



# Foot and Mouth Reduction Effort

**INVESTIGATING PROTECTED SPECIES**



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and  
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# Species Information

Information is based on data from the National Parks Service; the 5823 records are broken into the following columns: "Category, scientific\_name, common\_names, and conservation\_status". Category described the following seven species and their counts: Amphibian 80, Bird 521, Fish 127, Mammal 214, Nonvascular Plant 333, Reptile 79, Vascular Plant 4270. Conservation\_status and counts are as follows: Endangered 15, In Recovery 4, No Intervention 5363, Species of Concern 151, Threatened 10.

	category	not_protected	protected	percent_protected
0	Amphibian	73	7	0.087500
1	Bird	442	79	0.151631
2	Fish	116	11	0.086614
3	Mammal	176	38	0.177570
4	Nonvascular Plant	328	5	0.015015
5	Reptile	74	5	0.063291
6	Vascular Plant	4424	46	0.010291

Mammals and birds are mostly likely to be protected

# Are certain types of species more likely to be endangered?

Mammals and birds are most likely to be endangered with no significant difference between the two; amphibians and fish are the next endangered with no significant difference between the two. There is a significant difference in percent protected among the other species.

# Sample Size Determination

baseline = 0.15

minimum\_detectable\_effect = 43.33

sample\_size\_per\_variant = 510

yellowstone\_weeks\_observing = 510.0/507.0

bryce\_weeks\_observing = 510.0/250.0

“It would take approximately one week of observing in Yellowstone to see that many sheep, or approximately two weeks in Bryce to see that many sheep.”

# Data Charts

Conservation counts by status

conservation_status	scientific_name
0	Endangered
1	In Recovery
2	No Intervention
3	Species of Concern
4	Threatened

Percent protected by species

category	not_protected	protected	percent_protected	
0	Amphibian	73	7	0.087500
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## Mammal sheep by park

	park_name	observations
0	Bryce National Park	250
1	Great Smoky Mountains National Park	149
2	Yellowstone National Park	507
3	Yosemite National Park	282

	scientific_name	park_name	observations
0	Vicia benghalensis	Great Smoky Mountains National Park	68
1	Neovison vison	Great Smoky Mountains National Park	77
2	Prunus subcordata	Yosemite National Park	138
3	Abutilon theophrasti	Bryce National Park	84
4	Githopsis specularioides	Great Smoky Mountains National Park	85

# Data Charts

Species is sheep

category	scientific_name	common_names	conservation_status	is_protected	is_sheep	
3	Mammal Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)		No Intervention	False	True
1139	Vascular Plant Rumex acetosella	Sheep Sorrel, Sheep Sorrell		No Intervention	False	True
2233	Vascular Plant Festuca filiformis	Fineleaf Sheep Fescue		No Intervention	False	True
3014	Mammal Ovis canadensis	Bighorn Sheep, Bighorn Sheep	Species of Concern		True	True
3758	Vascular Plant Rumex acetosella	Common Sheep Sorrel, Field Sorrel, Red Sorrel, Sheep Sorre		No Intervention	False	True
3761	Vascular Plant Rumex paucifolius	Alpine Sheep Sorrel, Fewleaved Dock, Meadow Dock		No Intervention	False	True
4091	Vascular Plant Carex illota	Sheep Sedge, Smallhead Sedge		No Intervention	False	True
4383	Vascular Plant Potentilla ovina var. ovina	Sheep Cinquefoil		No Intervention	False	True
4446	Mammal Ovis canadensis sierrae	Sierra Nevada Bighorn Sheep		Endangered	True	True

