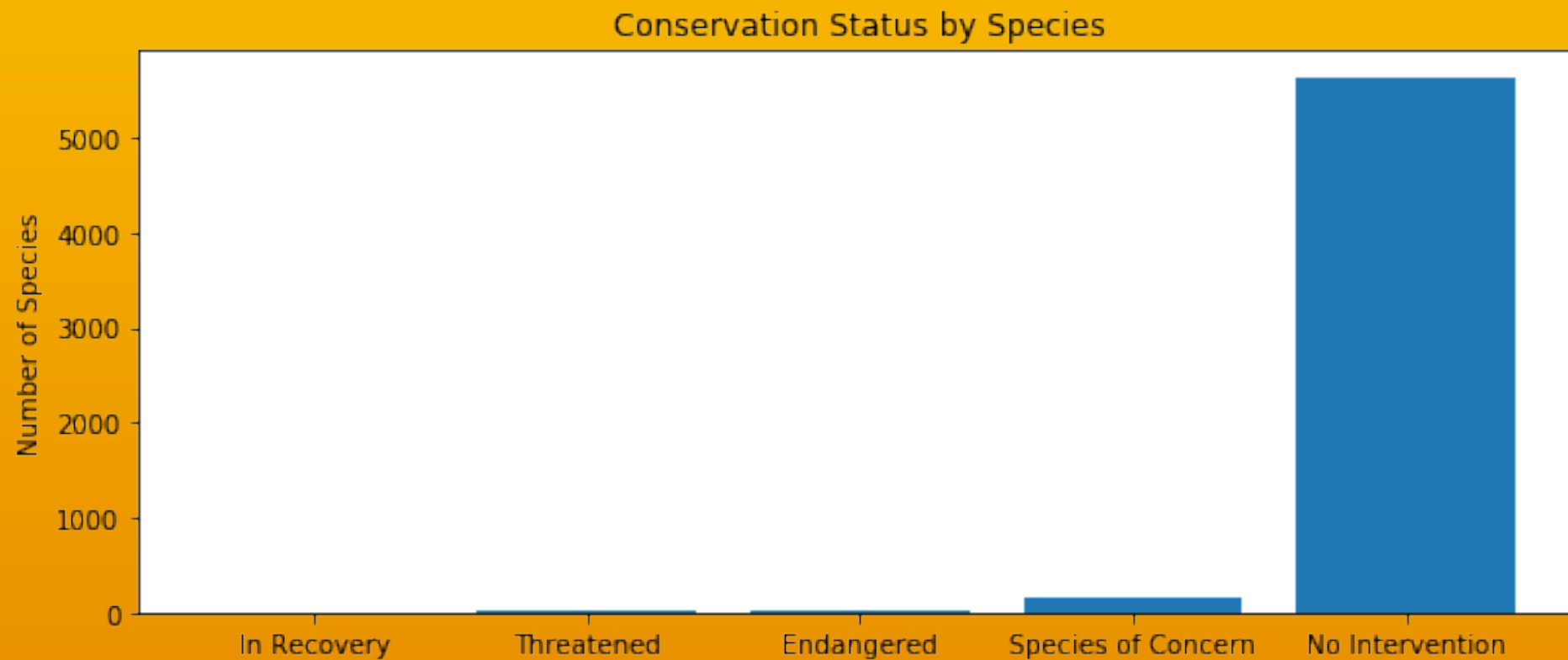


# Capstone: Biodiversity

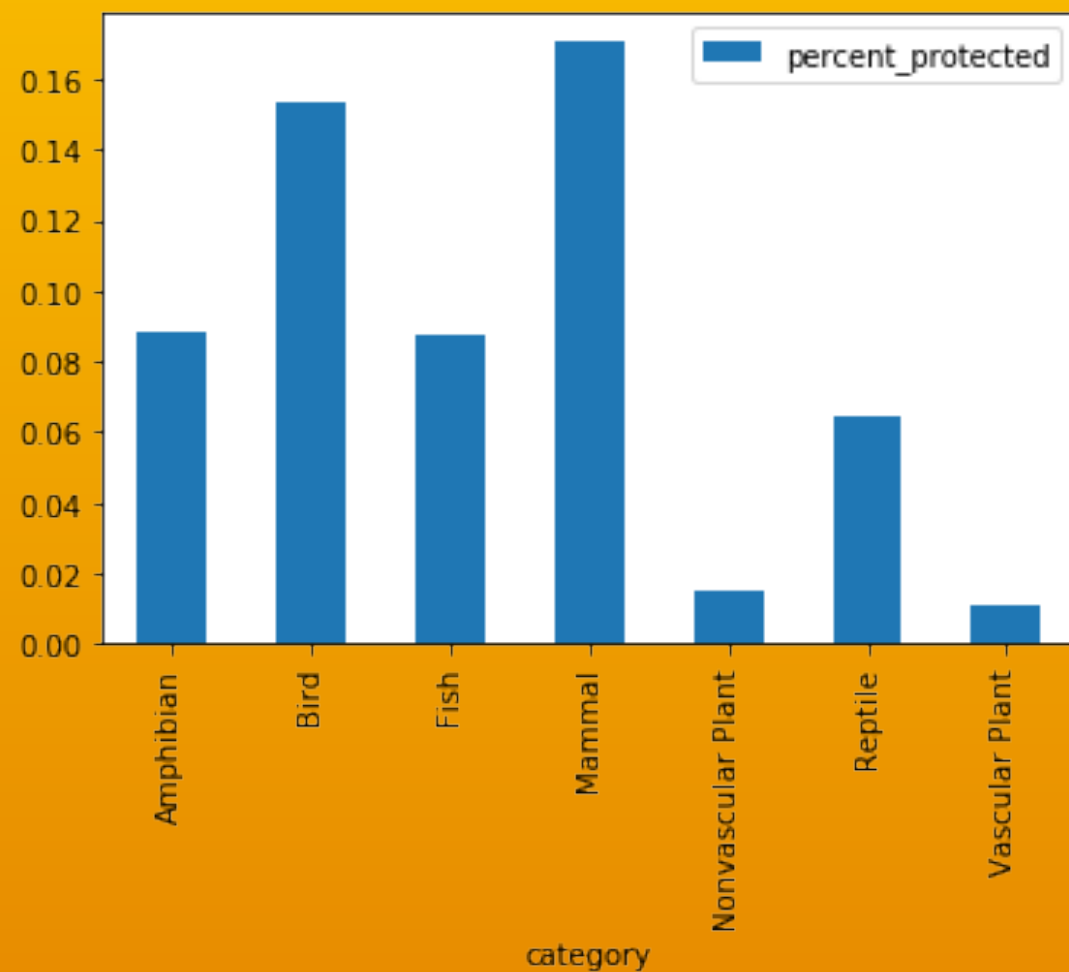
Rachel Newell

# Data

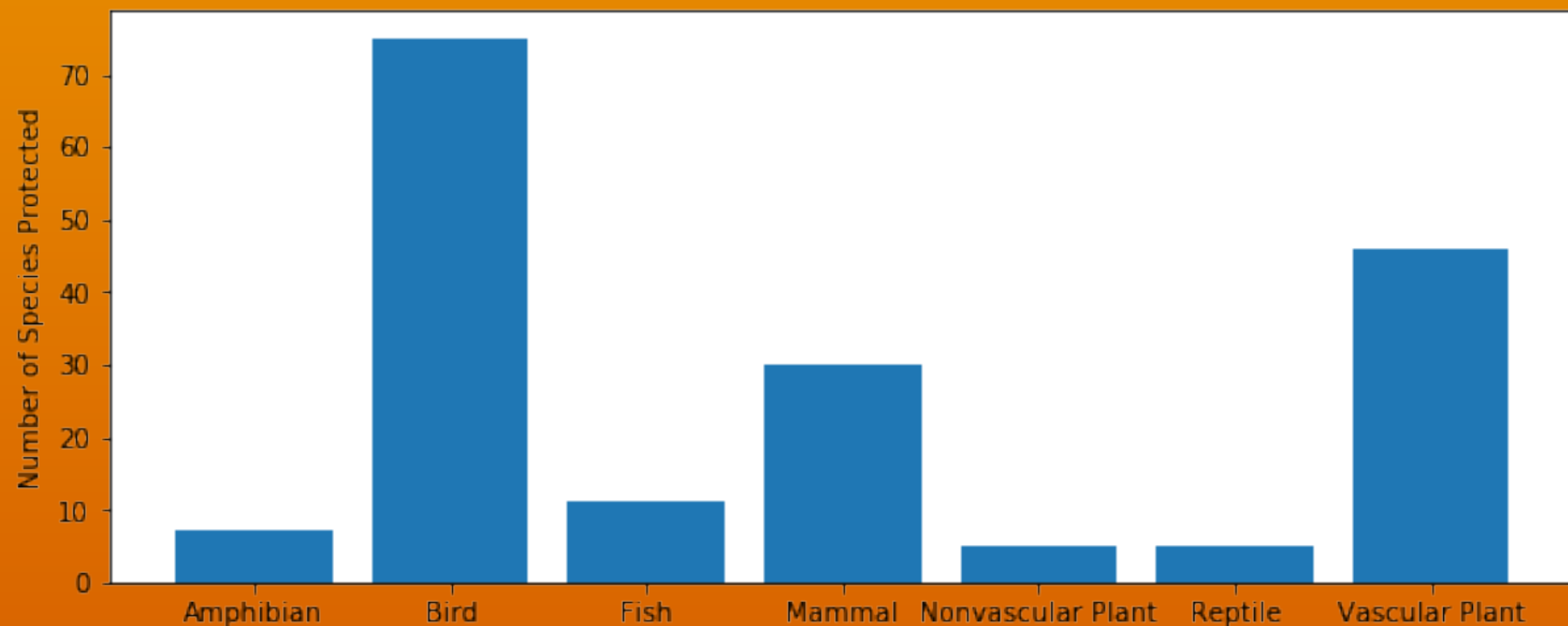
- 5,824 rows, each representing a species, with columns for category (Mammal, Reptile, Bird, Amphibian, Fish, Vascular Plant and Nonvascular Plant), scientific name, common names, and conservation status (none, Species of Concern, Endangered, Threatened, and In Recovery)
- 5,541 unique species
- 15 endangered, 4 in recovery, 151 species of concern, 10 threatened; 5,363 species with no intervention

