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Abstract

The frequency of mowing in green spaces, which are areas partially or completely covered with vegetation, can alter soil temperature, density, and organic matter availability, potentially impacting available soil invertebrates' biodiversity. This study aims to research how green space management influences soil invertebrate communities by specifically comparing mowed and unmowed areas that are in close proximity and have similar soil types and sunlight exposure.

Soil invertebrates, specifically earthworms, mites, or springtails, will be collected to measure species richness, abundance, diversity, allowing us to eventually assess how maintenance practices can affect soil community biodiversity. Further, variations in the soil, such as temperature, pH, organic matter, moisture, and density, will be recorded to examine their relationship with and influence on invertebrate communities. This investigation overall enables us to evaluate the effect of mowing on invertebrate biodiversity while also accounting for environmental variability present within an urban park setting.

Introduction

Ecosystem diversity is shaped by both environmental and human factors. This study investigates how green space management affects soil invertebrates—crucial for nutrient cycling—by comparing mowed and unmowed areas. Mowing alters soil conditions, potentially impacting species richness. Understanding these distinctions reveals how human land use influences soil biodiversity.

This study aims to research how green space management affects the biodiversity of soil invertebrate communities by specifically comparing mowed and unmowed areas. By understanding the distinctions in species presence, diversity, and relative abundance, the study can reveal whether human land use practices influence the overall abundance of soil ecosystems.

Materials & Methods

Soil invertebrates will be collected from mowed and unmowed areas at the experimentation sites to compare how maintenance practices can affect the soil communities. At each site, we will choose a couple sampling points. We will use gloves and plastic containers, getting 2-3 handfuls of soil into labeled containers. We will take photos to document conditions. We will then bring the samples back to the lab, where the invertebrates will be extracted. Then we will ID them and see the variety of individuals in the soils and see how they differ and if they correspond to the level of maintenance done to the land above. This will show how the mowing or not mowing will impact soil invertebrate communities.

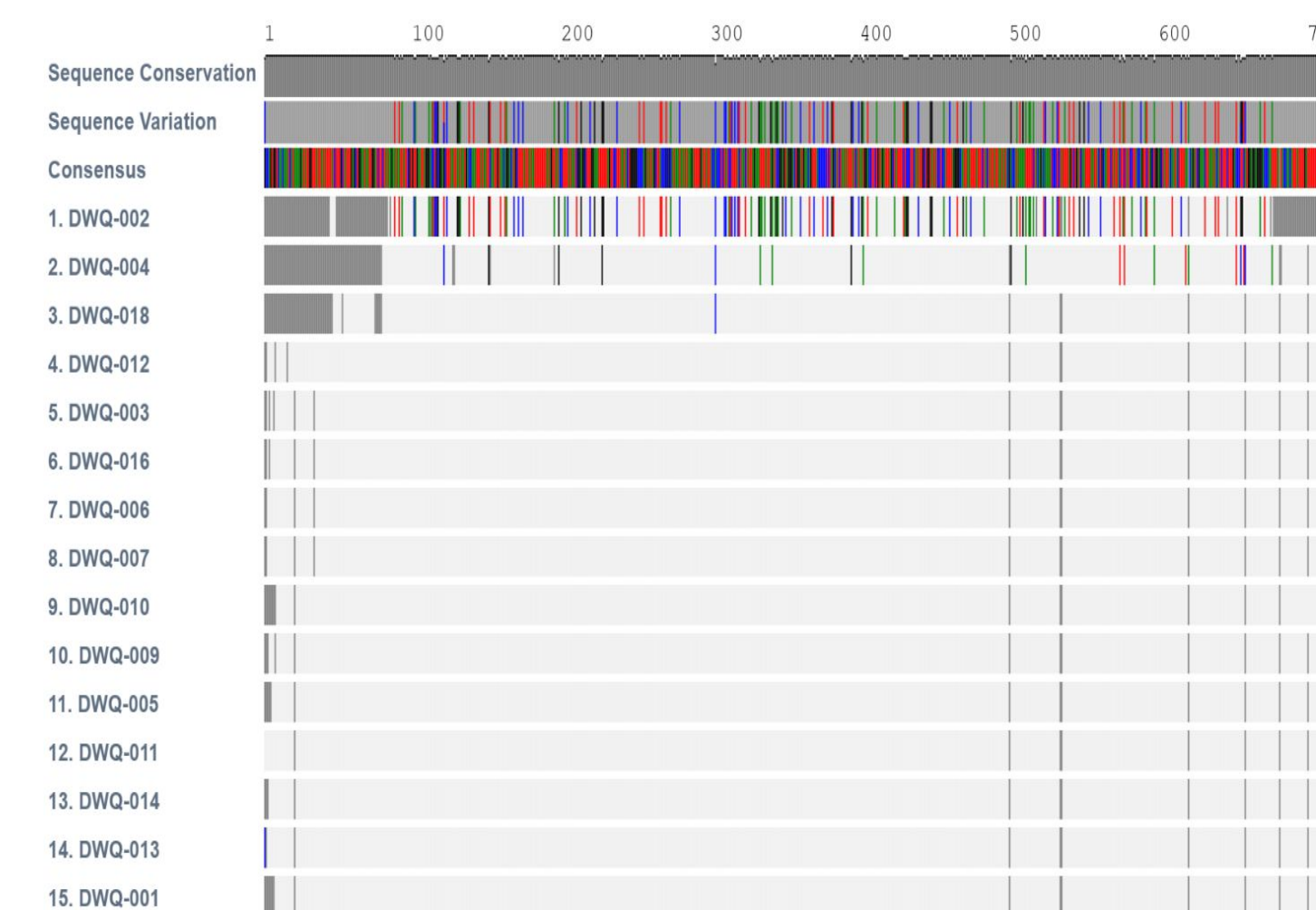
Results

All the samples collected, except for DWQ-002 were identified as *Tapinoma sessile*. *Tapinoma sessile* (Odorous House Ant) is a species of Hymenoptera in the family ants. Hymenoptera (Wasps, Bees, And Ants) is an order of insects that includes Wasps, Bees and Ants.

