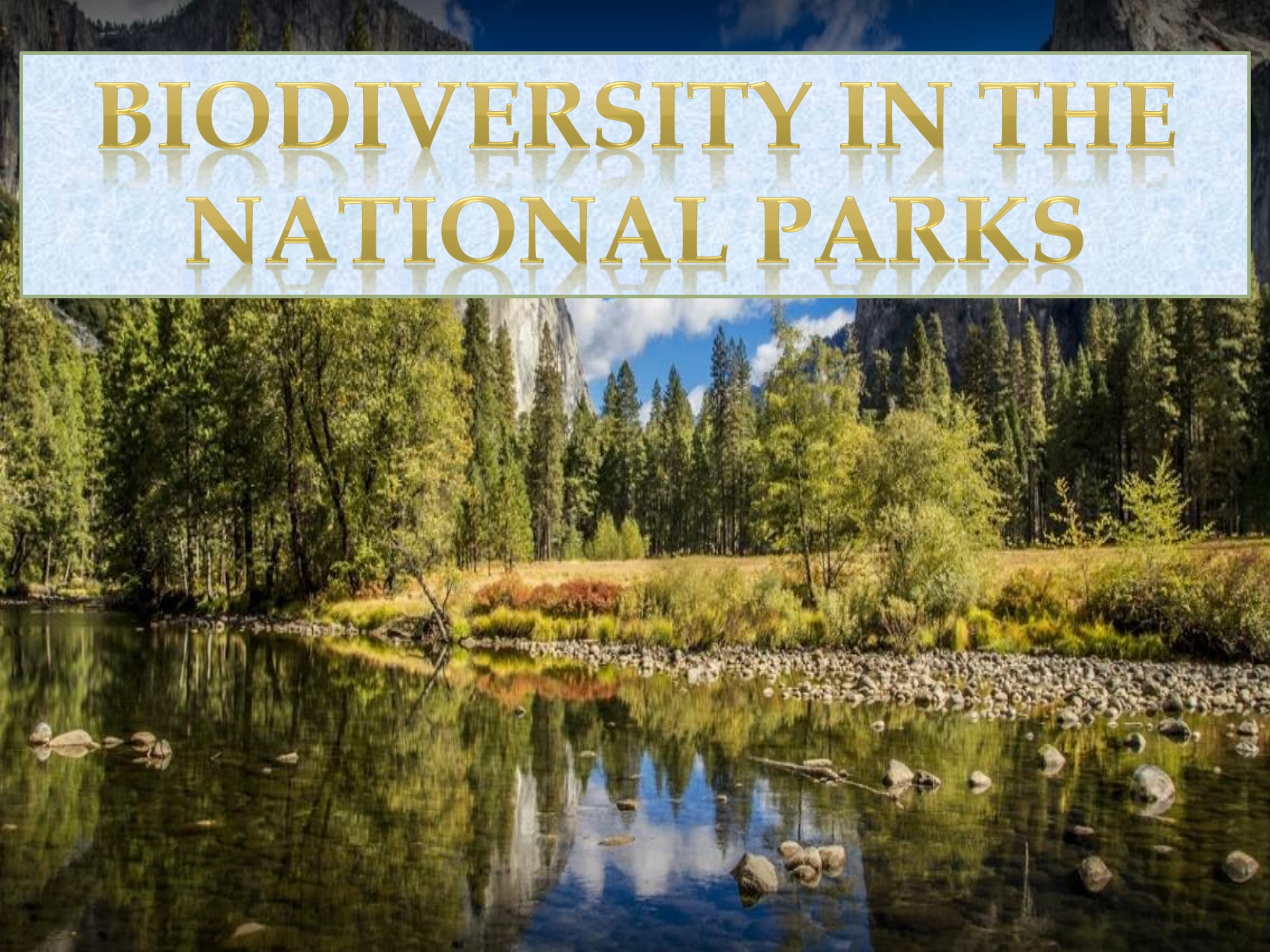
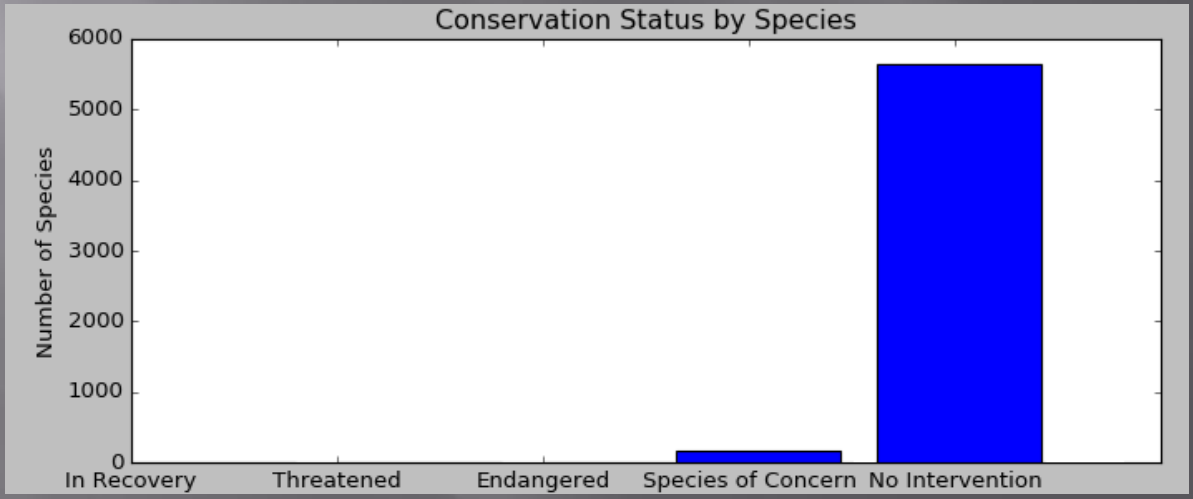
BIODIVERSITY IN THE NATIONAL PARKS



