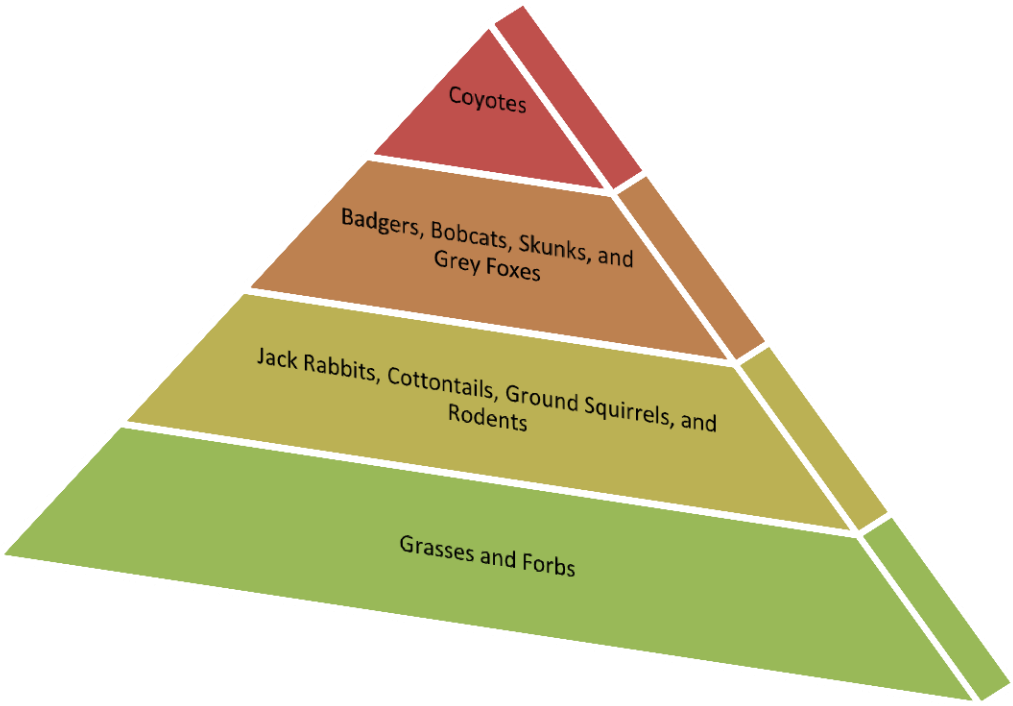
Ethan Tran
Period 1
9/13/14

The Effects of Coyote Removal in Texas

PART I:

In this study, I am asked to find information on the effects of Coyote removal in West Texas. The effects would be the aspects of the environment changing due to the removal of Coyotes. To retrieve this information, I plan to test with multiple, identical sites similar to the environment of West Texas. However, I'm going to change the sites by removing coyotes in most of the environments and leaving 2-3 sites to be habituated with coyotes. The variable that needs to be monitored would be how the population of other species would change and many more.

PART Ib:



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PART II:

The experimental design is basically 2 controlled and 2 treated environments. The treated environments have had their coyote habitants evicted from the site. While the 2 controlled environments have kept their coyote habitants. The experiment will have a time span of 3 years; 1 year of the experiment would be monitoring the sites and not removing any coyotes, and the last 2 years would be monitoring all sites and removing coyotes from 2 of them. With the removal of coyotes, I predict that the meso-predators' population will rise since there isn't any predators to remove them of their lives. I also predict that the herbivores' population will lower due to the high amounts of meso-predators.

PART III:

Looking at the graphs for part 3, removing coyote habitants would lead to the rise of the meso-predator population. The graph shows after approximately one year after treatment began, the population skyrockets above 200 (No. /km x 1,000). It does lower slightly after 1 season but then rises again after that. All of this occurs while the controlled areas stay unchanged without the risk of overpopulation.

As a prediction, since the population of meso-predators rose, then the rodent populations would decrease since there are more meso-predators to hunt them. Also, the rodent population would decrease and so would the spread of seeds due to rodents being one of their carriers.

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PART IV:

The primary factor controlling the rodent population could be the meso-predators populations rising because of the rising of the population due to the sudden demands of food needed for the meso-predators to survive. Some other changes like a decrease of the entire population in the site, an example of the outcome would be like Easter Island.

PART V:

The success of Ord's Kangaroo Rat dramatically changes, the rodent diversity decreases after coyotes are taken away. Because of this, I have concluded that because the Kangaroo Rat's traits, it has managed to survive even with the rise of the meso-predators population. The coyotes' population can be the keystone species, or the supporting pillar, of the community. One possible cause for rodent diversity decline in the control area could be the division of the West Texas area into two groups. This separation of the ecosystem could've affected the species numbers in each group, like moving the Ord's Kangaroo Rat mainly into the treatment area.

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1234 Not my real address.
San Diego, CA, 92111
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Mario Mario
1234 Rainbow Rd.
Mushroom Kingdom, Mario World, 52956

Dear Mr. Mario Mario,

Hi, my name is Ethan Tran of the Texas Ecosystem Research Group, and I am writing to you to tell about our research on the effects of coyote removal in the West Texas ecosystem. As a representative of The Nature Conservancy, I believe you'll be intrigued to know that coyotes play a vital role in the ecosystem as a keystone species, and that our research shows that rodents and other small animals would be overabundant without them.

Due to the removal of the coyotes, mesopredator and rodent populations increases, since the animals do not have a predator to lower the population to a safe amount. Due to rising demands for food from other species, this decreases rodent population. However, what should we do with the coyote population now?

Because of the results that were evident due to this change, such as less species diversity and overpopulation, you should prevent any needless coyote hunts, since they could lead to ecosystem inequality. Also, you should inform the people living in the area to take defensive actions.

With regards,

Ethan Tran