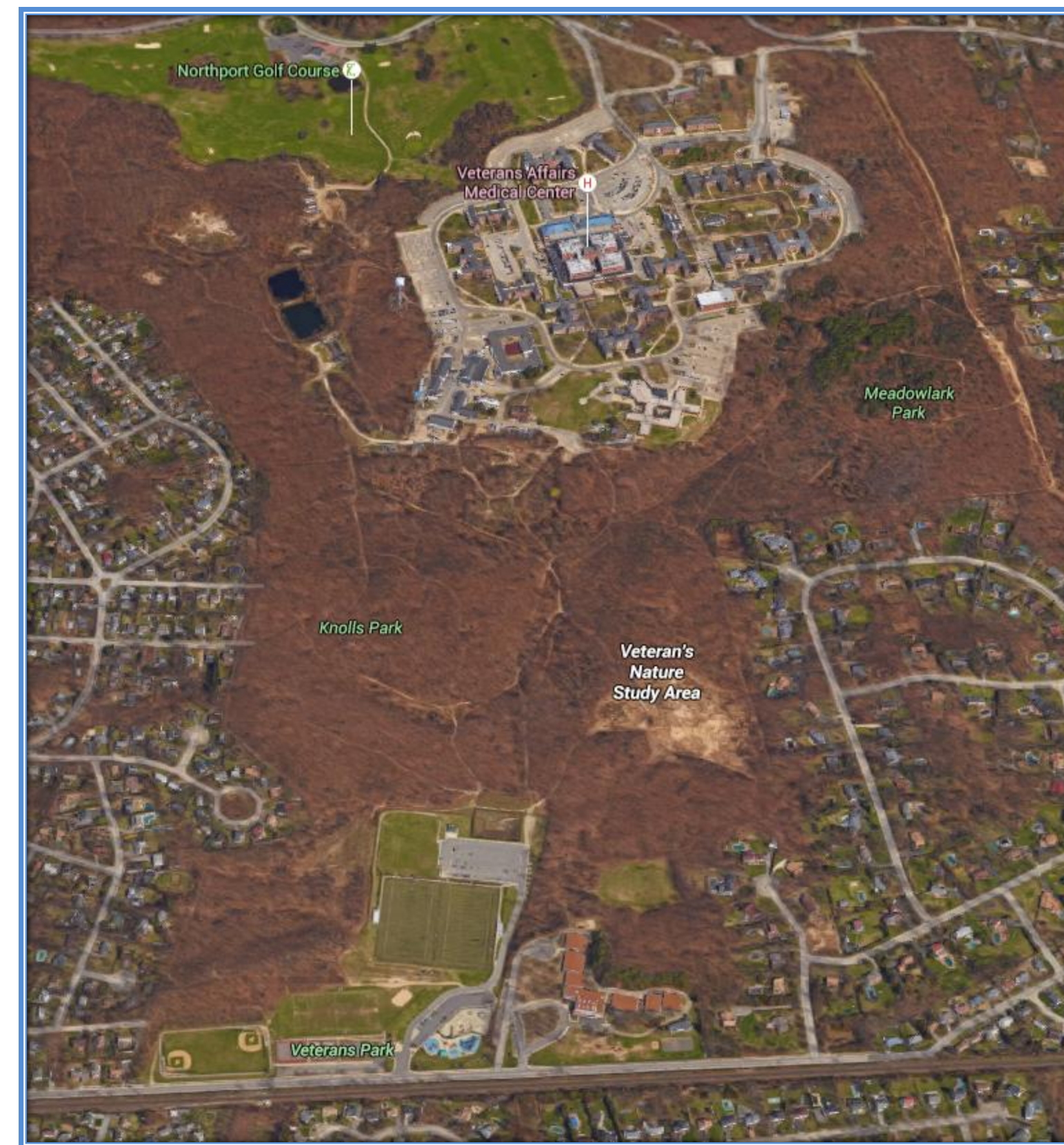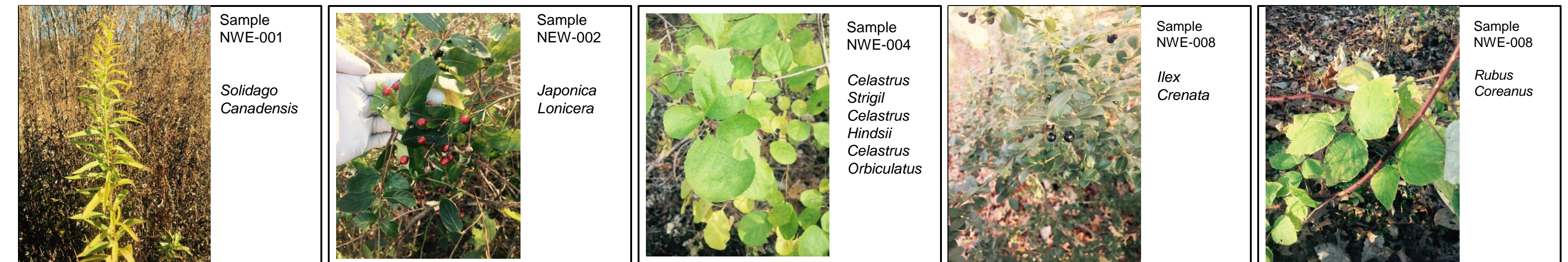# Veterans Nature Study Area, East Northport-A Biodiversity Study

