



Urban Eco-Teens  
Returning Interns Project  
• Summer 2022 •

Northwest Woods Study:  
Using Historical Data in the  
Forest to Plan for its Future

**Biodiversity Monitoring**

Made possible with support from  
NYS DEC Environmental Justice  
Community Impact Grant Program





## Audrey

My favorite memory from working on this project was seeing the fawns while hiking.



## Sebastian

I'm Sebastian and my favorite memory of working on the project was seeing a red-tailed hawk fly right in front of us



## Thyla

Hi! I'm Thyla and my favorite memory of working on this project would be walking through a new parts of the park I have never seen before!



## Hudson

Howdy! I'm Hudson and my favorite part was hanging out with everyone in the office while sorting through bugs.

# Project Leaders



Alex Byrne, Field Scientist and  
Research Coordinator



John Butler, Program Director:  
Restoration and Stewardship





# Project Description and Data Collection

30 sites observed in  
diverse locations

- Heavily forested
- Canopy gaps
- Close to water
- Heavy understory
- More invasive species

Conduct the most comprehensive Forest Inventory of Van Cortlandt Park, expanding on the Rapid Site Assessments of the Natural Areas Conservancy.

Data Collection:

- Canopy, Midstory and Understory DBH, diversity and %cover.
- Leaf litter % cover and decomposition stage.
- **Coarse Woody Debris Volume measurements.**
- Herbivory % cover and foraging species choice.
- Fungi Diversity ( In collaboration w/ New York Mycological Society).
- **Arthropod diversity and biomass.**
- **Earthworm Diversity and Biomass**
- Light availability.
- Forest Floor Temperature.
- Soil pH, Moisture and Elemental composition

**During the summer of 2022, returning interns to the Urban Ecology Teen internship will assist Van Cortlandt Park Staff in collecting data on 30 sites spread across the Northwest Forest of Van Cortlandt Park, focussing their efforts on the Asian jumping worm.**





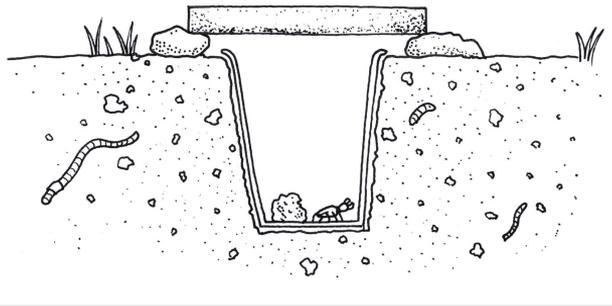
# Pitfall Trap Collection for Arthropod Biodiversity

# Pitfall Trap Collection

A Pitfall trap is a device for capturing ground-dwelling invertebrates which comprises cup which is buried so its mouth is at ground level. The mouth is covered by a roof, to shelter the vessel from rain and prevent larger animals from entering, raised sufficiently to allow access for target species.

Arthropods:

- Arachnids
  - Spiders
  - Harvestmen
  - Mites
- Crustaceans
  - Isopods
- Insects
  - Ants
  - Beetles
  - Crickets and Grasshoppers
  - True bugs
  - Flies



## Filling Traps

-There were 30 sites and each had a pitfall trap in the middle of the area (10x10m).

-The pitfall trap was covered by a thin net to prevent larger animals from falling inside.

-The traps were filled with a combination of dish soap and antifreeze to capture and preserve the insects.

## Collecting Data

-Results were collected after 1 week

-The traps from each plot were watered down to sort the insects and determine which species were present in certain plots

-These results will be used to better understand urban forest biodiversity.



