

# Biodiversity for the National Parks





# Species Information



## Species Information

- 5541 different named species observed



# Species Information

- 5541 different named species observed
- 7 different categories
  - Mammals, birds, reptiles, amphibians, fish, vascular plants, nonvascular plants



# Species Information

- 5541 different named species observed
- 7 different categories
  - Mammals, birds, reptiles, amphibians, fish, vascular plants, nonvascular plants
- 5 levels of conservation concern
  - No Intervention, Species of Concern, Threatened, Endangered, In Recovery



# Conservation Status

conservation_status	scientific_name	
1	In Recovery	4
4	Threatened	10
0	Endangered	16
3	Species of Concern	161
2	No Intervention	5633





# Protection by Species Category

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



# Protection by Species Category

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



# Protection by Species Category

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

p-value = 0.688

# Protection by Species Category

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

p-value = 0.688

# Protection by Species Category

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

p-value = 0.688

p-value = 0.038



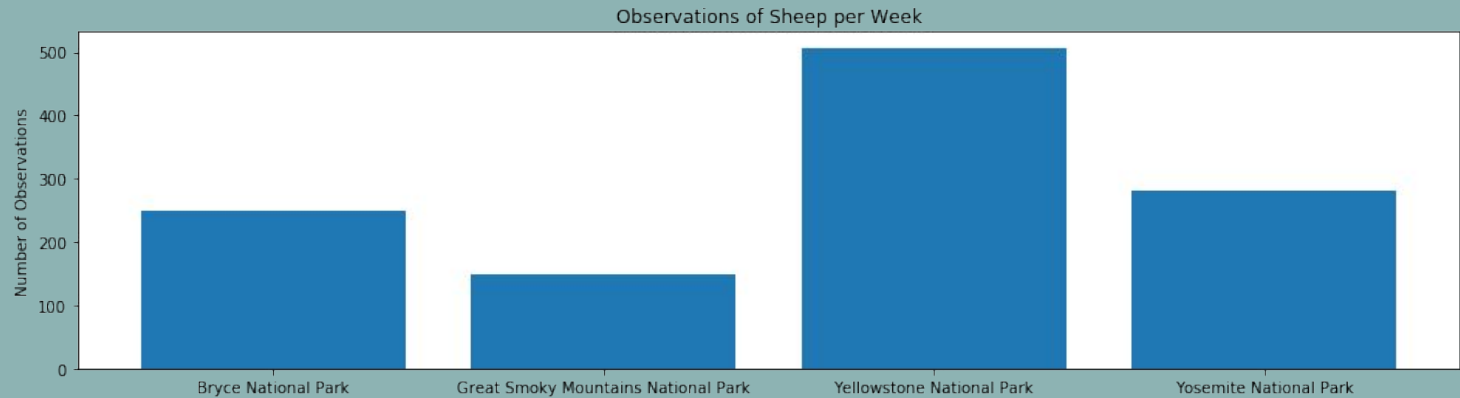
# Sheep in our National Parks

# Sheep in our National Parks

	scientific_name	park_name	observations	category	common_names	conservation_status	is_protected	is_sheep
0	Ovis canadensis	Yellowstone National Park	219	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
1	Ovis canadensis	Bryce National Park	109	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
2	Ovis canadensis	Yosemite National Park	117	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
3	Ovis canadensis	Great Smoky Mountains National Park	48	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
4	Ovis canadensis sierrae	Yellowstone National Park	67	Mammal	Sierra Nevada Bighorn Sheep	Endangered	True	True
5	Ovis canadensis sierrae	Yosemite National Park	39	Mammal	Sierra Nevada Bighorn Sheep	Endangered	True	True
6	Ovis canadensis sierrae	Bryce National Park	22	Mammal	Sierra Nevada Bighorn Sheep	Endangered	True	True
7	Ovis canadensis sierrae	Great Smoky Mountains National Park	25	Mammal	Sierra Nevada Bighorn Sheep	Endangered	True	True
8	Ovis aries	Yosemite National Park	126	Mammal	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True
9	Ovis aries	Great Smoky Mountains National Park	76	Mammal	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True
10	Ovis aries	Bryce National Park	119	Mammal	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True
11	Ovis aries	Yellowstone National Park	221	Mammal	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True

# Sheep in our National Parks

	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





# **Foot and Mouth Disease in Sheep**



# Foot and Mouth Disease in Sheep

- 15% rate of foot and mouth disease observed in sheep at Bryce National Park





# Foot and Mouth Disease in Sheep

- 15% rate of foot and mouth disease observed in sheep at Bryce National Park
- Looking for at least 5% reduction



# Foot and Mouth Disease in Sheep

- 15% rate of foot and mouth disease observed in sheep at Bryce National Park
- Looking for at least 5% reduction
  - 33.33% Minimum detectable effect



# Foot and Mouth Disease in Sheep

- 15% rate of foot and mouth disease observed in sheep at Bryce National Park
- Looking for at least 5% reduction
  - 33.33% Minimum detectable effect
- 90% level of significance



# Foot and Mouth Disease in Sheep

- 15% rate of foot and mouth disease observed in sheep at Bryce National Park
- Looking for at least 5% reduction
  - 33.33% Minimum detectable effect
- 90% level of significance
- Sample size = 510



# Foot and Mouth Disease in Sheep

- 15% rate of foot and mouth disease observed in sheep at Bryce National Park
- Looking for at least 5% reduction
  - 33.33% Minimum detectable effect
- 90% level of significance
- Sample size = 510
- Weeks of observation at Bryce National Park: **2.04**



# Foot and Mouth Disease in Sheep

- 15% rate of foot and mouth disease observed in sheep at Bryce National Park
- Looking for at least 5% reduction
  - 33.33% Minimum detectable effect
- 90% level of significance
- Sample size = 510
- Weeks of observation at Bryce National Park: **2.04**
- Weeks of observation at Yellowstone National Park: **1.01**



**Thank You**