Finding Herbivorous Marsupials in Australia

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1. Introduction/Business Problem

1.1 Background

Herbivorous marsupials include perhaps the most well-known animals that can be found in Australia. Both koalas and kangaroos can be found in this animal category. A lot of individuals who travel to Australia and even those who live in Australia love going to see these amazing animals because they are so well known in the region, as well as to connect to Australian culture. Further, these animals can only be found in Australia and the nearby islands, so many tourists prioritize seeing these animals when exploring the large continent.

1.2 Problem

Many tourists and even those to live in Australia do not know where they can go to find herbivorous marsupials, so it is the object of this project to determine where these specials are most likely to be found.

1.3 Interest

It is my personal interest in that I am very passionate about the environment and am quite smitten with the idea of traveling to Australia and seeing these amazing animals. Further, Australia is known for its kangaroos, koalas, and outback vibe, so many individuals who live in or have an interest in Australia feel a strong interest and calling to see these animals in person.

2. Data acquisition and cleaning

2.1 Data Introduction

The Data for this project is from Foursquare as well as from the Atlas of Living Australia. The data was downloaded and then copy and pasted into an excel spreadsheet. I then uploaded the excel spreadsheet. I will be using this data to determine in which province on Australia someone can find the most herbivorous marsupials and will then be using Foursquare data to determine where most conservancies and sanctuaries in that province can be found. This data will solve the problems of where tourists and explorers should go in order to see these amazing animals.

2.2 Data sources

The first data set I decided to use was data from the Atlas of Living Australia that included in which regions of the continent herbivorous marsupials were considered to be protected and conserved. If the animals were

conserved or protected in a certain region of Australia, that meant that they lived and were prevalent in that area.

Other data to support my conclusions were obtained from Google Maps. By searching for animal sanctuaries, national parks, and conserved land, it was easier to spot where most of the protected land was in the continent. Once it was determined using the previous data that these populations were most likely to be in Queensland, I used Google Maps to determine that the Gold Coast held the most protected land of the region, and therefore, had the greatest chance of having herbivorous marsupial populations.