# Jumping Worms

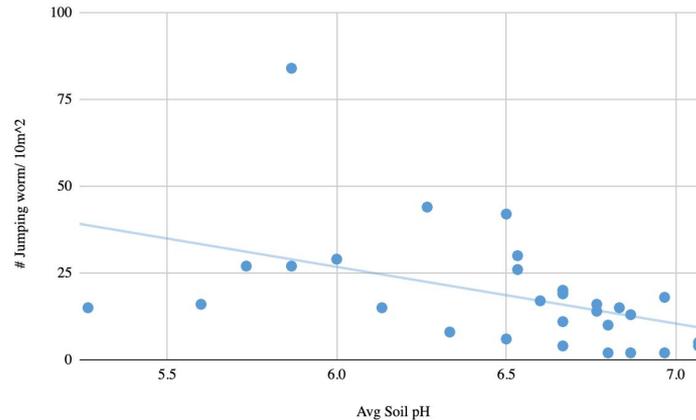
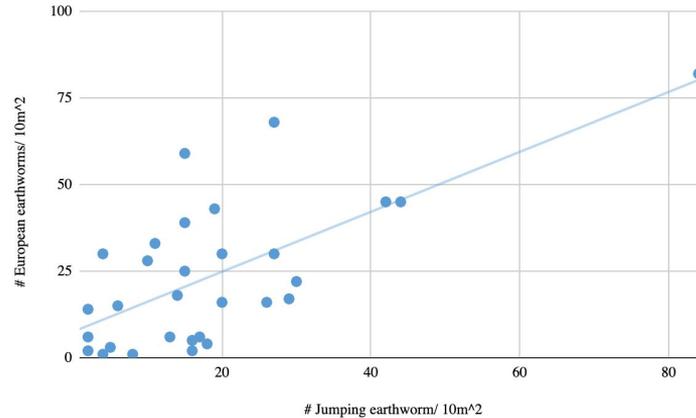
# Jumping Worms

Jumping worms (*Amyntas* sp.) are an invasive species of worm that hurt the environment by changing the composition of the soil.

Total worms collected: 1,274

Number of Jumping Worms: 561

Jumping Worms were present at all 30 sites!



## Do Jumping Worms negatively influence European earthworm populations?

Evidence from the studies suggest that jumping worms do not negatively affect native European earthworm populations. Therefore, competition between these two worms taxa is likely not very strong.

## How do they affect the environment?

Evidence from the studies suggest that Jumping Worms within Van Cortlandt Park make the soil more acidic.

# Out in the Field





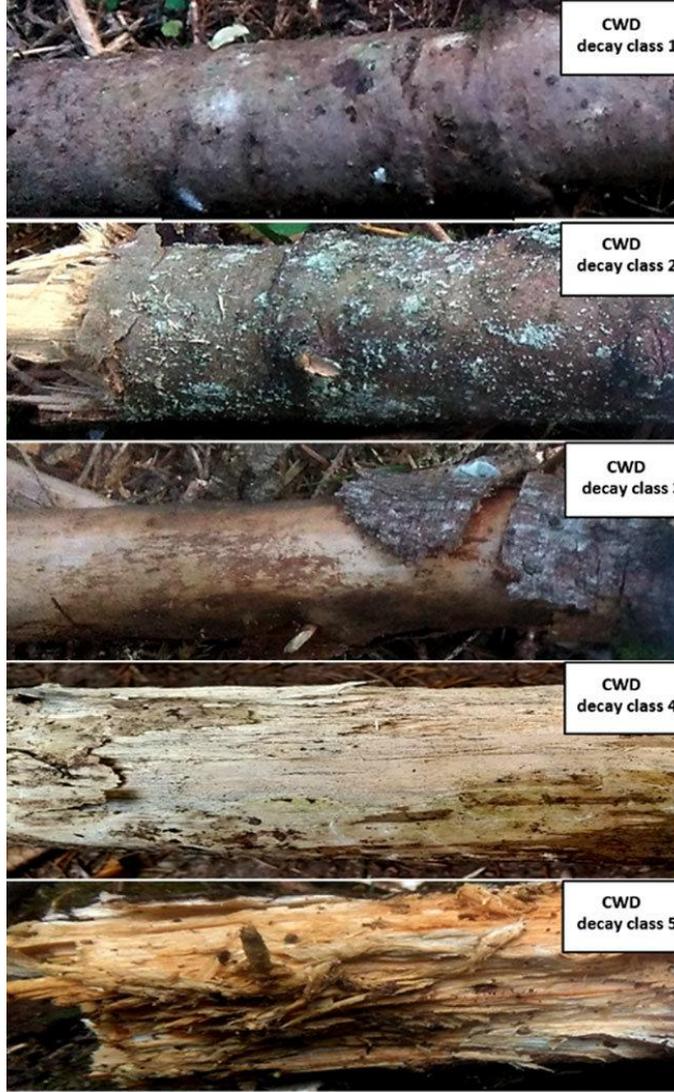
# Coarse Woody Debris (CWD) Decomposition

