Biodiversity in National Parks

A Capstone Project from Codecademy's Analyzing Data with Python skill-path

By Alexis Morcrette

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Introduction

- Acting as a biodiversity analyst working for the National Parks Service, I’m going to help the Service to analyze some data about species at various national parks

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About the Species Info data

- There are 5,541 different species in the species_info.csv dataset
- Categories of species are: Mammal, Brid, Reptile, Amphibian, Fish, Vascular Plant and Nonvascular Plant
- The different conservation statuses are: N/A, Species of Concern, Endangered, Threatened and In Recovery

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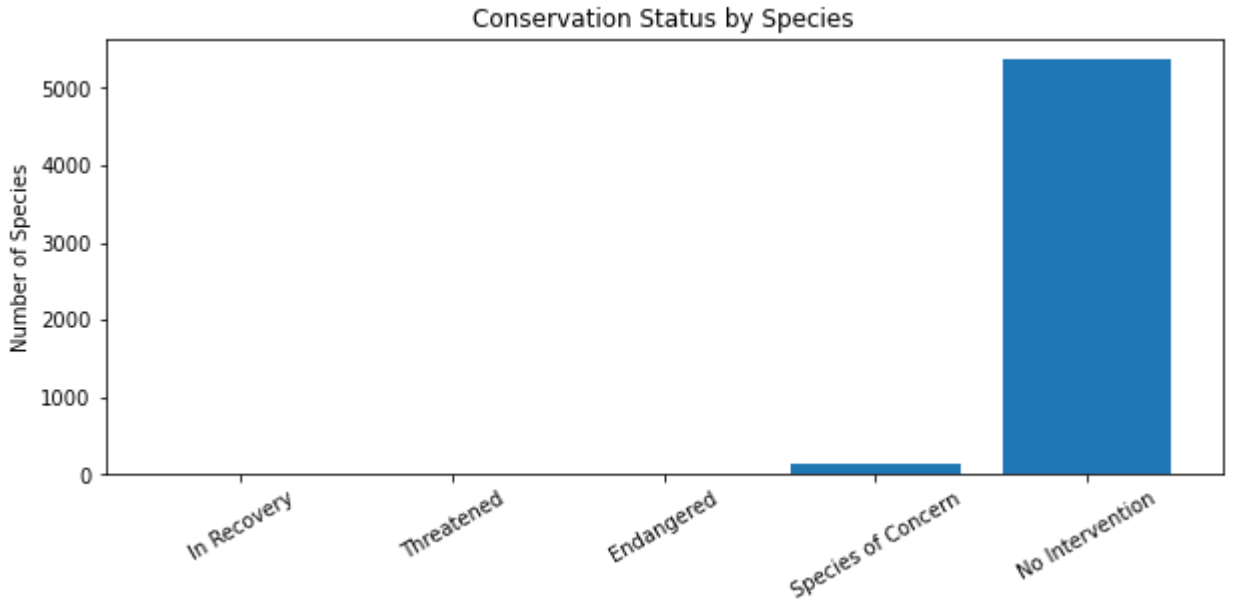
Some analysis

- Here’s how many species have each of the conservation statuses

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



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Are certain types of species more likely to be endangered?

Category	% Protected
Amphibian	08.8
Bird	15.4
Fish	8.7
Mammal	17.0
Nonvascular Plant	1.5
Reptile	6.4
Vascular Plant	1.1

- The p value for a chi squared test on the difference between percentage protected of mammals and birds is 0.69: the difference **isn't significant**
- The p value for a chi squared test on the difference between percentage protected of reptiles and mammals is 0.04: the difference **is significant**

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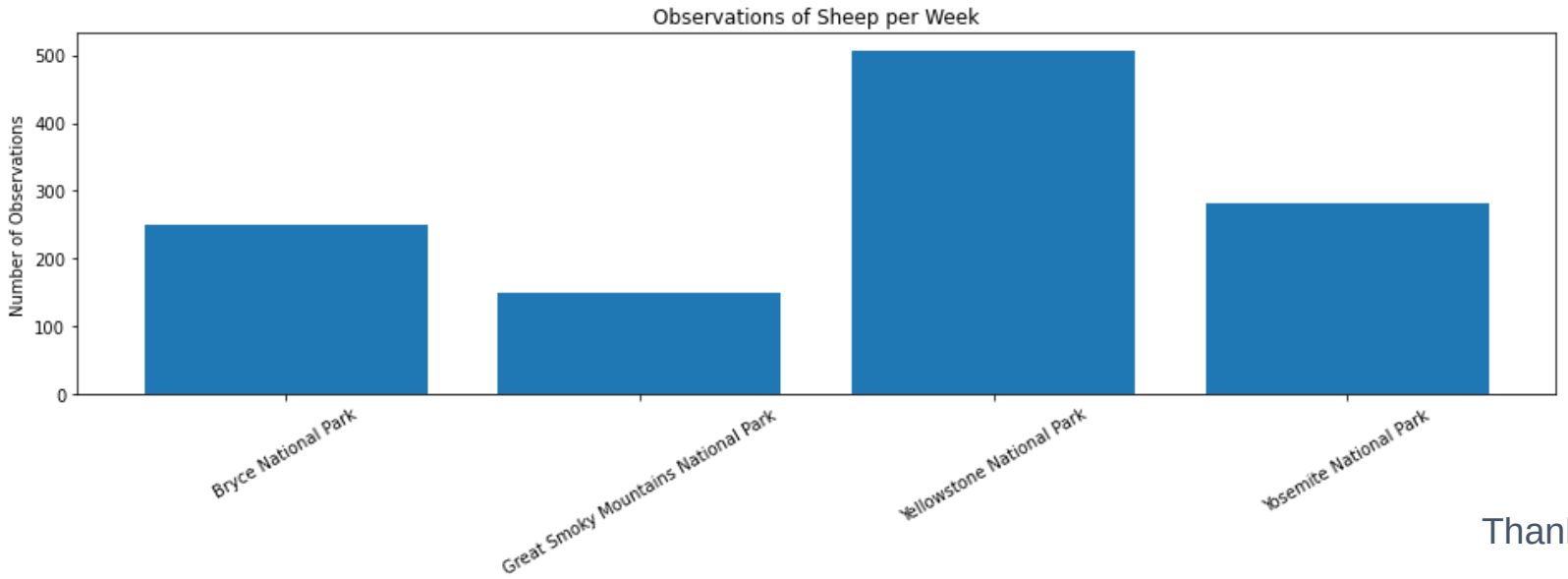
Sheep observations

- Conservationists have been recording sightings of different species at several national parks for the past 7 days, data in observations.csv
- Some scientists are studying the number of sheep sightings at different national parks
- Here is the total number of sheep observations (across all three species of sheep) that were made at each national park



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Testing the disease reduction program

- Our scientists know that 15% of sheep at Bryce National Park have foot and mouth disease.
- 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 points.
- For instance, if 10% of sheep in Yellowstone have foot and mouth disease, they'd like to be able to know this, with confidence.
- **This would require a sample size of 870, and this would need 4 weeks of observations at Bryce National Park to observe enough sheep (3.48 rounded up), and 2 weeks in Yellowstone National Park (1.72 rounded up**

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