Biodiversity Project

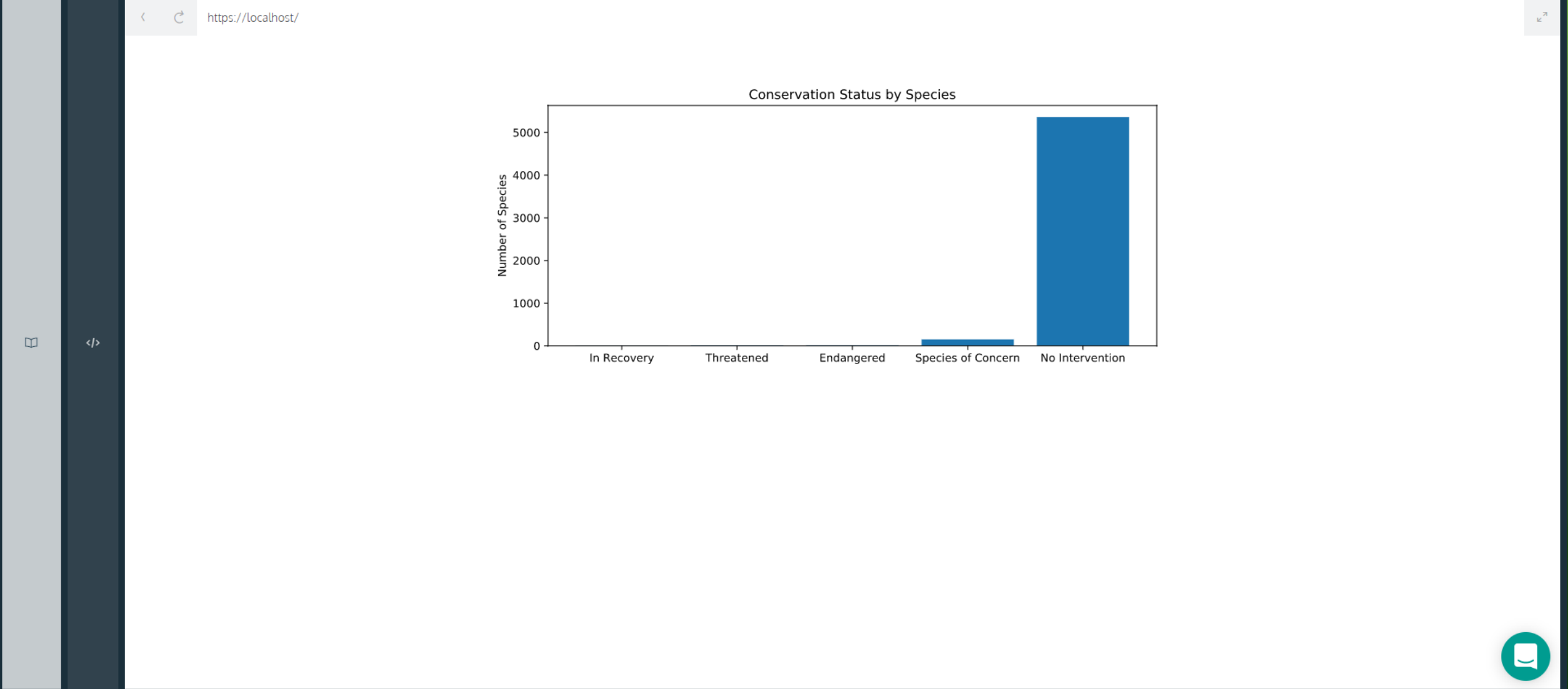By Ryan Klorman

Species_info.csv

- This CSV file gives us info about different species in our national parks, including:

    1. The Scientific Name of each species

    2. The Common Names of each species

    3. The species conservation status

- When we ran some of the lambda's and began adding different columns based off of the data given, you really start to paint a picture of what this DataFrame is trying to tell:

    1. Thy types of species we are studying

    2. Which are endangered

    3. Which are being protected

    4. Does species include things other than animals?

Species_info.csv (continued)

- From our Data, we can see that the most unprotected animal category in our National Parks are the Reptiles.

  - Surprisingly, the category with the most unprotected species isn't even an animal at all. It would be the Vascular Plants and the Non Vascular plants a close 2nd

- When Looking for the most protected species, we use the data pivoted to see that Mammals are the "Most Protected" at 17%. Birds a close 2nd, at 15%.

- The least protected is, once again, the Plant species. Vascular Plants have 1.08% of their species protected and Nonvascular Plants have 1.5% of their species protected.

Species_info.csv (Summary)

- Based on the calculations, it seems that the conservationists focus most of their concerns with the Mammals and the Birds. I believe this is because these are the species most of Society notices. For example, the Bison and the Elk: We see these animals directly and have a sense of a relationship with them.
  - Fish: Cant see them directly; hard to know if a specific species is dying off
  - Plants: Most people cant tell the difference between one plant or the other; hard to consider important
- I recommend to conservationists that if they want to follow the data provided, plants become more of an area of concern when protecting specific categories of species.

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Conservation Status by Species

A bar chart titled "Conservation Status by Species" with the y-axis labeled "Number of Species" ranging from 0 to 5000, and x-axis categories: In Recovery, Threatened, Endangered, Species of Concern, No Intervention.

Foot & Mouth Disease Study

- We start by investigating which parks have sheep and if they are protected.

- We quickly find that the Ovis canadensis is protected in 5 of the national parks we are looking at.

- We merge the dataframes, species & observations, to see how many observations of sheep have taken place in each of the 5 national parks

Foot & Mouth Disease Study (Continued)

- Moving on to trying to combat the Foot & Mouth Disease:

  - We want to determine how many observations need to take place to make sure the disease is under control.

  - We get a sample size variant of 870. Which means we need to have 870 sheep observations to have a statistical significance of 90%.

  - After plotting our Bar graph of "Observations of Sheep per Week", we can see how many weeks its going to take to observe the 870 sheep per park

    - Yellowstone National Park- 1 Week

    - Bryce National park- 3 Weeks

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Observations of Sheep per Week