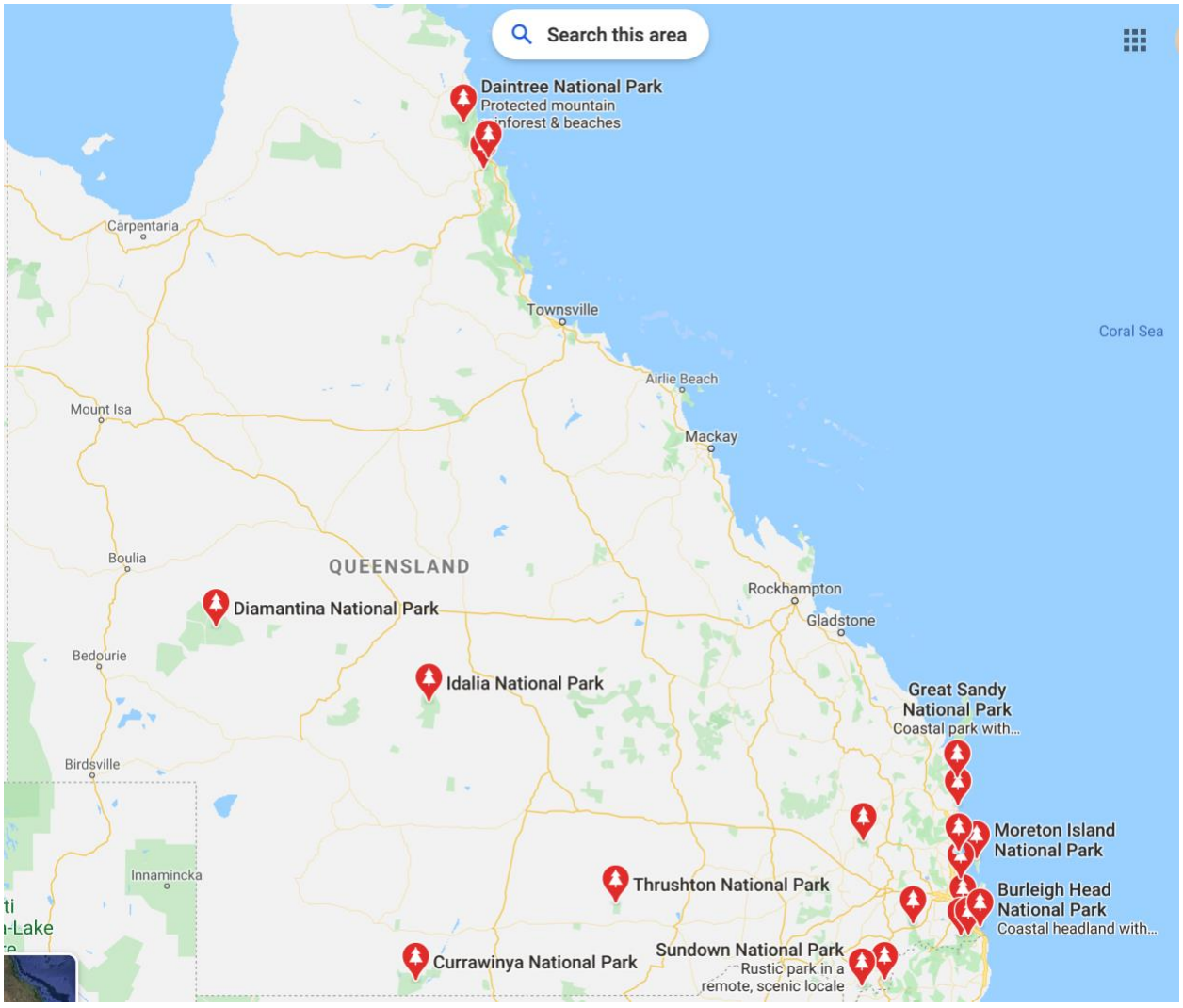

Figure 1. Google Maps Image Displaying the Majority of National Parks in Queensland along the Gold Coast

The remaining data was obtained from Foursquare which provided information on what venues were nearby the national parks and animal sanctuary which I chose to explore to provide more information on the region in question.

2.3 Data cleaning

Using the Atlas of Living Australia data, I removed the columns titled “Scientific Name Authorship”, “Species”, and “Invasive” because these columns did not provide any data that was useful in determining where these marsupial population would most likely be found. In addition, I deleted any rows that did not have any data for where the herbivorous marsupials were conserved and kept the rest of the data for analysis. For the Google Maps image, once I determined that Queensland was the best region of Australia to find these populations, my searches into the Google Engine were solely focused on finding conserved land, animal sanctuaries, and national parks in Queensland. For the Foursquare data, on the off chance that the national park regions which I was analyzing were too big and nothing displayed that were ‘nearby venues’, then I increased the search radius in order to find what venues were in the nearby vicinity and get a better understanding of the region.

2.4 Rational for Data Selection

Foursquare data really only has venues for eating, shopping, and entertainment so there is no method on Foursquare urls to track national parks, animal sanctuaries, or nature preserves. Therefore, I decided to choose three locations which according to the Google Map seemed to represent the Gold Coast well in that the three locations were on varying sides of the coast and they represented different terrain. The first location was Currumbin Wildlife Sanctuary in the very heart of the Gold Coast right on the water. The second location was Tamborine National Park which was NW of Currumbin and displayed more of the northern more preserved region. The third location was Springbrook National Park which lies right in the heart of the national parks and preserved land in the southern side of the Gold Coast. To use the Foursquare data, I then found ‘venues’ that were close to these locations to display the region at large and what the Gold Coast was largely made up of. Considering that the majority of the venues from these three spots were parks, lookout spots, and nature preserves (determined by looking at the ‘type’ of venue) it seems apparent that the Gold Coast of Queensland does indeed have the largest amount of preserved land, national parks, and animal sanctuaries.

3. Exploratory Data Analysis

3.1 Calculating target location

To determine that Queensland was the location that would have the largest herbivorous marsupial populations, I tallied up how many of the herbivorous marsupial species were considered protected in each region of Australia according to the Atlas of Living Australia dataset. I counted that the vast majority were considered protected in Queensland more than any other region of Australia, which means that all of these herbivorous marsupial species live in Queensland. Therefore, using deductive reasoning, most populations of herbivorous marsupials can be found in Queensland more so than anywhere else in Australia. From here, I looked to Google Maps to determine where the most protected land and nature preserves could be found in Queensland as described in the above section.

3.2 Relationship between location and population

According to Tourism Australia 2020, most marsupials and Australian animals in general are found in National Parks throughout Australia. Therefore, with a higher quantity of national parks and nature preserves there is a higher quantity of herbivorous marsupials. This is why the Gold Coast of Queensland is determined as having the greatest amount of these animals, because it claims the greatest number of these animals as being protected and has the greatest amount of protected land in Queensland.

4. Conclusions

In this study, I analyzed various regions in Australia, various regions in Queensland, and the prominence of different animal species to determine where tourists and locals alike should go to have the greatest chance of seeing an herbivorous marsupial (such as a koala or kangaroo). Using data from Foursquare, Google Maps, and Atlas of Living Australia, I was able to determine that the Gold Coast in Queensland has the greatest number of national parks, nature preserves, and animal sanctuaries, and therefore provides the best chances of seeing these animals in the wild. These animals define Australia and Australian culture and are a crucial part in the tourism of Australia, so determining the location where tourists can see these amazing animals will play a crucial part in the tourism industry for the continent.