Endangered Species of National Parks

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CAPSTONE PROJECT FOR CODECADEMY.COM

Purpose of the Study

National Park Service (USA)

Investigating patterns in data on species observations within National Parks:

- Conservation status of endangered species
- Monitoring programme for foot and mouth disease in sheep

Collected Data

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Species observations within four National Parks per week (5824 observations in each park)

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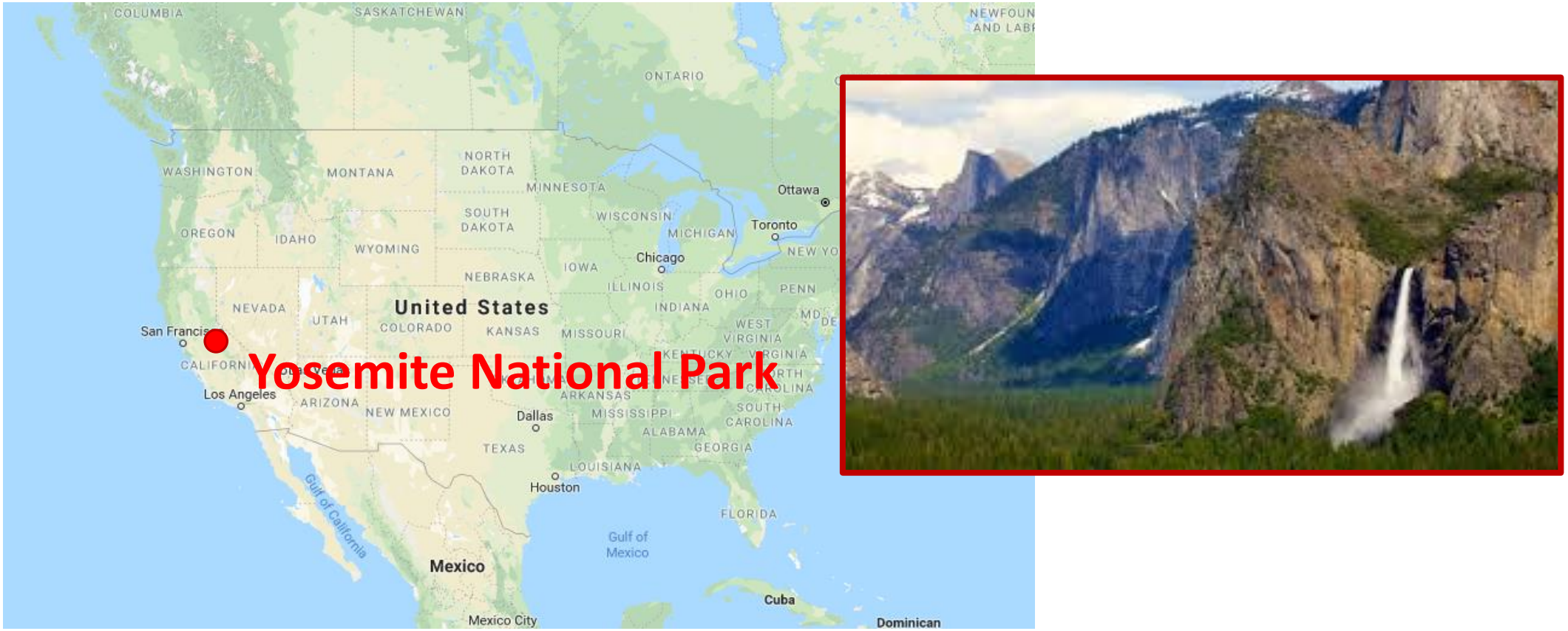


Collected Data

Species observations within four National Parks per week (5824 observations in each park)

Collected Data

Species Categories:

- Amphibians
- Birds
- Fish
- Mammals
- Reptiles
- Nonvascular Plants
- Vascular Plants

