

Harvestman species composition between habitats on Nantucket Island

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ABSTRACT

From 2006 through 2008, we collected surface invertebrate specimens using pitfall traps from a variety of habitats on Nantucket Island and Tuckernuck Island, Massachusetts. In this project, we sorted 413 harvestmen from these samples, identified all specimens to species, and compared species distributions within four general habitat types. We identified all four species that appear on a historic species list from **the late 1920's and we added the non-native species *Phalangium opilio***. We found that *H. maculosus* may prefer open heathland habitat over dense heathland and tupelo forest. Other species showed no significant preference for a specific habitat. We continue to sort specimens.

Acknowledgments

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INTRODUCTION

Harvestmen (Arachnida, Opiliones) are the third-largest and among the oldest group of arachnids in the world.

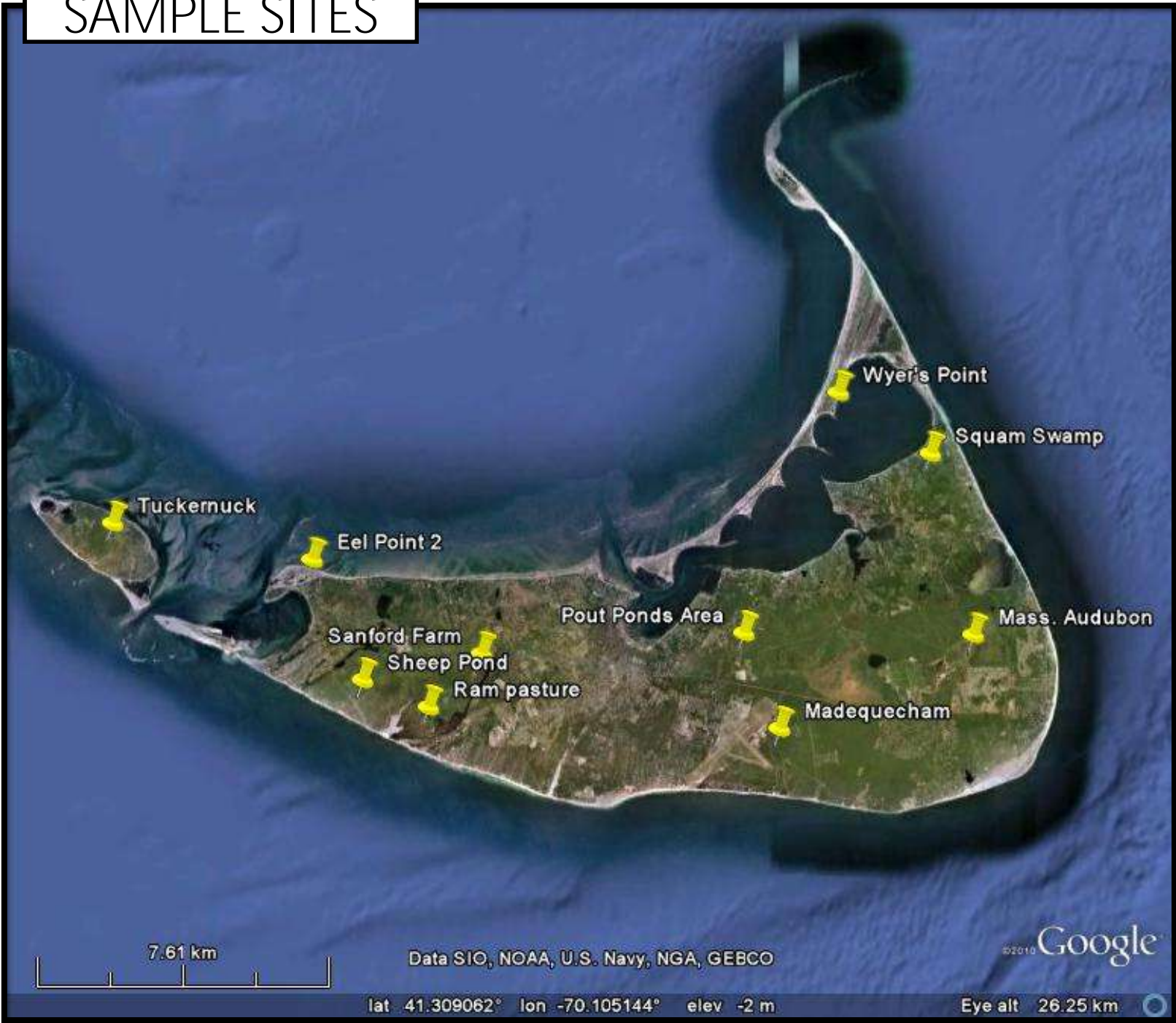
In the late 1920's, James Emerton identified four Harvestmen species on Nantucket Island: *Hadrobunus maculosus*, *Leiobunum ventricosum*, *Leiobunum formosum*, and *Leiobunum vittatum* (Johnson 1930).

Nantucket Island has seen drastic changes in vegetation over the last half century and these changes may have affected the species composition of harvestmen.

The purpose of our project was to use previously collected arthropod samples to compile a new species list for the island.

We also were interested in comparing harvestmen composition and habitat.

SAMPLE SITES



METHODS

Collection:

- Sorted harvestmen from previously collected ground arthropod samples
- Samples from 2006—2008
- Used pitfall traps to collect samples.

