



Scat Happens

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Abstract

This is a project where plant samples from within deer scat are identified in order to learn if deer are eating more landscaping plants or plants native to Shelter Island. This is a continuation of last years work.

Introduction

This project is about the interactions between humans and deer on Shelter Island, a small rural island between the twin forks of Long Island New York. Shelter Island has a large nature conservancy called the Mashomack Preserve which takes up a portion of the island and is a wildlife refuge. The population of people on the island is small but the population of wildlife is significant. On the island there is a large population of deer. There is no predator (besides humans) that go to kill the deer thus allowing them to breed and expand their numbers. There is a normal hunting season every year to try to regulate the large population of deer. With more deer there is less food for all of them. Deer are spotted in yards and all over the island, but where they do the majority of their feeding is unknown. They move to where the food is and are eating the plants people keep outside. The purpose of this project is to isolate the plants found in deer scat and see what these plants are and in order to determine what locations deer are eating the most in.

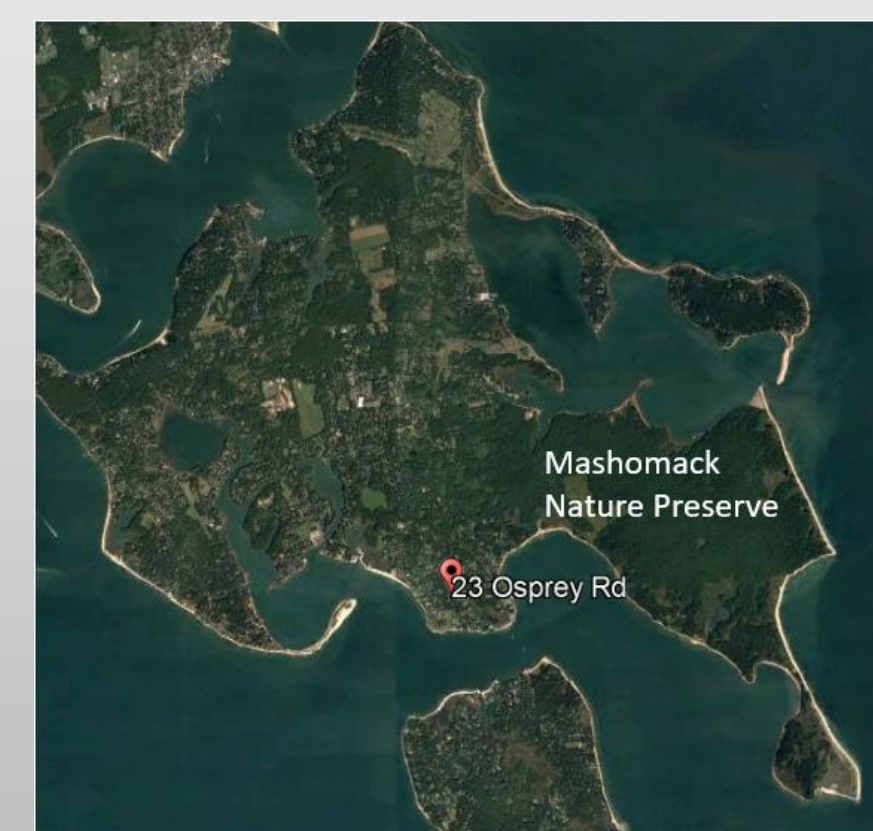
Materials & Methods

First, search an area in which deer have been spotted. Then once a scat pile has been found the location is documented and photographed, full PPE is worn at all times. Then the pellets are placed into the test tube. Next, back to the lab it is dissected it wearing full PPE. Anything that appears to be plant material is pulled out. The suspected materials are washed in alcohol to clean the sample. We were supposed to extract the DNA for amplification and sequencing but due to the Corona Virus all we can do is collect more samples at home and store them for the Fall

Results

As of this year the team did not come up with results like we had hoped. From previous samples deer are eating landscaping plants over the native plants.

Tables & Figures



The deer scat is found in these woods which is not far from Mashomack Nature Preserve as you can see on the map.

We see the deer often.

Are they eating more native plants from inside the preserve or are they eating more of the plants from yards like ours?

If the deer are eating more of the landscape plants than native that means the deer do not have enough resources even in Mashomack to keep them well fed.

Discussion

It is amazing to us to see how much plant material actually survives all of the deer's 'stomachs' in its digestive tract. This year my techniques improved greatly, last year I was able to barcode 4 samples because that is all I could find. This year I have over 20 samples ready to go. I look forward to being able to Barcode them in the fall.

We also have the materials to extract DNA from the scat itself, we want to examine the microbiome of the deer scat. Now that I have all of my plant samples we hope to be able to upgrade our future work to the more difficult microbiome. There we hope to see if deer that eat more native plants have a different gut microbiome than deer that eat landscape plants.

Acknowledgements

Thank you to our parents for allowing us to have deer scat in the freezer and to collect samples at home