Examples of Observed Species

American mink

Field sparrow

Examples of Observed Species

Bluecup

Deergrass

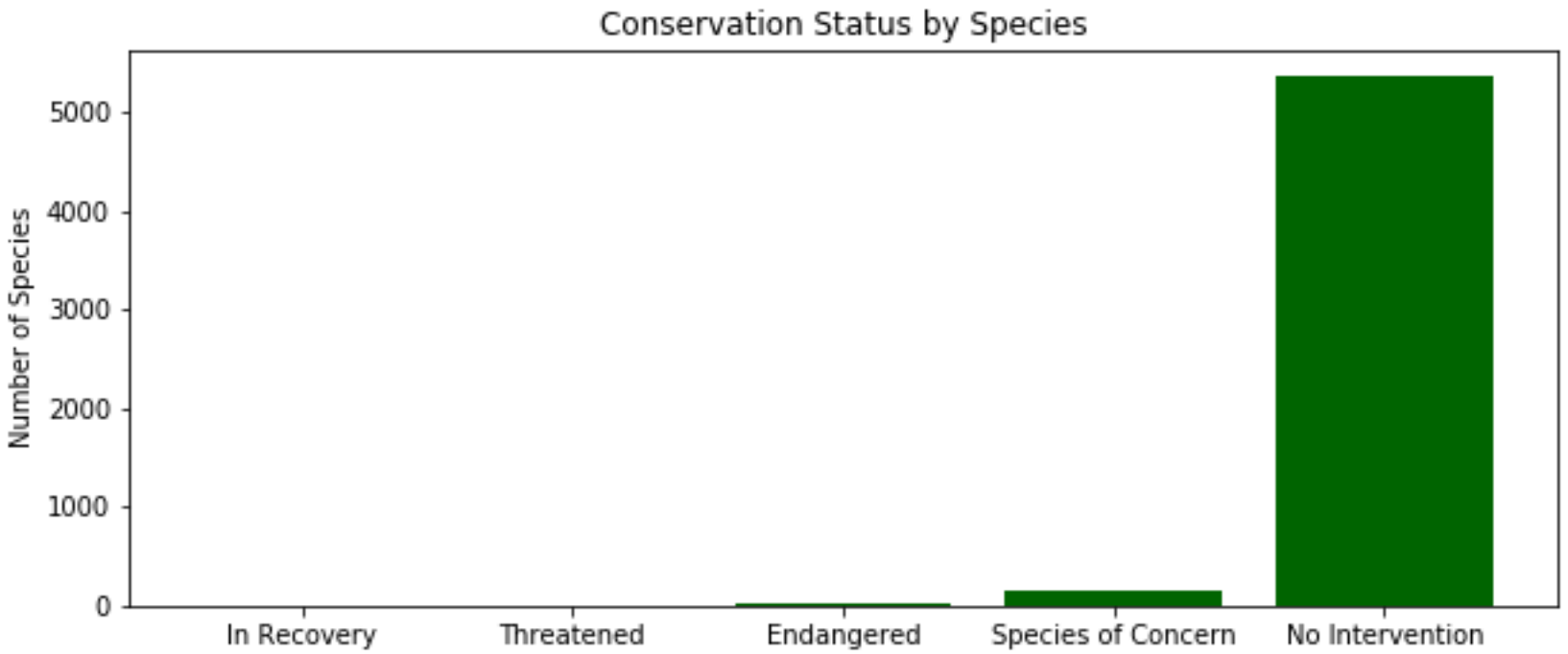
Protected Species

Conservation Status

Conservation Status	Number of Species
Threatened	10
Endangered	16
Species of concern	161
In recovery	4
No intervention	5633