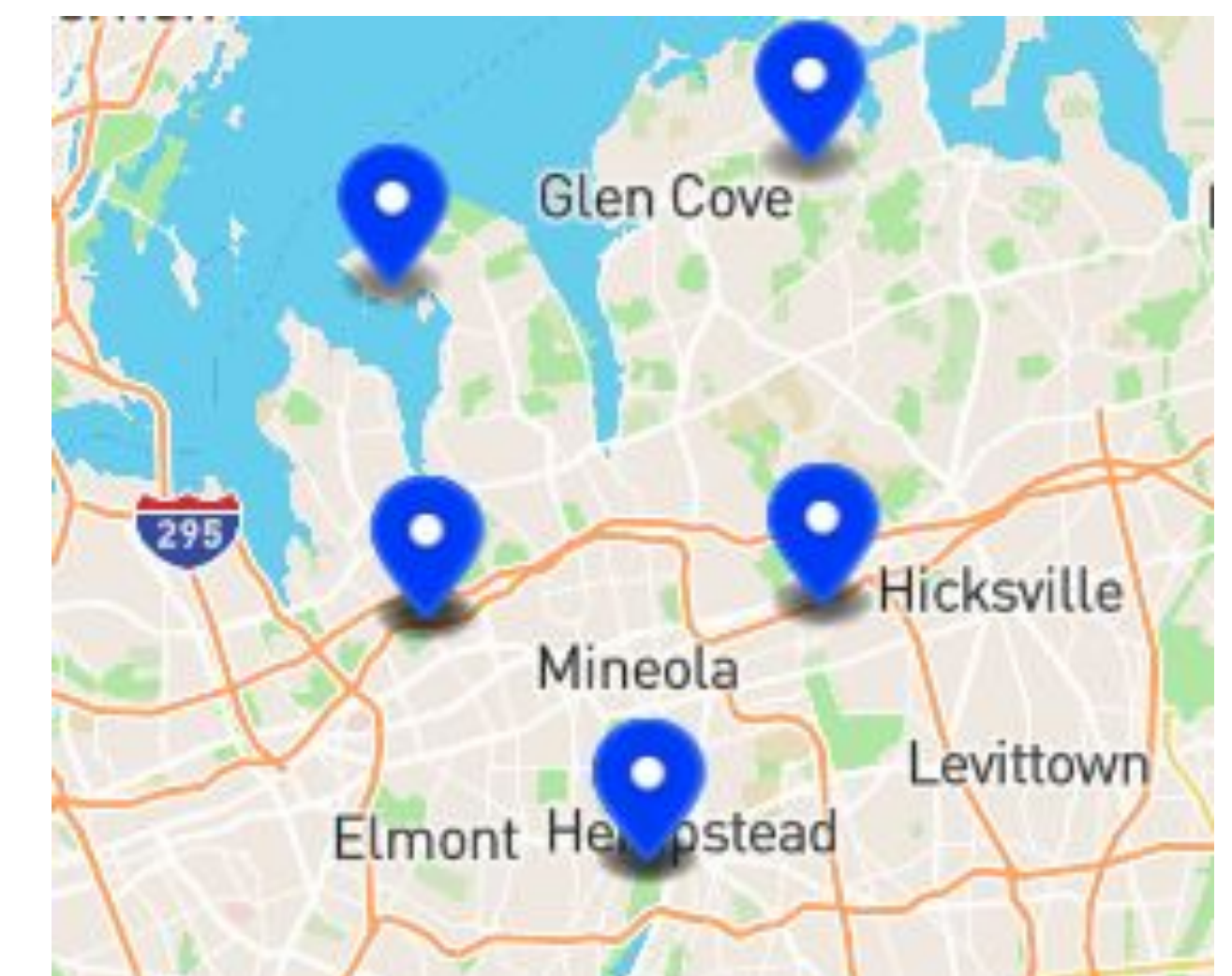
DWQ-002 was identified as *Photinus pyralis*, also known by the common names the common eastern firefly or big dipper firefly, and sometimes called a "lightning bug". DWQ-002 was identified initially as *Tapinoma sessile*, so we suspect some type of contamination.

Data & Evidence

MUSCLE (Multiple Sequence Comparison by Log-Expectation)



Location of samples.



Discussion

From the results of our experiments, it showed that regardless of whether the greenscape is mowed or not, the diversity of invertebrate communities found are most likely not going to change. Given that we tested multiple areas that had various levels of maintenance, it is safe to deduce this consensus applies throughout the invertebrates throughout Long Island. Our results are important as it shows how the make up of species do not change even with some landscapes being better maintained than others. It rules out this variable and variations noticed would most likely be due to other factors. This result may have not supported our original hypothesis because we don't know the exact mowing schedule of some of the landscapes so that unknown variable could have an impact on our results.

Acknowledgments and References

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