Habitat Classification:

- Open Heathland: Vegetation below one meter high with areas of shrubs interspersed with grassland and dispersed trees
- Dense Heathland: Predominated by heath shrubs, many over one meter in height, with few open grassland areas
- Dune: Located in dunes in close proximity to water.
- Tupelo Forest: Predominated by Tupelo trees (*Nyssa sylvatica*) approximately 10-15 meters in height.

RESULTS

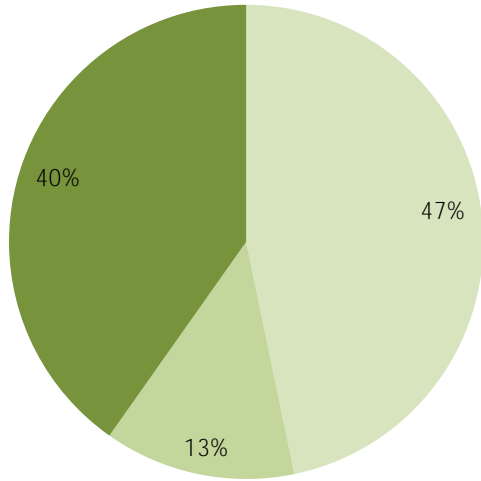
- Sorted 413 harvestmen specimens from samples comprising 1,315 trap nights.
- Identified five species: *Hadrobunus maculosus*, *Leiobunum ventricosum*, *Leiobunum formosum*, *Leiobunum vittatum*, and *Phalangium opilio*. *P. opilio* is new for Nantucket.
- *Hadrobunus maculosus* was the most abundant species.
- More harvestmen were captured per trap in open heathland and grassland compared to other habitats.
- The fewest trap nights were recorded in dune habitat and these samples yielded the fewest number of specimens per trap.
- There was a significant difference in distribution between habitats only for *H. maculosus*.
- *Leiobunum vittatum* was only captured on Tuckernuck Island.

Comparing species distributions between tupelo, open heathland, and dense heathland.

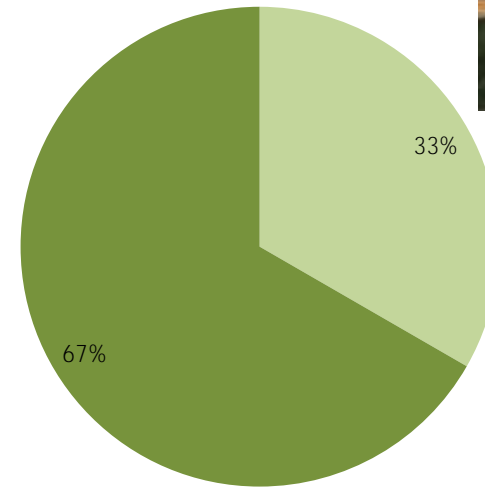
	One-way ANOVA
<i>H. maculosus</i>	p < 0.001
<i>L. ventricosum</i>	p = 0.536
<i>L. formosum</i>	p = 0.160

HABITAT COMPARISONS

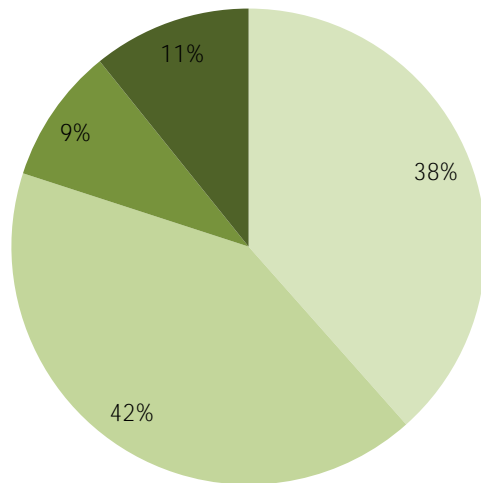
Tupelo Forest (n = 92)



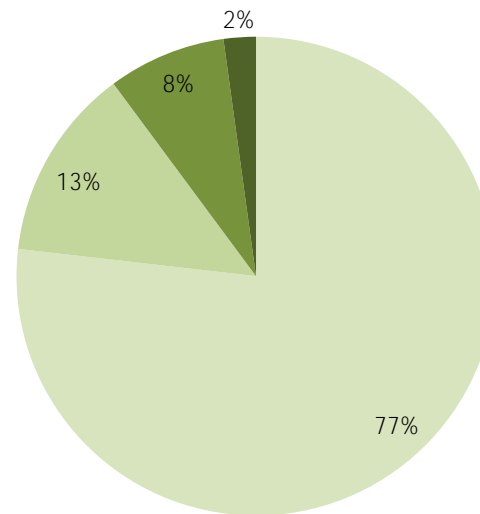
Dune (n = 6)



Dense Heathland/Grassland (n = 65)



Open Heathland/Grassland (n = 138)



- maculosus
- ventricosum
- formosum
- Unidentified

DISCUSSION

- We identified all four species that Emerton found 80 years ago, although *L. vittatum* was only collected on Tuckernuck Island.
- We assume that *L. vittatum* still exists on Nantucket and that we will find it through further searching.
- We added the additional non-native species *P. opilio*.
- We will continue sorting harvestmen from previously collected samples and continue collecting new specimens to look for un-reported species.



Hadrobunus maculosus



Leiobunum ventricosum



Phalangium opilio



Leiobunum vittatum



Leiobunum formosum

Harvestmen have one body segment and eight legs.



<http://fieldbioinohio.blogspot.com/2010/09/lorain-county-and-another-new-exotic.html>

Contrary to popular myth, they have no venom whatsoever.