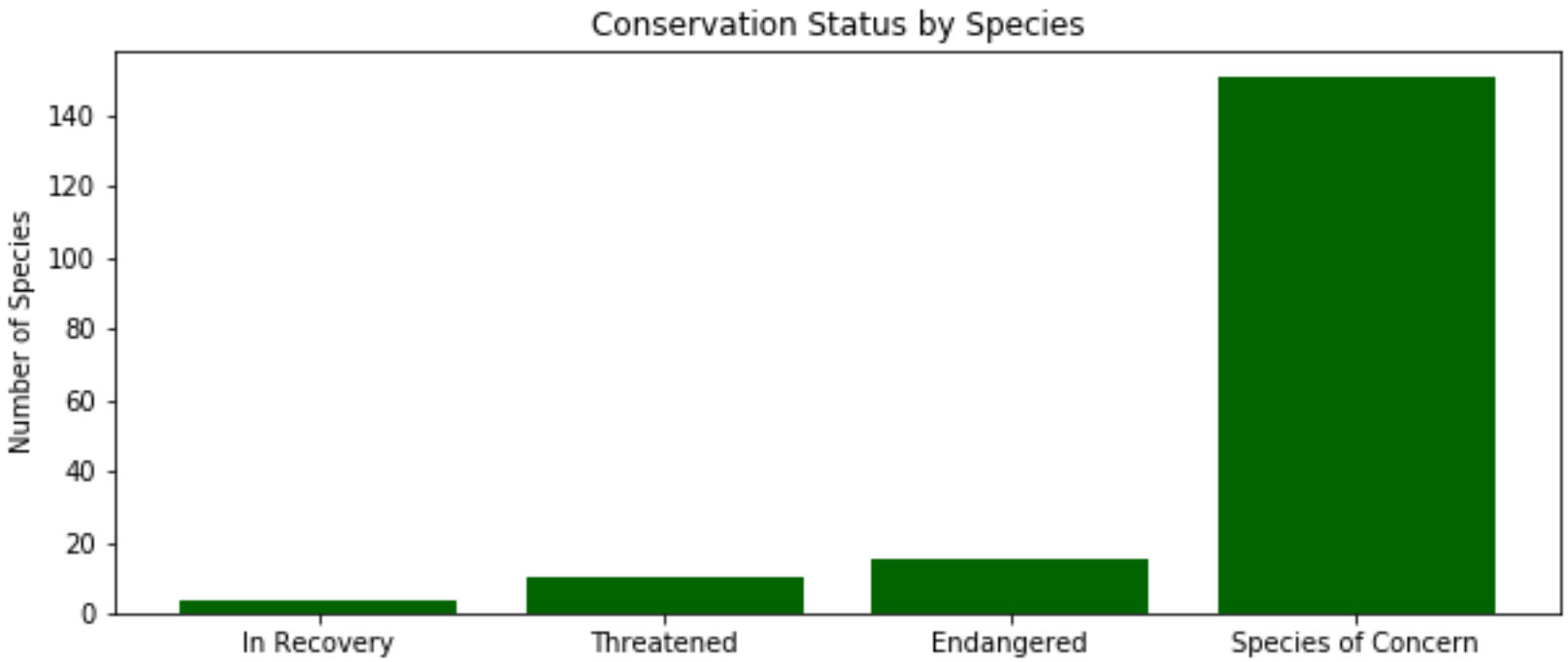
Note: The table includes combined data for all four National Parks

Conservation Status



Note: The chart includes combined data for all four National Parks

Protected Species



Note: The chart includes combined data for all four National Parks

Protected Species

Species Category	Number of “Protected”	Number of “No Intervention”
Amphibian	7	73
Bird	79	442
Fish	11	116
Mammal	38	176
Reptile	5	74
Nonvascular Plant	5	328
Vascular Plant	46	4424

Note: The table includes combined data for all four National Parks

Protected Species

Species Category	Percentage “Protected” (%)
Amphibian	8.8
Bird	15.2
Fish	8.7
Mammal	17.8
Reptile	6.3
Nonvascular Plant	1.5
Vascular Plant	1.0

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χ^2 test: P-value = 0.446
No significant difference between percentage of protected Birds and Mammals

Mammals ARE NOT more likely to require protection than Birds.

