



# Capstone Option 2: Biodiversity For The National Parks

Laura Bettison



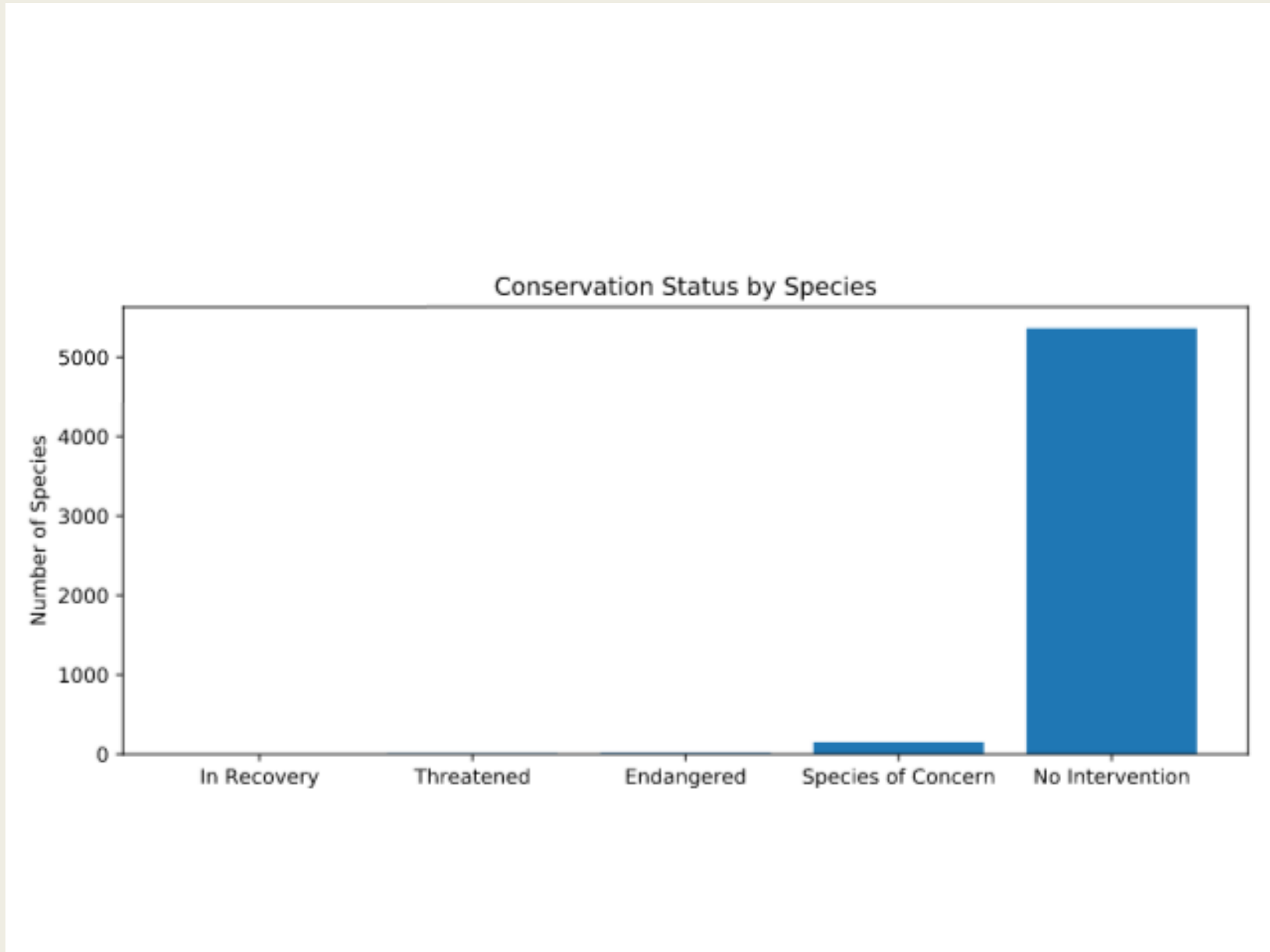
# Intro

- Please note that **‘Completed Code in the Learning Environment’**
- I will add the caveat that I had to use a lot of help from the ‘solution’ button for some elements of the project (not all though!)