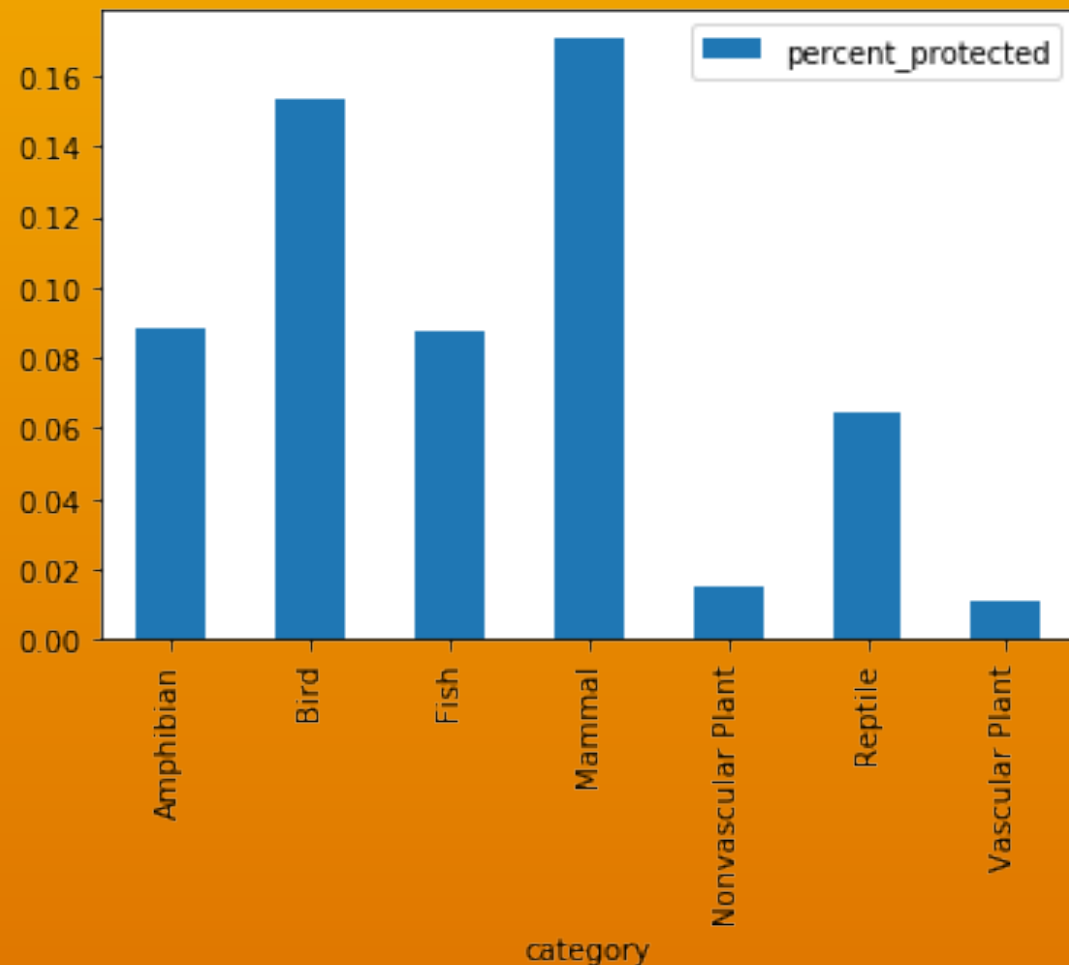


- Most species are not protected, some are species of concern, very few are threatened or endangered, and almost none are in recovery.
- More information about how conservation status is assigned would be required to draw conclusions from this data.

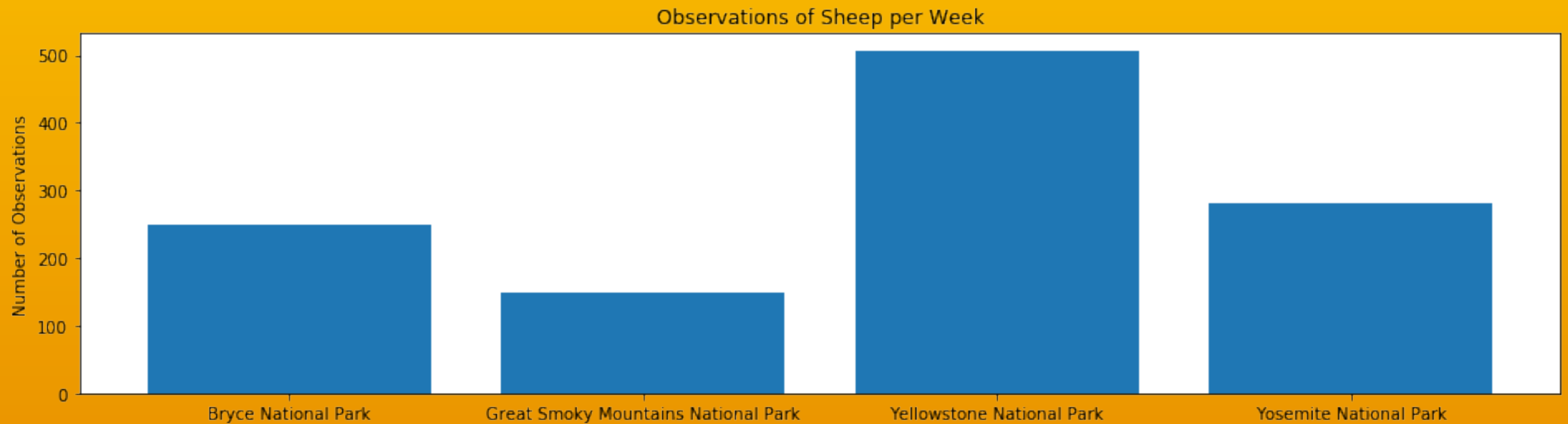


- Although birds represent the largest number of species under protection, a larger proportion of mammal species are protected
- Plant species are especially unlikely to be protected, despite a fair number of vascular plants being protected





- There is no statistical significance between the likelihood of a given species of bird or mammal to have conservation status ( $p = 0.69$ )
- Mammal species are significantly more likely than reptile species to be have conservation status ( $p = 0.038$ )



- There are 3 species of sheep documented in these national parks; *Ovis aries*, *Ovis canadensis*, and *Ovis canadensis sierrae*
- All 3 species are observed in all 4 parks
- In one week, 221 *Ovis aries* were observed in Yellowstone

- Yellowstone observes by far the most sheep; this is probably due to sheep habitat, as it certainly isn't larger than Yosemite; the granite in Yosemite may be too steep & featureless for sheep habitat
- Bryce is about 59 square miles, and observes more sheep than Great Smoky Mountains at 816 square miles
- With a baseline of 15% of sheep exhibiting foot & mouth disease, to detect a 33% reduction (to 10%) with 90% confidence, 520 sheep would need to be sampled
- At current observation rates, this should take just over a week at Yellowstone and just over 2 weeks at Bryce Canyon