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χ^2 test: P-value = 0.021
Significant difference between percentage of protected Mammals and Reptiles

Mammals ARE more likely to require protection than Reptiles.

Recommendations

Species Category	Percentage "Protected" (%)
Amphibian	8.8
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Mammal	17.8
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Nonvascular Plant	1.5
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Mammals and Birds are most likely to require protection:
Conservation required

Sheep at National Parks

Examples of Observed “Sheep”

Ovis aries

Rumex acetosella

Examples of Observed “Sheep”

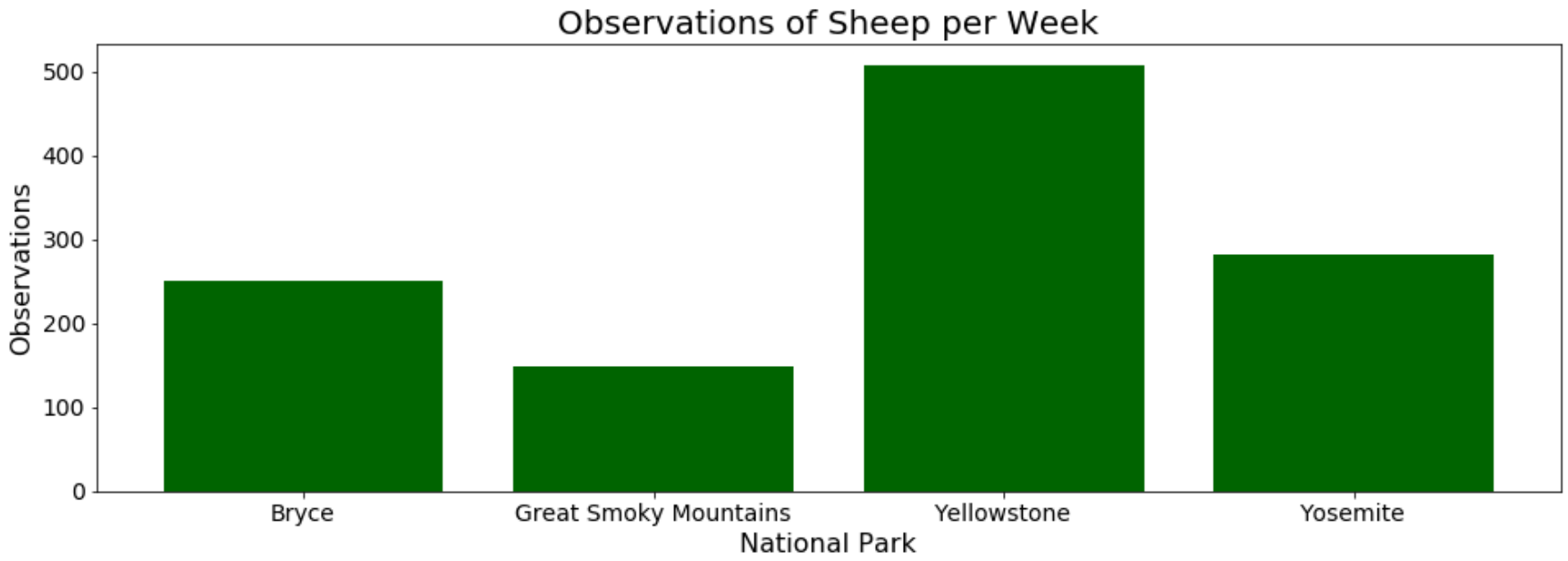
Ovis aries

Rumex acetosella

Sheep Observations

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

Sheep Observations



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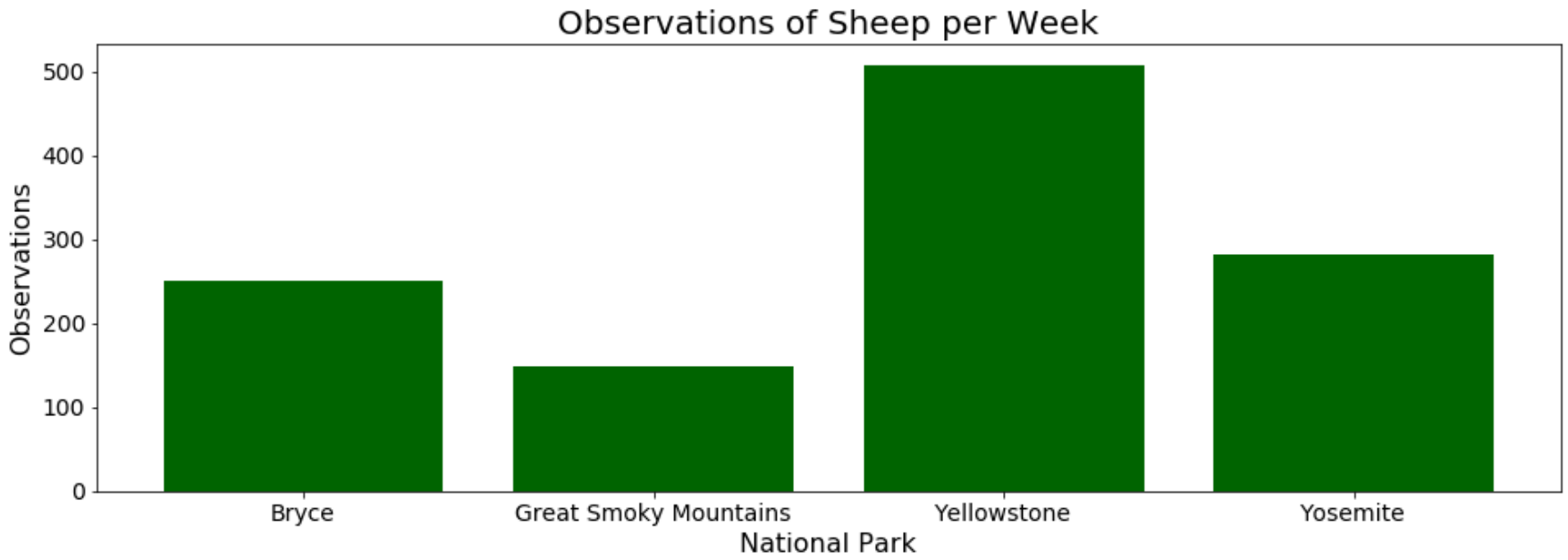

χ^2 test for number of observations (Yellowstone vs Great Smoky Mountains National Park)**:**

P-value = 1.09

No significant difference between number of observed sheep between Yellowstone and Great Smoky Mountains.

Foot and Mouth Disease

Bryce National Park: 15% sheep infected

Yellowstone National Park: Programme for reduction of foot and mouth disease in sheep

Sufficient sample size to test whether the programme is working: Observe 5% decrease (from 15% sheep infected to 10% infected)

Foot and Mouth Disease

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Yellowstone National Park: Programme for reduction of foot and mouth disease in sheep

Sufficient sample size to test whether the programme is working: Observe 5% decrease (from 15% sheep infected to 10% infected)

Required sample size:

- 510 sheep in Bryce National Park
- 890 sheep in Yellowstone National Park

Bryce National Park: 2.04 weeks for sheep observation

Yellowstone National Park: 1.75 weeks for sheep observation

Conclusions

Species Conservation:

- Most species require no intervention (no protection)
- Mammals and Birds require increased conservation efforts

Foot and mouth disease in sheep:

- Sheep observation for approximately 2 weeks in Yellowstone and Bryce National Parks

Thanks for 10 amazing weeks of coding!

FROM PETRA