

Analysis of Species Conservation Status and Disease Rates

Paul Niksch

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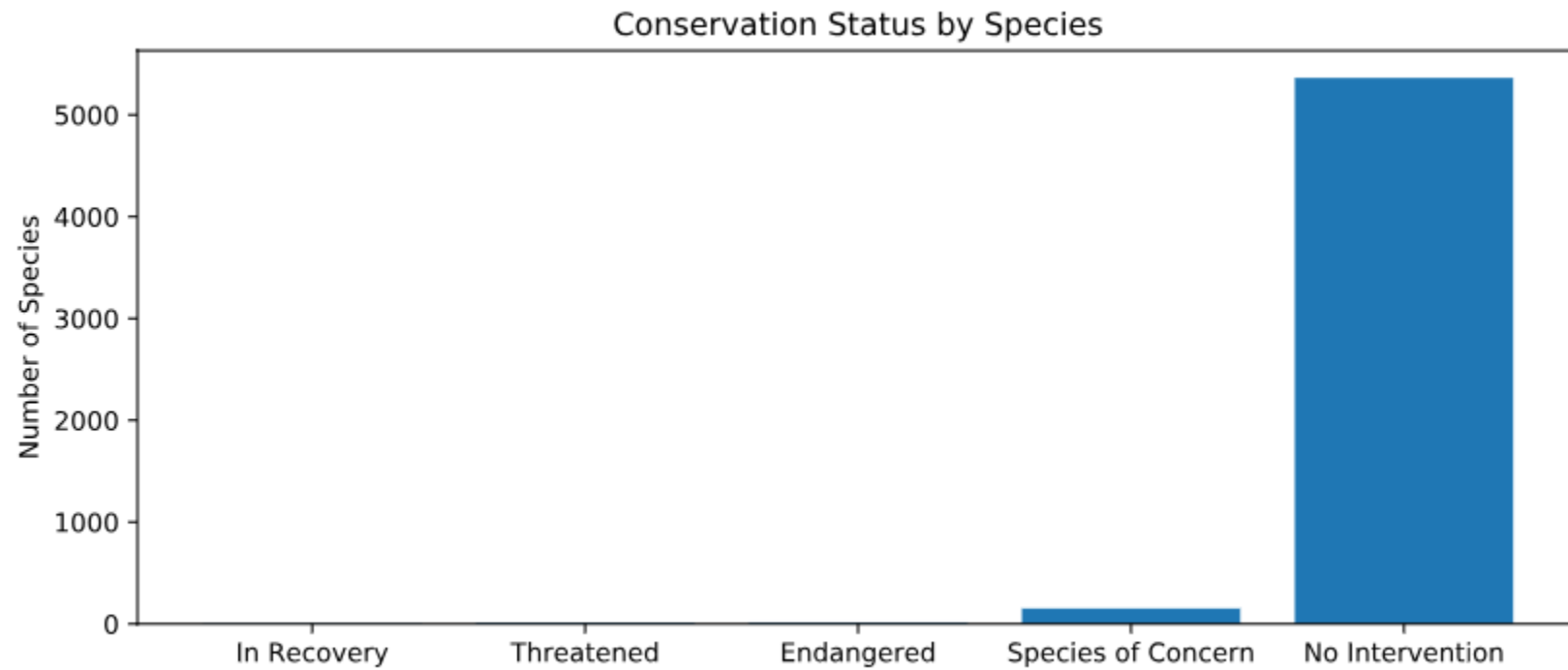
Example of Species Data

category	scientific_name	common_names	conservation_status
Mammal	Clethrionomys gapperi gapperi	Gapper's Red-Backed Vole	nan
Mammal	Bos bison	American Bison, Bison	nan
Mammal	Bos taurus	Aurochs, Aurochs, Domestic Cattle (Feral), Domesticated Cattle	nan
Mammal	Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	nan
Mammal	Cervus elaphus	Wapiti Or Elk	nan
Mammal	Odocoileus virginianus	White-Tailed Deer	nan
Mammal	Sus scrofa	Feral Hog, Wild Pig	nan
Mammal	Canis latrans	Coyote	Species of Concern
Mammal	Canis lupus	Gray Wolf	Endangered
Mammal	Canis rufus	Red Wolf	Endangered

