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### EEOS 406: GIT Data Collection and Field Methods

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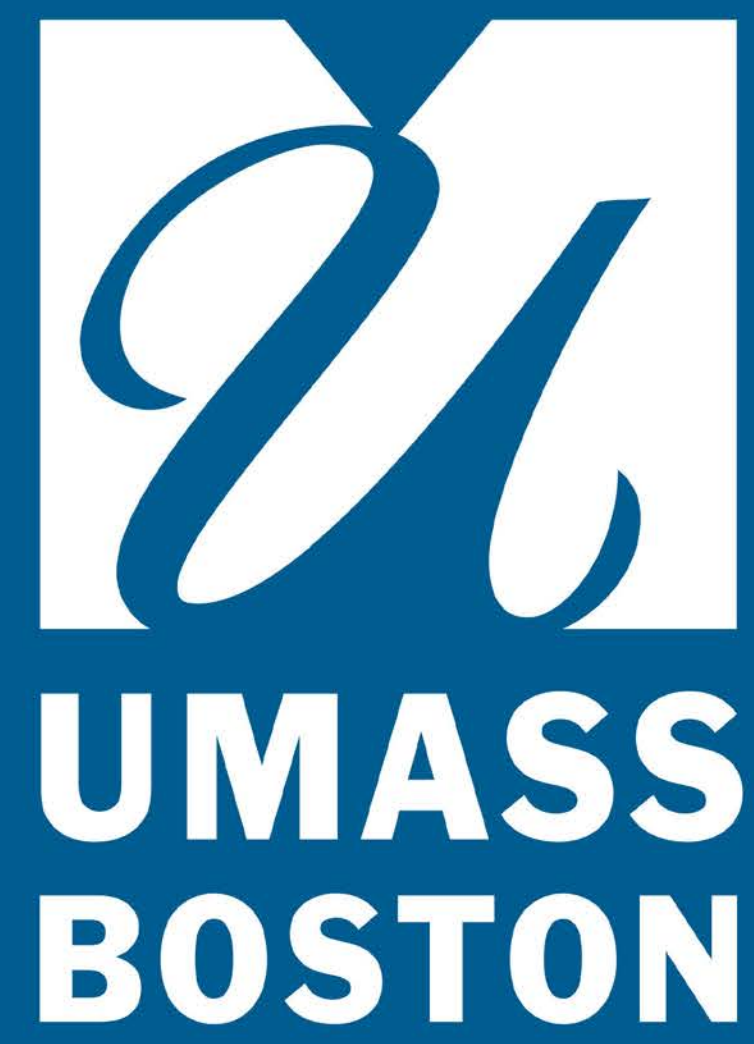
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# EEOS 406: GIT Data Collection and Field Methods

UMB Nantucket Field Station (NFS) and Nantucket Conservation Foundation (NCF)  
Helenmary Hotz, GIS Lab Manager - UMass Boston School for the Environment

## Summary/Abstract

**Spotted knapweed**, scientific name *Centaurea stoebe* L. ssp. *Micranthos*

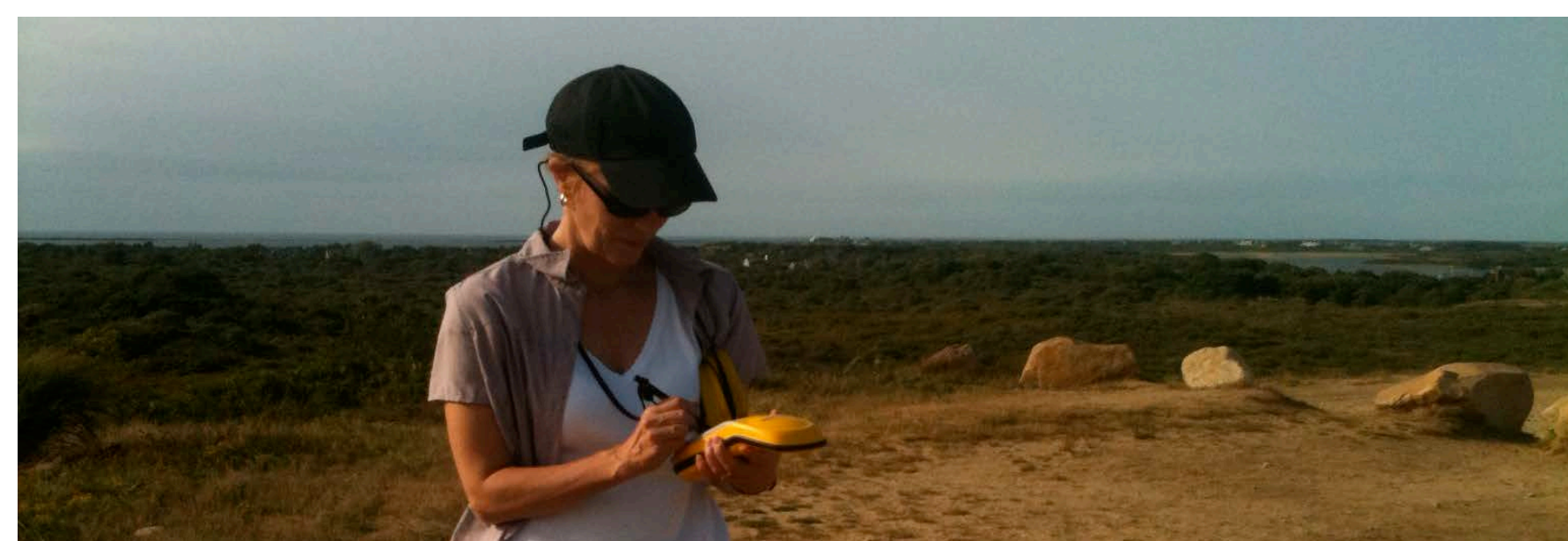


As part of EEOS 406 course work, students located and mapped distributions of an invasive plant, Spotted knapweed, on Nantucket for the Nantucket Conservation Foundation. Once established, the plant continues to spread to surrounding habitat and outcompetes native species. Prior to their field work, Dr. Sarah Oktay (NFS) and Kelly Omand (NCF) briefed the students on the history of the species on Nantucket. Kelly assigned the location for data collection to further support ongoing NCF research of the species.