Species At Out National Parks

- Thousands of species co-exist at our national parks
- The vast majority are plants
- Over 500 different species of animals

- Most species need no intervention, but almost 200 different species need some sort of protection.



Endangered Status

The species in the need of the most protection by % are mammals

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%

Mammal and Birds

While there are a higher % of endangered mammals than Birds our chi squared tests showed the difference was not significant. (PVAL = 0.68)

	Protected	Not Protected
Mammal	30	146
Bird	75	413

Mammal and Reptiles

There are a higher % of endangered mammals than Reptiles and our chi squared tests showed the difference **was significant**. (PVAL = 0.038)

	Protected	Not Protected
Mammal	30	146
Reptile	5	73

Conservation Reccomendation

- Resources for conservation should focus on the species categories with highest % of species that need protection.

Largest Protection Needs

- The species in most need of protection are Mammals and Birds.

Smallest Protection Needs

- The species in least need of protection are Nonvascular Plants and Vascular Plants

Foot and Mouth Disease Study

Foot and Mouth Baseline rate = 15%

Bryce National Park show foot and mouth disease among their sheep at a rate of 15%

Minimum Detectable Effect = 33%

Park rangers at Yellowstone National Park have been running a program to reduce the rate of foot and mouth disease at that park. The scientists want to test whether or not this program is working. They want to be able to detect reductions of at least 5 percentage point. From 15% to 10% in the sheep population.

Significance Required = 90%

Foot and Mouth Sample Size

Current Rate of Foot and Mouth

Baseline Conversion Rate

15 %

Change Needed

Minimum Detectable Effect

33 %

Significance Needed

Statistical Significance

90%

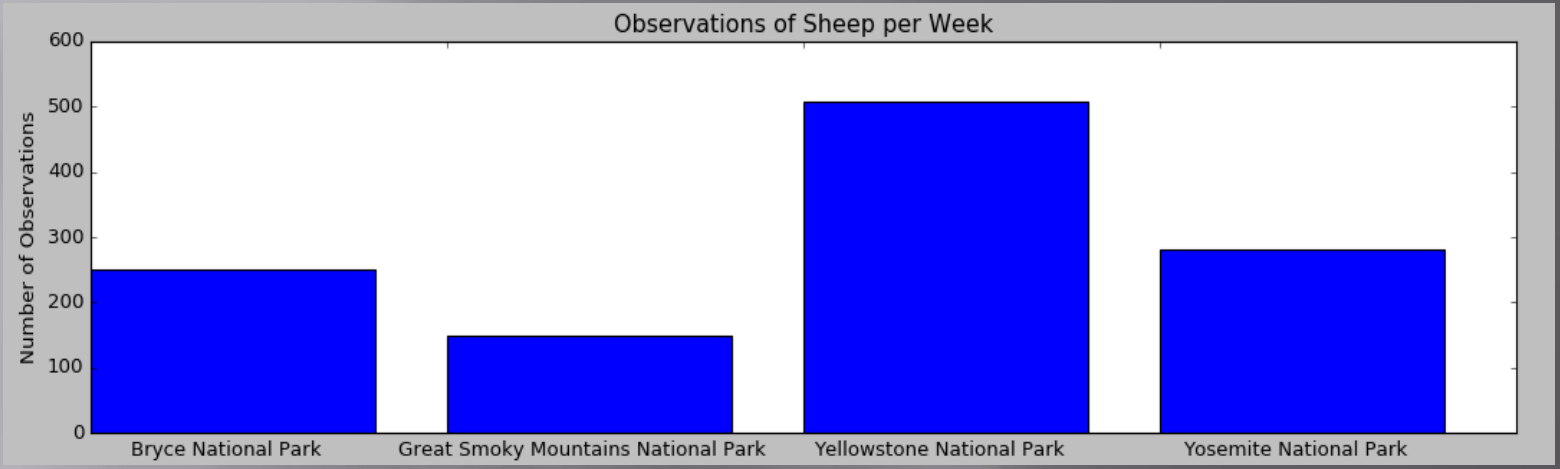
CALCULATED SAMPLE SIZE

Sample Size per Variation

520

Observation Needed

To complete our study we will need to observe 520 sheep at both Bryce National Park and Yellowstone



Weekly Observations

- **Bryce National Park averages 250 Observations per week**
- **Yellowstone National Park averages 507 Observations per week**

Time Needed to Gather Sample Size

- **15 days (2.08 weeks) at Bryce National Park**
- **8 days (1.02 weeks) at Yellowstone National Park**