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April 12, 2020
CodeAcademy

National Park Service

Species analysis

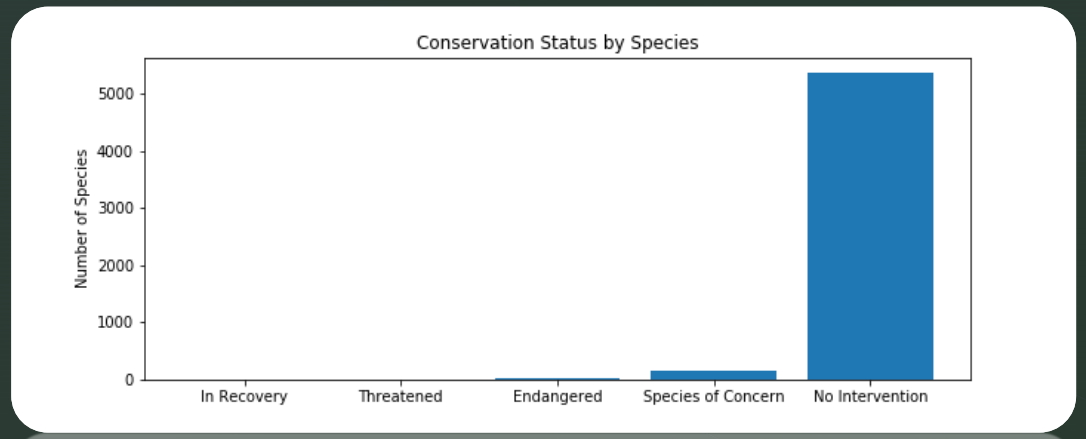
WHAT ARE WE GOING TO SEE

In this slide set you're going to see some analysis done among species at some US National Parks.

The first dataset we're using id 'species_info.csv' that contains 4 columns:

- **category** → indicates which category the specie belong to (Mammal, Bird, Reptile, Amphibian, Fish, Vascular Plant, Nonvascular Plant)
- **scientific_name** → indicates the scientific name of the specie
- **common_names** → indicates the common name of a species
- **conservation_status** → indicates the specie status (Endangered – risk of extinction, Threatened – vulnerable to endangerment, In Recovery – exiting endangered status, Species of Concern – need of conservation, or Nan which is transformed into No Intervention)

THE CONSERVATION STATUS OF THE SPECIES



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

As we can see from above, most species are in no need of intervention however, there are 151 species that deserve a particular attention, namely Species of Concern. There are 10 Threatened species, 15 is serious danger of extinction and 4 species exited this last status.

THE ENDANGERMENT AMONG SPECIES

In this table we defined protected as all the species which conservation status is not *'No Intervention'.*

Based on a Chi Square test it results that there is no significant difference in endangerment between Mammals and Birds however, between Mammals and Reptiles there is.

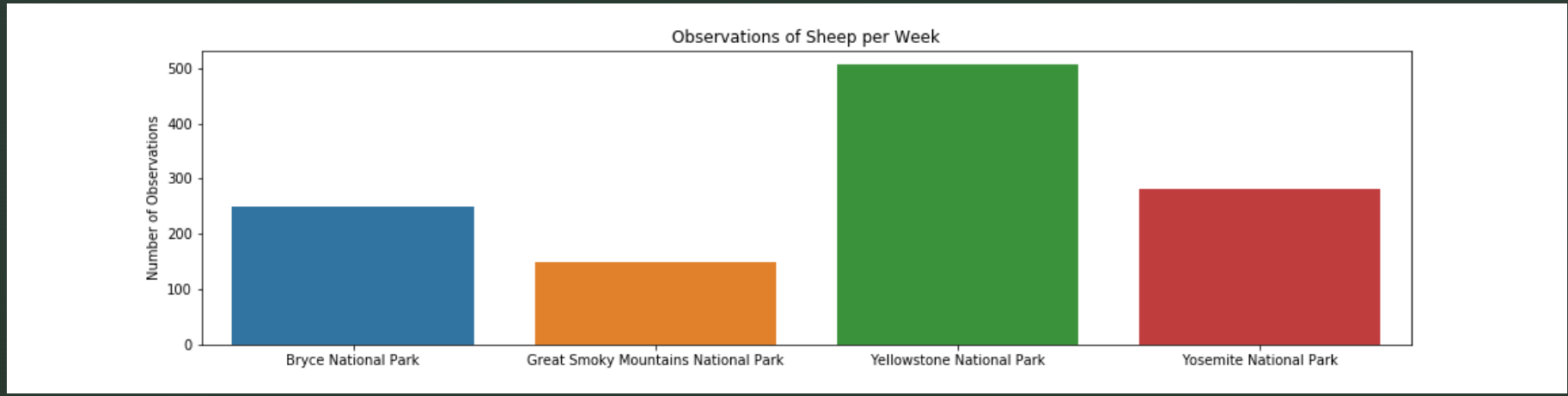
category	not_protected	protected	percent_protected
Amphibian	73	7	8.750000
Bird	442	79	15.163148
Fish	116	11	8.661417
Mammal	176	38	17.757009
Nonvascular Plant	328	5	1.501502
Reptile	74	5	6.329114
Vascular Plant	4424	46	1.029083

Based on this result I would advice the ranges to take particular care of Mammals instead of Reptiles for example.

SHEEP IN THE NATIONAL PARKS

Using another dataset (observations.csv) containing the number of observation of the species in each National park we derived this graph.

It shows the amount of observation of sheep in each National Park, per week.



SHEEP IN THE NATIONAL PARKS

Our scientists know that 15% of the sheep at the Bryce National Park has foot and mouth disease. At Yellowstone, there has been developed a program to reduce the rate of diseases at that park. Would this work in the Bryce National Park?

Based on statistical calculation (see attachments), if we want to see a 5% reduction from our baseline of 15%, we need to test the program on at least 890 sheep.

With the Bryce's rate (250 sheep/week) it would take approx. 25 days to see a change while at Yellowstone (507 sheep/week) 12 days would be enough.

THANKS

Feel free to give me any feedback or advice.

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