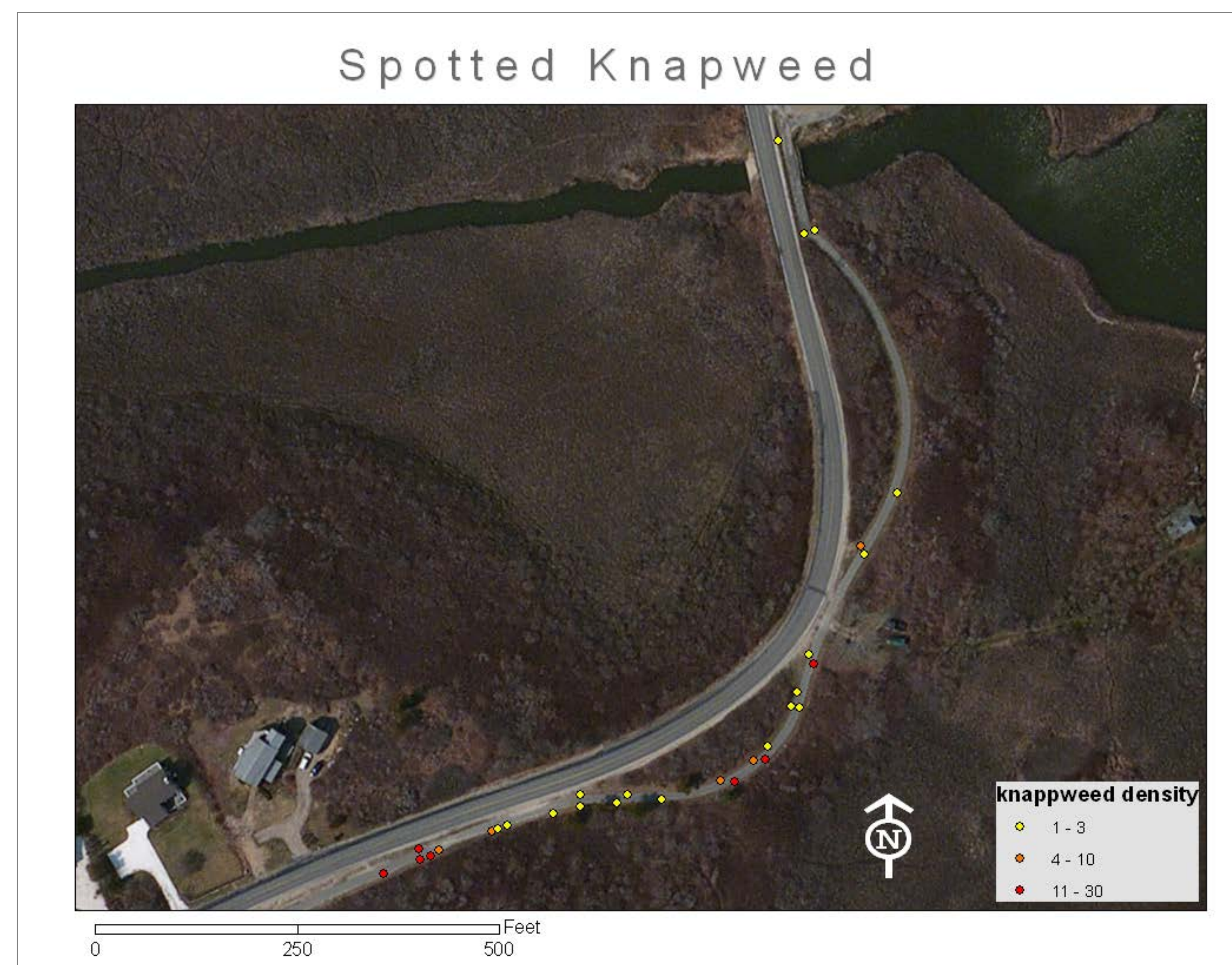
## Goals and Objectives

Through a community-engaged learning format students were enabled to:

- Understand concepts, technologies and infrastructure behind GPS science
- Learn how to collect and export data on a Trimble GeoXH Explorer GPS unit
- Import data dictionary to unit for data collection
- Gain practice in plant species recognition
- Analyze the spatial distribution of the plant
- Understand the relationship between GIS and GPS
- Gain first-hand experience conducting research for an environmental nonprofit organization



## Results/Impacts



Nantucket serves as a unique living laboratory for students to observe the impacts of invasive species on natural habitats in a closed system.

Students created maps of Spotted knapweed spatial distribution to support NCF's effort to track, understand, and eventually eradicate the species.

## Approaches and Methods

### GPS data collection:

- Trimble GeoXH units were used for data collection
- Terra Sync software was used for data collection
- Pathfinder software was used for differential correction of data and export as shapefile

### Mapping:

- Imported shapefile to ArcMap for mapping and analysis
- Produced data and maps for Nantucket Conservation Foundation

## Conclusion/Next Steps

Discovery, location and treatment of invasive plant species is of primary importance on Nantucket. The partnership with NCF is an ongoing relationship with reciprocity at its core. Students will return to the island 2014 to continue this work.



## Partnership Information

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