# Conservation Statuses

Conservation status	Scientific name
Endangered	15
In Recovery	4
No Intervention	5363
Species of Concern	151
Threatened	10

# Conservation Status By Species



# Protected / Not Protected Comparison

Category	Not Protected	Protected
Amphibian	72	7
Bird	413	75
Fish	115	11
Mammal	146	30
Nonvascular Plant	328	5
Reptile	73	5
Vascular Plant	4216	46

# Chi<sup>2</sup> test - Are certain types of species more likely to be endangered?

- Mammal – bird: pval = 0.68 (2dp)
  - *Not a significant difference*
- Mammal – reptile: pval = 0.04 (2dp)
  - *Significant difference*
- Reptile – bird: pval = 0.05 (2dp)
  - *Not a significant difference*

Suggests focus should be on reptiles, birds then mammals

# Species observations in parks

Scientific name	Park name	Observations
Vicia benghalensis	Great Smoky Mountains National Park	68
Neovison vison	Great Smoky Mountains National Park	77
Prunus subcordata	Yosemite National Park	138
Abutilon theophrasti	Bryce National Park	84
Githopsis specularioides	Great Smoky Mountains National Park	85

# Sheep Data

Scientific Name	Park Name	Observations	Common Names	Conservation Status
Ovis canadensis	Yellowstone National Park	219	Bighorn Sheep	Species of Concern
Ovis canadensis	Bryce National Park	109	Bighorn Sheep	Species of Concern
Ovis canadensis	Yosemite National Park	117	Bighorn Sheep	Species of Concern
Ovis canadensis	Great Smoky Mountains National Park	48	Bighorn Sheep	Species of Concern
Ovis canadensis sierrae	Yellowstone National Park	67	Sierra Nevada Bighorn Sheep	Endangered

Observation: Focus should be put on protecting the endangered Sierra Nevada sheep

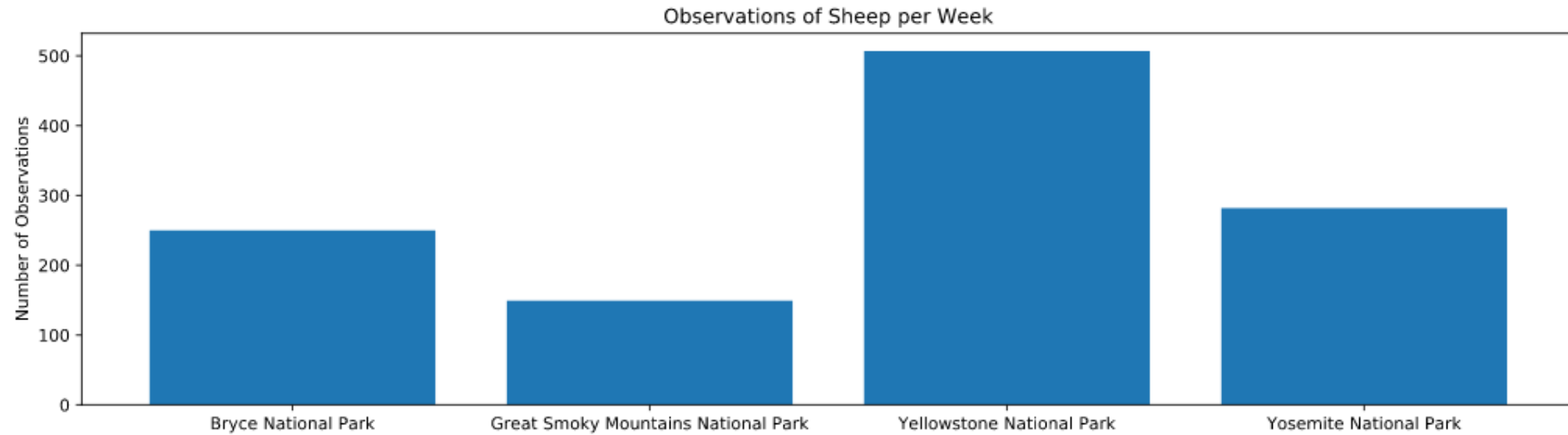
- Do study in Yellowstone



# Total number of sheep observed in each park over the past 7 days

Park Name	Observations
Bryce National Park	250
Great Smoky Mountains National Park	149
Yellowstone National Park	507
Yosemite National Park	282

# Total number of sheep observed in each park over the past 7 days



# Weeks required to collect sample size

Baseline: 15

Minimum Detectable Effect: 33.3%

Min Sample size = **870**

Weeks to observe sample size:

- Yellowstone 1.72 weeks (2dp)
- Bryce weeks 3.48 (2dp)