Code Academy: Intro to Data Analysis

Capstone Option 2: Biodiversity for the National Parks

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Description of Species_info.csv

- Over 5500 Species
- Very few (~ 3% have ANY conservation status)
  - 83% (151/180) of the species with a conservation status are ”Species of Concern”
  - Endangered species make up about 8% (15/180) of species with a conservation status
- The number of species making a recovery is small in relation to all those with a conservation status and when compared to the entire population, is extremely small.

Significance calculations For endangered status

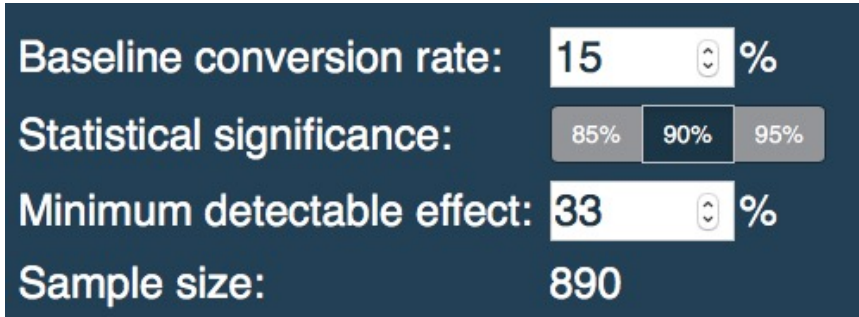
- Chi Squared test shows significant difference in the % of species with a “protected” status between the species “Mammal” and “Reptile”.
  - Chi2 = 0.03835 indicates that with p 0.05 there is a difference between the two populatsions.
- Chi Squared test indicates no significant difference (at p = 0.05) between 17% of Mammal and 15% of Bird. Chi2 = 0.6875 is within the expected normal variation.

Recommendation for conservationists

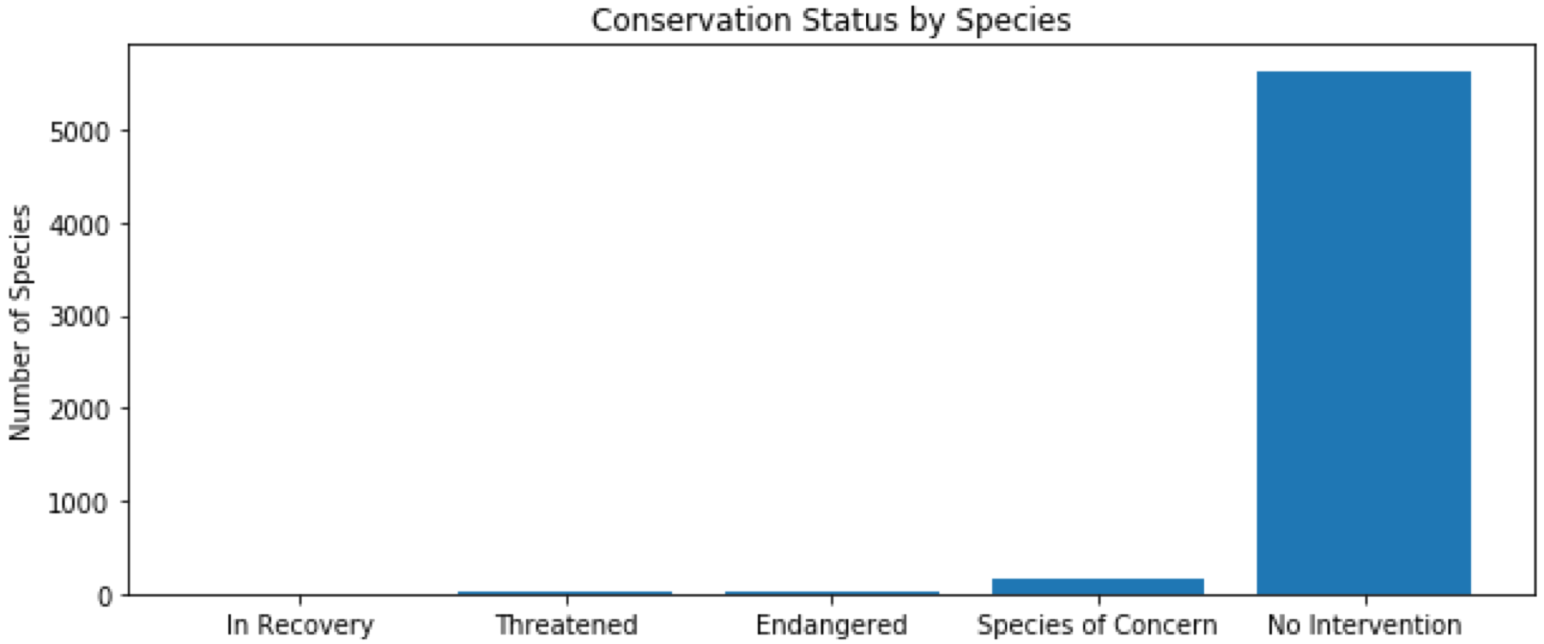
- If no status means that the species has not been evaluated, then need to evaluate more species, since very few have a status.
- Recognize investigator bias in choosing “endangered status” as some groups tend to have more endangered status compared to others
  - Suggest determining the cause of the inter-species variation
- Implement program(s) to increase the number of species that are in recovery and decrease the #’s that are “species of concern”.
- Watch for trends in these #’s over time.