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Northport High School

BARCODE LONG ISLAND

CSH Cold Spring Harbor Laboratory DNA LEARNING CENTER

NATIONAL INSTITUTES OF HEALTH

SEPA SCIENCE EDUCATION PARTNERSHIP AWARD
Supported by the National Institutes of Health

Introduction

- For our biodiversity study, we wanted to find information regarding plant species from the Veterans Nature Study Area, a nature preserve of the Town of Huntington.

- The Veterans Nature Study Area is located adjacent to Bellerose Avenue Elementary School and the Northport Veterans Hospital.

- To perform this project, we collected samples of plants close to the trails in this area to identify the species that are there.

- We chose to survey this because a greater knowledge of what native, invasive, and harmful species can be found in this area would be useful to the teachers who want to show their students the Veterans Nature Study Area.
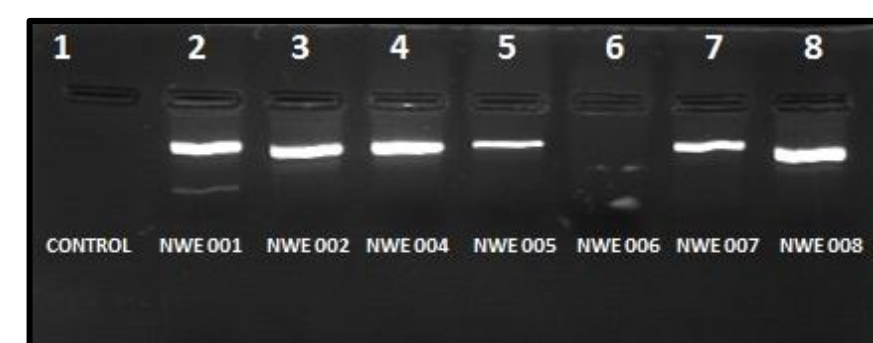

