How does the geese migration over Long Island affect the biodiversity of ants in Heckscher Park?

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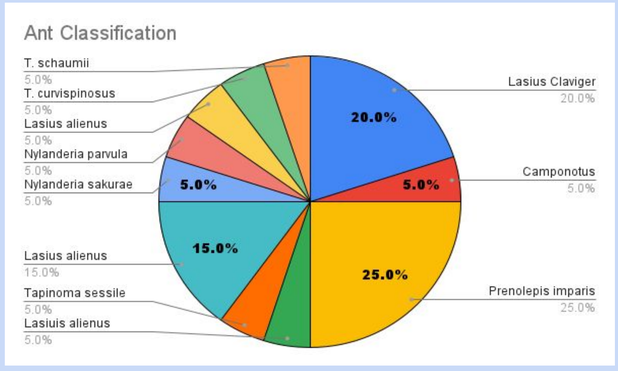
Introduction

Biodiversity is a necessary aspect in every ecosystem in order to allow organisms to thrive. Biodiversity is the number of different species living in a given area. When studying ecosystems, scientists typically focus on biodiversity because it greatly contributes to the stability of ecosystems. Ecosystems with a higher biodiversity, or a higher number of species, are likely to be more successful than ecosystems with less biodiversity. In this study, we assessed the biodiversity in an area with increased environmental stressors, such as a high geese population. An environmental stressor is a factor that can alter the success of an ecosystem. In this case, the ecosystem was studied to identify if the geese population at Heckscher Park affects the biodiversity.

Geese are migratory birds which means they fly periodically across different areas in order to have better access to food and a warmer climate. It is possible that through their migration, the geese increase the biodiversity of Heckscher Park in Huntington by transporting invertebrates from different areas of the world back to New York. In order to test this theory, our group collected ants across the park in areas with both high and low geese-population. This question was posed because every time we attended Heckscher Park, or even drove by, the first thing noticed is the immense amount of geese roaming the area. When prompted with the assignment to barcode insects in an area, we found it would be of great interest to determine whether the vast geese population at Heckscher Park in Huntington affects the different species in the ecosystem. Although there was no certainty, we expected the outcome of this experiment to demonstrate that the geese population does, even slightly, affect the biodiversity of the ecosystem.

Methods & Materials
And
The Collection Process

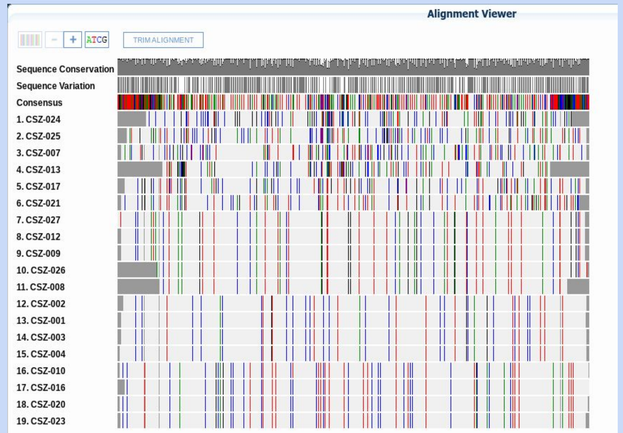


Discussion

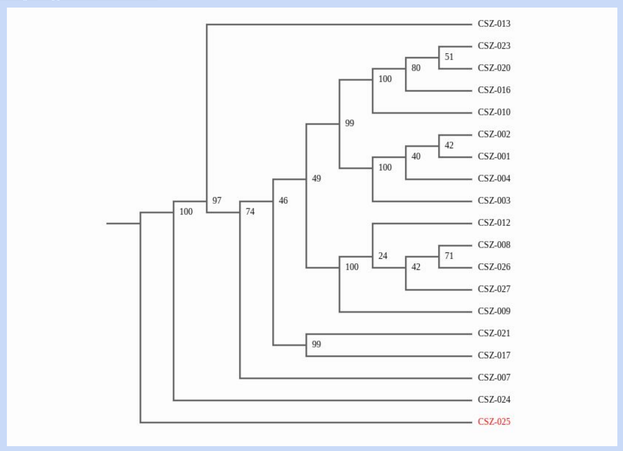
Our results show how Heckscher Park is rich with ant species throughout all areas of the park. Multiple species were found in different areas in the park inclinding; tree roots, tree bark, soil, and by certain plants. It is important that there is lots of biodiversity of ants in the park because of how important ants are to all ecosystems. Ants allow for water and oxygen to reach soil by moving and aerating it. They maintain ecological balance in their habitats and without them the ecosystem would not thrive. An example of this would be too much methane or carbon dioxide production that would eventually lead to severe global warming resulting in mass destruction within the ecosystem. It is safe to say that this is not a concern at Heckscher Park anytime soon with the impressive ant population.

However there was no connection made between the geese migration patterns with the biodiversity of the ants. We expected there to be a drastic difference in species based on where the geese were due to the geese migration patterns, but we did not find that. More research would need to be done in order to confirm or deny if our findings were correct. Our evidence also concluded that there is possible some new ant species in the park. This could further explain the inner workings of the ecosystem at Heckscher park and what these ants are doing to help it.

Barcodes



Phylogenetic tree



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