Mapping Prominent Invasive Species At Longo Wind Hill Farm

NRCA Student: Ananya Aggarwal[1]

Community Partner: Dr. Christine Witkowski[2]

[1]Glastonbury High School; [2]Middlesex Community College[2]

Introduction

Invasive Plant Species

- Do not grow in their natural habitats
- Use resources more efficiently than native species
- Lack native predators and grow rapidly

Negative Impacts

- Decrease the biodiversity of the environment
- Cause environmental damage
- Pose a risk to human health

Longo Wind Hill Farm

Study site

- *Longo Property: 152* acres of trails, tilled fields, and a woodland pond
- *Wind Hill Farm:* non-profit community farm
- Serves as an important green space in Glastonbury, CT

Invasive issues

- Both properties are over run with CT invasives (Fig 1)
- No known identification of the invasives has been conducted

Objectives

To help address the invasive issues at Longo Windhill farm, the objectives of this study was to:

1. Map out the invasive plant species at the property
2. Help bring awareness of invasive species located in Glastonbury, CT, by holding a community invasive plant walk and developing an educational brochure.

Elaeagnus umbellata
Autumn Olive

Celastrus orbiculatus
Oriental Bittersweet

Rosa multiflora
Multiflora Rose

Artemisia vulgaris
Mugwort

Phragmites australis
Common Reed

Berberis thunbergii
Japanese Barberry

Figure 1. Field Photos of common invasive plant species found in Connecticut.

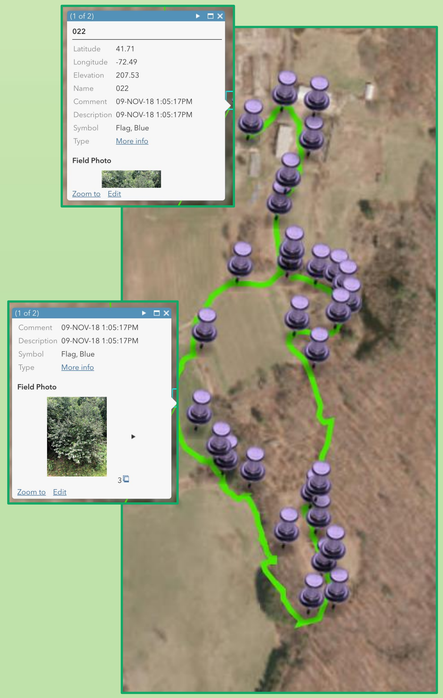
Methods

- During October and November 2018, a Garmin GPS unit (GPSMap 76CSx) was used to collect waypoints on the Novel Trail at Longo Wind Hill Farm in Glastonbury, CT.
- Waypoints were collected at locations of significant invasive species sightings of Multiflora rose, Mugwort, Phragmites, Japaneses barberry, Bittersweet, and Autumn olive.
- Field photos were taken at each sighting and noted in a field journal (Fig. 2).
- Waypoints were uploaded into ArcGIS Online, and field photos were inserted at the respective waypoints to help viewers identify species at each location (Fig. 3).

Figure 2. Ananya and Dr. Witkowski documenting Mugwort in the field journal and using a GPS unit at Longo Wind Hill Farm.

Interactive Map

An interactive map was created using the ArcGIS website (Fig. 3). This map contains pop-up boxes detailing the invasive species found at each waypoint as well as a field photo showing the species.



Scan here to check out the interactive map!

Educational Walk & Brochure

- The educational walk will be hosted held in May 2019 at Longo Wind Hill Farm in partnership with the Land Heritage Coalition of Glastonbury.
- Topics will include: issues with invasives, species identification, and consequences to native communities when not removed.
- The walk will follow the novel trail plotted and will showcase the invasives located at the various waypoints on the map.
- The brochure (Fig. 4) will be distributed at the walk, and details description of the species, ecological impacts, and methods to remove the species, along with resource websites.

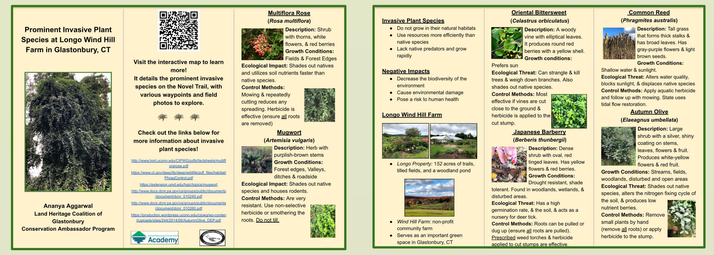


Figure 4. The brochure that will be distributed at the Educational Walk in May 2019

Conclusion

The interactive map and educational walk will educate the people of Glastonbury about invasive species and how to recognize them in our community. The interactive map will be uploaded onto the Land Heritage Community of Glastonbury's (LHC) website and thus be easily available for the people of Glastonbury to access. By educating the people of Glastonbury, people may increase their maintenance of invasive species by safely removing them from their property and engaging in town work-days. Our hope is that the outcomes of this project will help make Glastonbury a safer, more ecologically diverse town.

Acknowledgments

I would like to thank my community partner, Dr. Christine Witkowski, for all of her help and guidance in collecting data, making my poster, and teaching me about invasive species. I would also like to thank Ms. Abby Beissinger for all of the time she spent helping me collect my data, create my map, and creating my poster. I would like to thank the Land Heritage Coalition (LHC) for providing me with a scholarship to participate in the Conservation Ambassador Program. I would like to thank all of the staff at the Conservation Ambassador Program for exposing me to a new field and teaching me about conserving our environment. Finally, I would like to thank my family for their constant support throughout this entire process.

References

Connecticut Forest and Park Association. *Invasive plant common in Connecticut.*

Department of Conservation and Natural Resources. *Japanese and european barberry*

Department of Conservation and Natural Resources. *Oriental bittersweet.*

Department of Environmental Protection. (2010). *Autumn olive family (eleagnaceae)*

Department of Environmental Protection Environmental and Geographic Information. (2010). *Multiflora rose rosa multiflora rose family (rosaceae).*

IET Department of the College of Agriculture and Natural Resources. (2019). Mugwort.

The University of Georgia Center for Invasive Species and Ecosystem Health. (2018)Mugwort artemisia vulgaris L.

Wolfe, R. (2018). *Controlling invasive phragmites in connecticut's wetlands*.