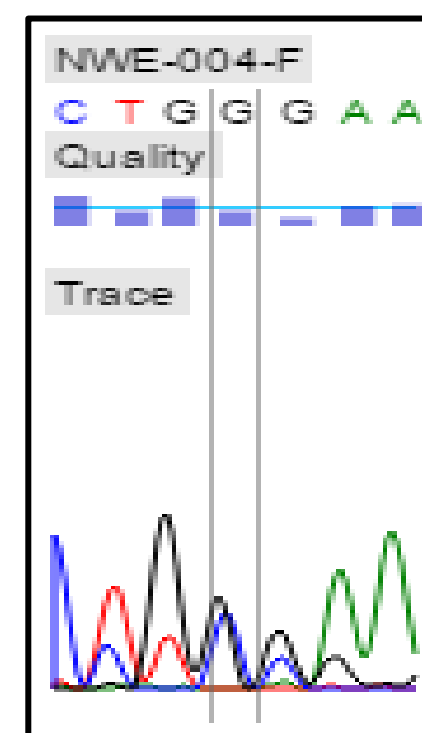## Materials & Methods

Collected 18 Samples

Isolated DNA

Amplified DNA by PCR using thermal Cycler

Analyzed PCR products through gel electrophoresis

Sequenced PCR products and analyzed results using bioinformatics

Results

Sample ID Code	Genus Species	Sample ID Code	Genus Species
NWE-001	*Solidago canadensis*	NWE-002	*Lonicera japonica*
NWE-004:	*Celastrus Strigil, Celastrus Hindsii, Celastrus Orbiculatus*	NWE-005:	*Sassafras Albidum*
NWE-007:	*Anomodon Attenuatus*	NWE-008:	*Ilex crenata*
NWE-010:	*Rosa Xanthina*	NWE-011:	*Rubus coreanus*
NWE-012:	*Lonicera Japonica*	NWE-013	*Leucobryum sanctum, Campylopus pilifer Dicranum polysetum*
NWE-014:	*Carex Carsei*	NWE-016:	*Rhodotypos scandens*

Examples of Specimens Collected & Sequenced

Sample NWE-001 — *Solidago Canadensis*
Sample NEW-002 — *Japonica Lonicera*
Sample NWE-004 — *Celastrus Strigil Celastrus Hindsii Celastrus Orbiculatus*
Sample NWE-008 — *Ilex Crenata*
Sample NWE-008 — *Rubus Coreanus*

Discussion

- Of the 18 specimens collected, we were able to sequence 12 of the collected samples, allowing us to view the biodiversity of the Veterans Nature Study Area.

- When using the DNA subway we encountered some difficulties when utilizing the "consensus editor", as the program was not properly identify the base pair. This was specifically experienced in samples NWE-002. NWE-004, NWE-012, and NWE-013. In sample NWE-004 though, we noticed that it was unclear in positions 9, 18, 21, 35, 104, 149, 165, 171, 213, 229, 252, 280, 290, 302, 304, and 315 (a strand of 319 bp) what base pair was present as two were identified in the same position.

- Sample NWE-001 was identified as *Solidago Canadensis*. Sample NWE-002 was determined to be most closely related to *Lonicera Japonica*. Sample NWE-004 was identified to belong to the *Celastrus* genus, as it had 0 mismatches with *Celastrus Strigil, Celastrus Hindsii,* and *Celastrus Orbiculatus*. Sample NWE-005 was identified as *Sassafras Albidum*. Sample NWE-007 was most closely related to *Anomodon Attenuatus*. Sample NWE-008 was identified to be *Ilex Crenata*. Sample NWE-010 was identified to be of the *Rosa* genus, matching with 13 different species of this genus. Sample NWE-011 was most closely related to *Rubus Coreanus*. Sample NWE-0012 was most closely related to *Lonicera Japonica*. Sample NWE-013 was most closely related to, with one mismatch, to *Leucobryum sanctum*. Sample NWE-014 was most closely related to, with 13 mismatches, *Carex Carsei*. Sample NWE-016 was identified as *Rhodotypos scandens*.

References

- "Non-Native Plant Species Invasiveness Assessments." New York Invasive Species Information. Cornell University, n.d. Web. 1 Dec. 2015. Steering Committee of the Long Island Weed Management Area.

- "Long Island Coordinated Invasive Plant Management Plan." 2002. Web. 1 Dec. 2015.

- "Veterans Nature Study Area Reopened After Decades-Long Cleanup | Patch." Northport, NY Patch. 30 Apr. 2013. Web. 28 Nov. 2015.

Acknowledgments

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