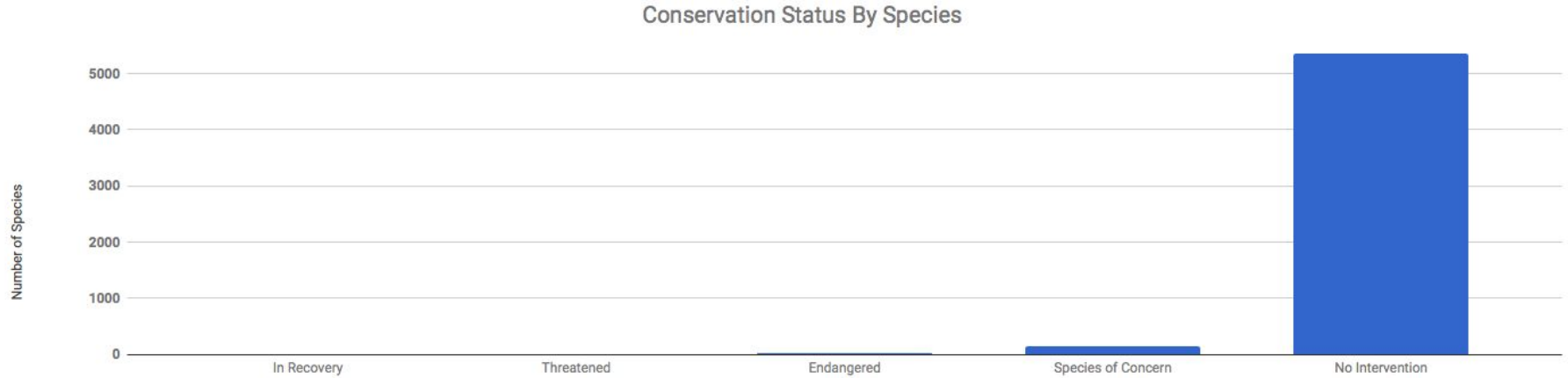
Species is sheep and mammal

category	scientific_name	common_names	conservation_status	is_protected	is_sheep
3	Mammal Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True
3014	Mammal Ovis canadensis	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
4446	Mammal Ovis canadensis sierrae	Sierra Nevada Bighorn Sheep	Endangered	True	True

Mamma sheep merge with observations

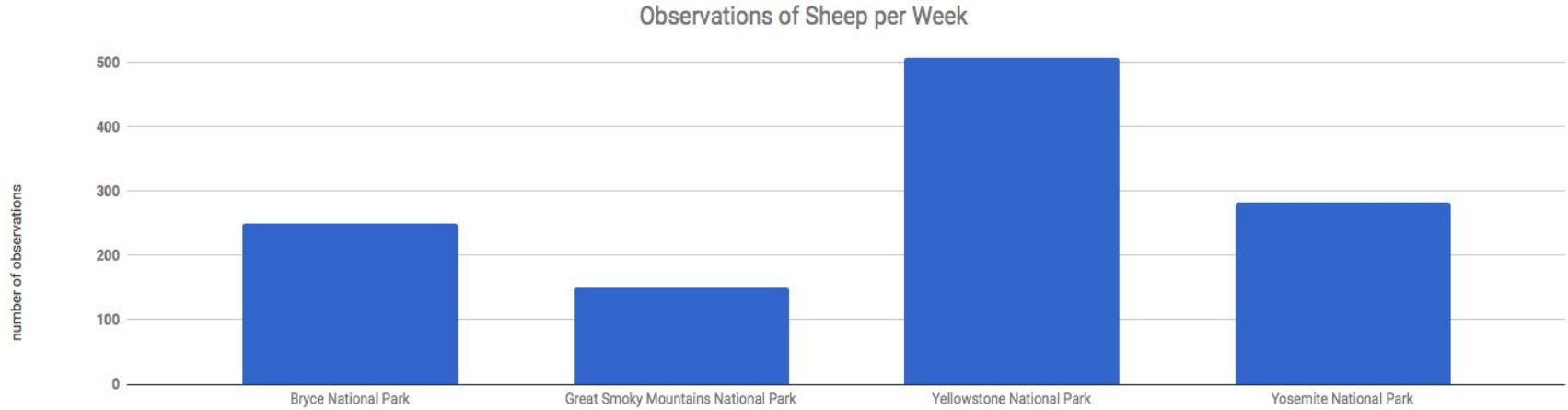
category	scientific_name	common_names	conservation_status	is_protected	is_sheep	park_name	observations
0	Mammal Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True	Yosemite National Park	126
1	Mammal Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True	Great Smoky Mountains National Park	76
2	Mammal Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True	Bryce National Park	119
3	Mammal Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True	Yellowstone National Park	221
4	Mammal Ovis canadensis	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True	Yellowstone National Park	219

# Plotting Conservation Status by Species



“I had to create chart in google sheets; I couldn't not get original to copy and paste from my Mac”

# Plotting Sheep Sightings



“I had to create chart in google sheets; I couldn’t not get original to copy and paste from my Mac”