

Biodiversity for National Parks



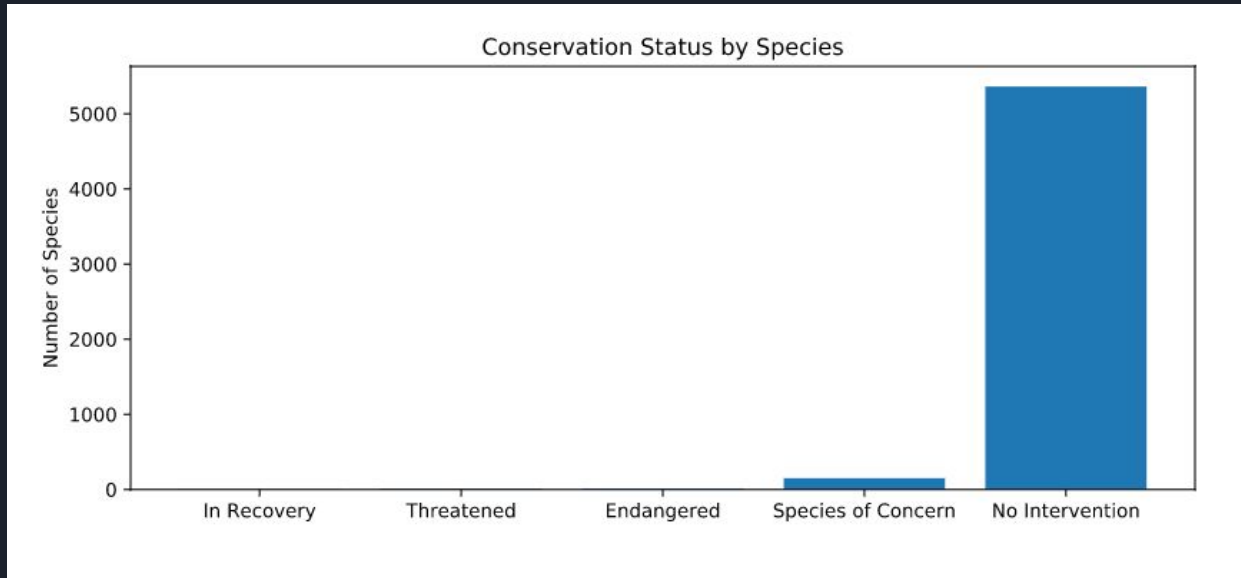


Species Data

- The data provided includes the scientific and common names of 5541 species.
- These species are categorized by conservation status, and by species type:
 - Species types: Mammals, Birds, Reptiles, Amphibians, Fish, Vascular Plants, and Non-Vascular Plants
 - Protected statuses: Species of Concern, Endangered, Threatened, and In Recovery
- Most of the species listed are vascular plants, and most are not in one of the protected statuses

Conservation Status

This graph represents the number of species in each conservation status:



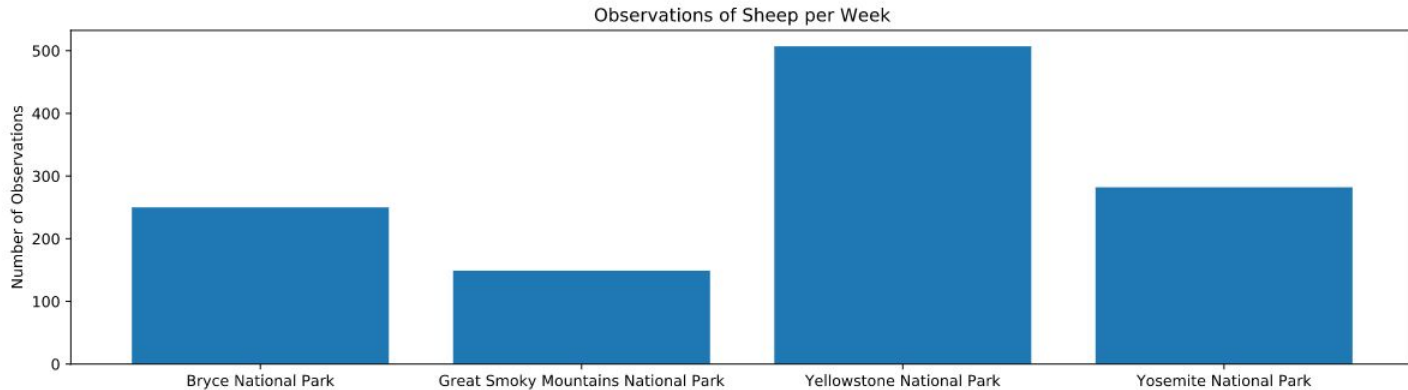


Significance Calculations

- A chi-squared test for significance was done to determine whether certain types of species were more likely to be endangered:
 - Mammals are the most likely to be endangered, at a rate of 17%
 - Birds were the next most likely to be endangered, at a rate of 15%
- The test determined that the difference between mammals and birds was not statistically significant, and probably due to chance.
- The difference between mammals (17%) and reptiles (6%) was shown to be significant.

Foot and Mouth Reduction Effort

The sample size for the foot & mouth disease study was determined based on observation data of sheep populations in four national parks:





Sample Size Determination

- The baseline rate was determined from previous year's data, showing that 15% of sheep at Bryce Canyon have foot & mouth disease.
- The minimum detectable effect was calculated at 33.3%.
- Based on the default statistical significance of 90%, the minimum sample size for observation is 510 sheep.
- The observations to gather data for this study would take:
 - About a week at Yellowstone
 - Just over two weeks at Bryce Canyon
 - Three and a half weeks at Great Smoky Mountains
 - Under two weeks at Yosemite



Endangered Species Recommendation

- The biggest areas of concern for conservationists should be mammals and birds.
- Vascular plants are the lowest priority for conservation, with only 1% of species in a protected status.
- Great progress has been made with the following species, which are now in recovery:
 - The bald eagle, the gray wolf, the peregrine falcon, the brown pelican
 - Can the same conservation methods used on these species be applied to other endangered birds and mammals?