# Classification System For the decomposition Of CWD.

CWD is an important  
component of forest  
habitat.

Many forest animals  
utilize CWD to survive the  
winter.

The utilization of CWD is  
often dependent on the  
decomposition stage.



Class 1: bark, packed and tight

Class 2: significant loss of bark, but  
wood intact or only slightly decayed

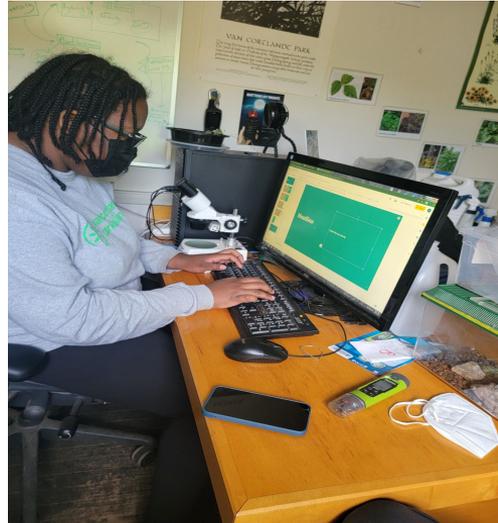
Class 3: outer layers of wood clearly  
soft and decaying, but log structurally  
intact and rigid

Class 4: decayed and soft throughout,  
losing structural integrity, but still  
round and cross-sectional

Class 5: very soft, disintegrating, often  
moss covered, no longer round or  
cross sectioned

Used by the US Forest Service

# CWD Decomposition



## Collecting Data

Data on the level of decomposition was recorded at four of the 30 sites.

$N$  (Number of CWD)=  
371

Mean Decomposition  
Stage= 2.78

# Results

## Findings

**Jumping Worms:** The jumping worms are found throughout the Northwest forest, and are likely to increase their expansion. Future management of the Northwest forest must consider jumping worm management.

**Pitfall Trap:** In total there were 168 trap hours across 30 acres. All 30 traps were successfully recovered. Specimens are currently being processed.

**Coarse Woody Debris:** The most abundant measured decompositional stage of CWD in the Northwest forest is class 3 where the outer layers of wood are clearly soft and decaying but the inside log remains structurally intact.

## Why is this important to know?

By understanding the different habitats and species located throughout the 30 sections the Van Cortlandt Park Alliance (VCPA) will have knowledge on specific areas of focus and a better understanding of the invasive species located at one of the sites. They will be able to bring specific tools to a site or avoid other sites completely, which will allow for more efficient restoration efforts.

## Solutions

1. Do a "pest check" before leaving any international locations you have traveled to! This prevents any invasive bugs from coming to a new place through your luggage.
2. Do not buy any plants or animals from overseas! If the organism is lost, this could cause that species to grow in the new environment since there are no natural predators to help with their population
3. Be aware of any invasive organisms in your area! Be aware and help a neighbor when they are being affected by invasive species to stop them from spreading and negatively affecting your environment!

# Thank You

Questions?

# Urban Eco-Teens

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Con Edison

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## Guest Speakers:

Ingrid Asencio, Wistor Dorta, Armina Del Toro,

Ravneet Kaur, and David Ocasio

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