Identifying Species of Beetles at Caumsett State Park

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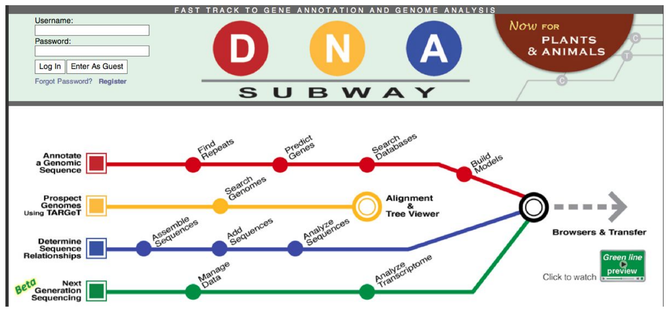
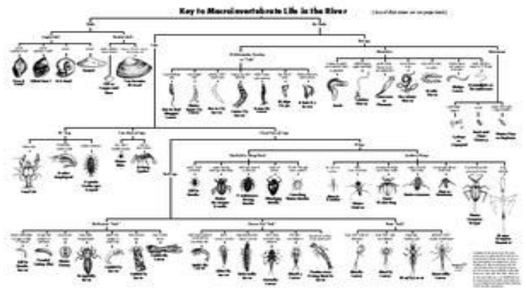
Introduction

The largest order of insects belongs to the order Coleoptera, which consists of 350,000 species of beetles. Beetles live where they can eat and have invaded nearly every type of habitat. Their habitats range from Polar regions to the equator living in damp and covered areas, such as beneath bark on trees or under dense foliage. Beetles can be various factors to the environment, they can live as plant feeders, parasites, scavengers, and predators. Most often beetles are pests to the environment. Bark beetles burrow under trees creating tunnels in the tissue under the bark which affects the passage of nutrients throughout the tree. However, other beetles hold an important role in the environment by recycling organic matter back into the ground leading to soil fertility. Beetles are extremely diverse and play an important part in contributing to the function of the biosphere. Our goal through this project was to identify species of beetles at Caumsett State Park in order to contribute to the Beetle Campaign of the Barcode Long Island project sponsored by Cold Spring Harbor Laboratory.





Results

Lesteva sicula is a member of the Staphylinidae or Rove beetle family and is commonly found in damp areas, in reed litter and flood refuse but also found under logs and stones.

Coleoptera sp. BOLD:AAO 2062 make up the largest order of the class Insecta. They are commonly found all over North America and their range span over many other continents worldwide.

Other samples we collected were identified using a taxonomic key only.

Pill Bugs - Armadillidiidae family

Isopod - Armadillidiidae family

Riffle Beetles - Elmidae family

Discussion

This information does not allow us to make a broad claim regarding the beetle populations of Long Island

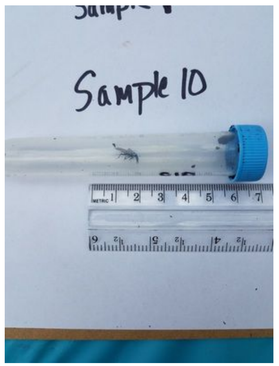
- Small sample size of only thirteen samples
- Time of year when we collected our samples
- Identified using taxonomic keys to macroinvertebrate life

Poor DNA results due to:

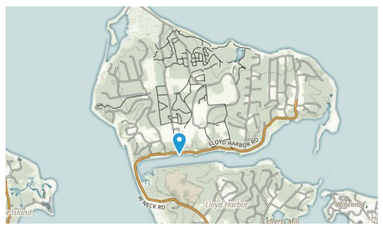
- Shortage on supplies during the DNA Extraction protocol
- Dependency on the taxonomic key makes our results less credible

We do not have enough information to determine how the populations of these species of beetles have changed over time. It is likely that outside factors such as climate change have made an impact on how these species live, however we are not able to hypothesize what these impacts might be with the data we collected in our research.

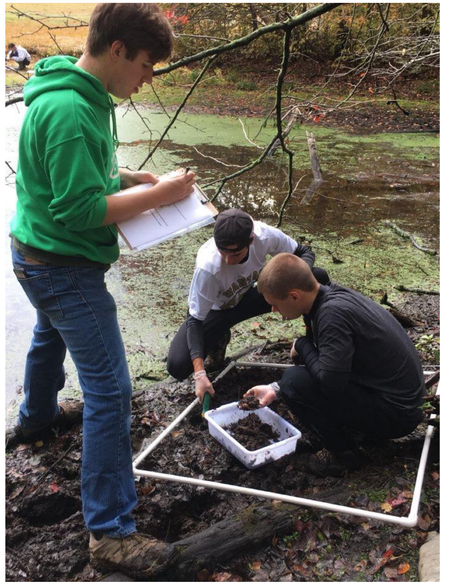
This research could impact the overall field of research by contributing to the work of the Beetle campaign of the Barcode Long Island project centered at Cold Spring Harbor. By providing the lab with this information, we are allowing them to compare our results with those of other researchers across Long Island to create a map of beetle populations as well as to see if there any links between beetle species present in an area and certain geographical characteristics of that same area



Example of Data Collection



Map of Caumsett State Park



Acknowledgements

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