Biodiversity Project

CodeAcademy Intro to Data Analysis Capstone

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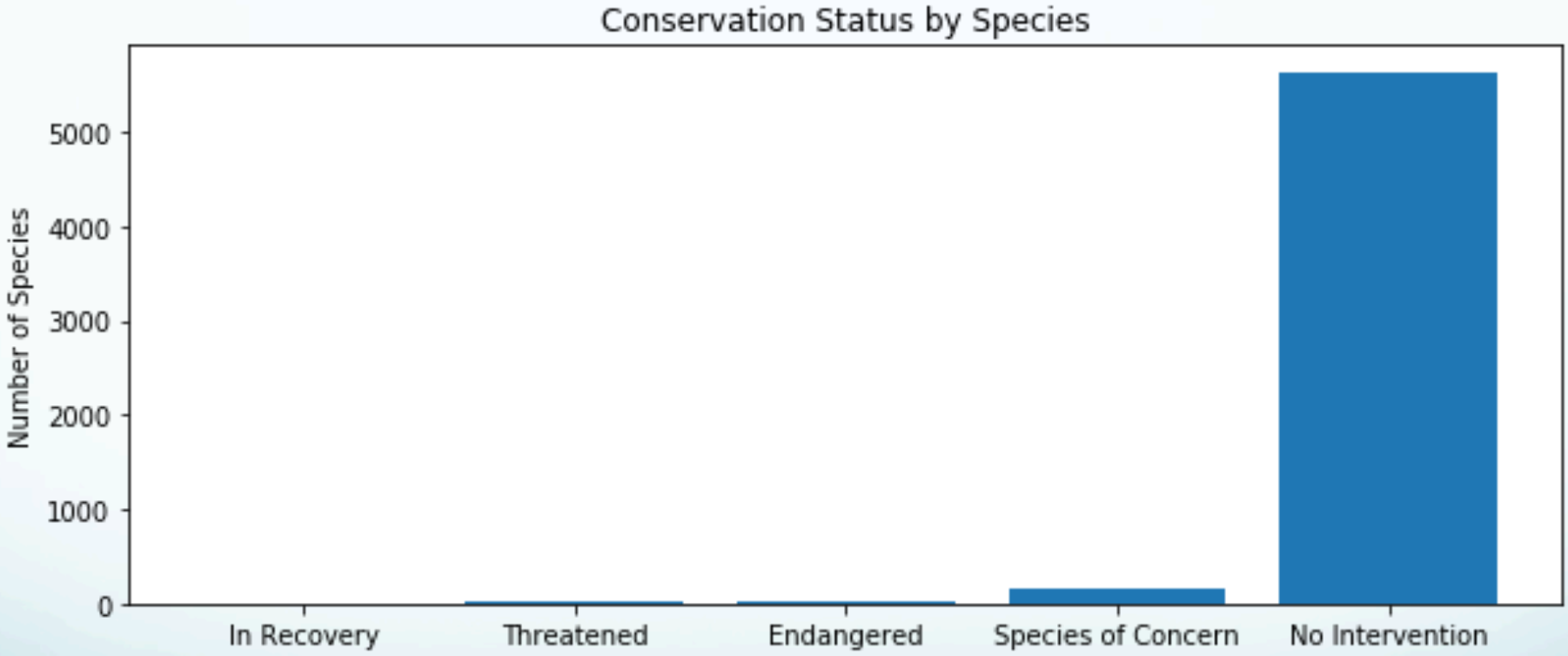
Observations: species_info.csv

- Many species have multiple common names
- The number of species in recovery is pitiful
- There are far more vascular plants than vascular plants
- Birds and mammals are the most susceptible to negative environmental pressures
- “Bos bison” is one s away from being the best scientific name for a species

Significance Calculations for Endangered Status

- Tested to see if a species holds status
- Used groupby and pivot to sort species by their category and then count the numbers of protected vs. not protected
- Calculated the percentage of protected species for each category
- Performed a chi square test to compare the relative significance of mammals v. birds and mammals v. reptiles


Conservation Status by Species
Number of Species
5000
4000
3000
2000
1000
0
In Recovery
Threatened
Endangered
Species of Concern
No Intervention

Recommendation for Conservationists

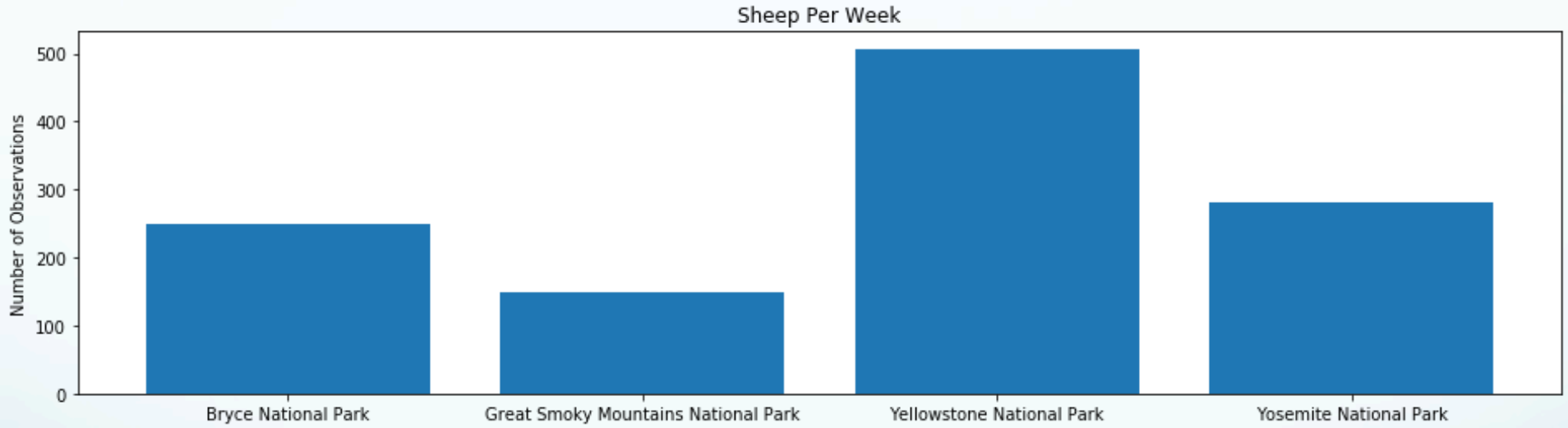
- Focus resources on protecting birds and mammals since they are more likely to be endangered and species are unlikely to end up “in recovery”

Foot & Mouth Disease Sample Size Determination (1)

- Selected sheep species from the species dataframe
- Merged it with observations dataframe to give observations of each sheep species in several national parks
- Calculated the total number of sheep sightings in each national park

Foot & Mouth Disease Sample Size Determination (2)

- Used Optimizely to calculate the number of observed sheep required to test for foot & mouth:
  - Baseline conversion rate = 15%
  - Minimum detectable effect = 5/15*100 = 33%
  - Statistical significance = 90%
  - **Result: 520**
- Divided 520 by the number of sheep observed week week in each park
  - **Result: ~2 weeks at Bryce and ~1 week at Yellowstone**
  - (More precisely: 2.08 and 1.03 weeks, respectively)


Sheep Per Week
Number of Observations
0
100
200
300
400
500
Bryce National Park
Great Smoky Mountains National Park
Yellowstone National Park
Yosemite National Park