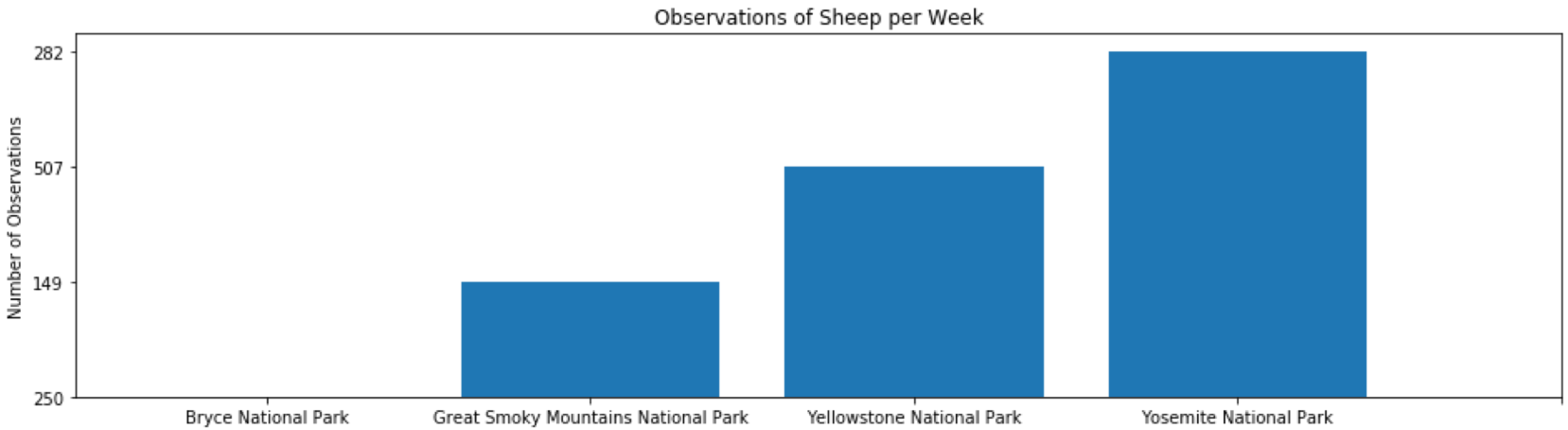
Sample Size Determination – foot & mouth Disease

- Using the calculator provided, determined the appropriate sample size.
  - Important because too large would incur higher cost and time to determine
- Once established sample size, figured out how long it would take the observers at each park to get up to that size, given the # of observations they could make in a week.
- For the Bryce Park it should take about 3 1/2 weeks to obtain 890 samples.



Graphics


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


Observations of Sheep per Week
Number of Observations
282
507
149
250
Bryce National Park
Great Smoky Mountains National Park
Yellowstone National Park
Yosemite National Park