Protection Classification Groupings

conservation_status	scientific_name
Endangered	15
In Recovery	4
No Intervention	5363
Species of Concern	151
Threatened	10

Conservation Status



Percent Protected by Category

category	not_protected	protected	percent_protected
Amphibian	72	7	0.088608
Bird	413	75	0.153689
Fish	115	11	0.087302
Mammal	146	30	0.170455
Nonvascular Plant	328	5	0.015015
Reptile	73	5	0.064103
Vascular Plant	4216	46	0.010793

Significance of Results Using Chi-Squared Test

- Mammal-Bird P Value = 0.69
 - Not significant
- Mammal-Reptile P Value = 0.04
 - Significant
- Results indicated that mammals are more likely to have protected status than reptiles.
- There is no significant likelihood of protected status for mammals compared to birds

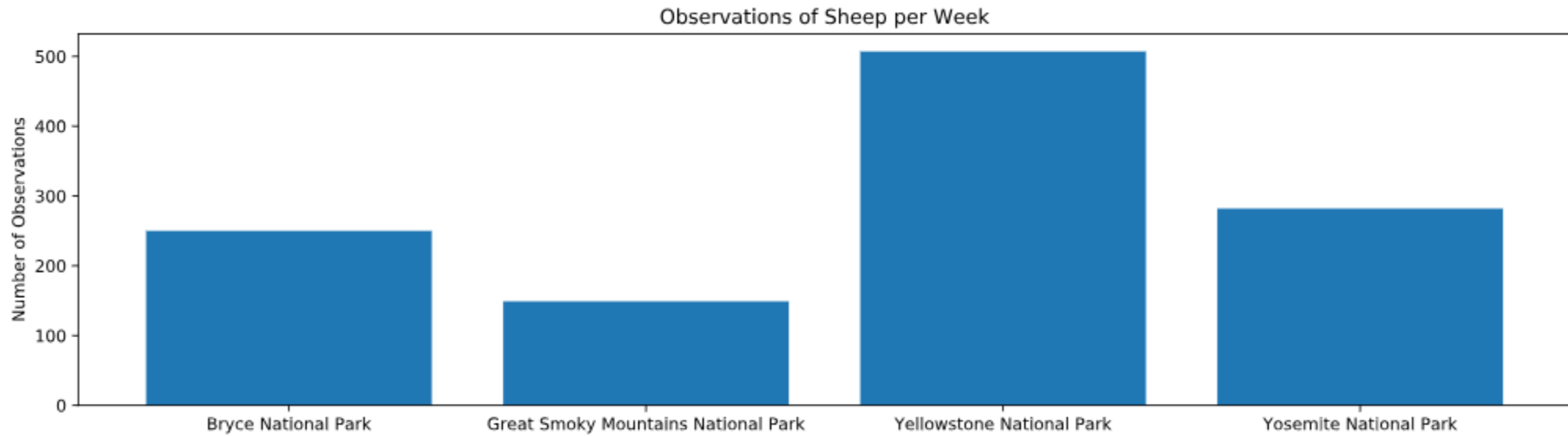
Example of Observation Data

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

Species and Observation Data Combined

category	scientific_name	common_names	conservation_status	is_protected	is_sheep	park_name	observations
Mammal	Clethrionomys gapperi gapperi	Gapper's Red-Backed Vole	No Intervention	FALSE	FALSE	Bryce National Park	130
Mammal	Clethrionomys gapperi gapperi	Gapper's Red-Backed Vole	No Intervention	FALSE	FALSE	Yellowstone National Park	270
Mammal	Clethrionomys gapperi gapperi	Gapper's Red-Backed Vole	No Intervention	FALSE	FALSE	Great Smoky Mountains National Park	98

Observations of Sheep per Week by Park



Detecting Foot and Mouth Disease in Sheep

- Bryce Canyon Reported a 15% rate of disease last year
- Detecting a 5% decrease (33% minimum detectable effect) requires a sample size of 870 Sheep
- At Yellowstone, 507 sheep are observed per week, requiring roughly 2 weeks of observation for significance
- At Bryce, 250 sheep are observed per week, requiring roughly 1 month of observation for significance