

# LEPIDOPTERA

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Environmental Scholars Program



# Introduction

- Lepidoptera → Order of class Insecta
  - Includes moths and butterflies
  - More than 180, 000 species

# Lepidoptera diet

- Specialists → feed on specific plants or types of food
- Generalists → have a broader diet

# Objectives

- Initially → body size/ diet correlation  
(specialist vs. generalists)
- Actually → bait effectiveness  
(banana based vs. apple based)

# Materials and Methods

## Butterfly bait traps (cone-type)

→ Baited with two different kinds of juice

### Apple-based bait

- Apple
- Beer
- Molasses
- White & brown sugar
- Honey
- Yeast

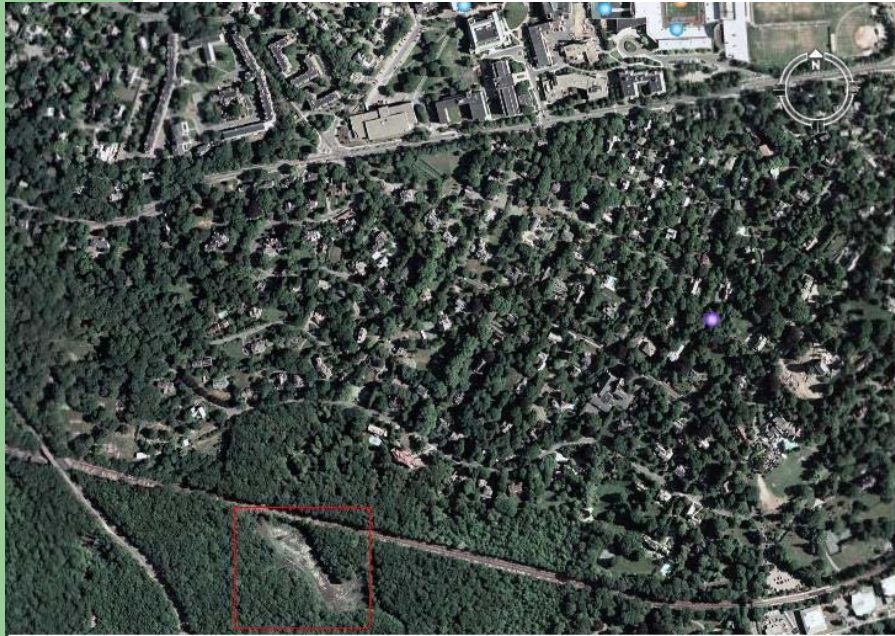
(7-8 day fermentation)

### Banana-based bait

- Overripe bananas
  - Brown sugar
  - Prune juice
  - Yeast
- (2-3 day fermentation)



# Materials and Methods



Location: Hammond-Pond Conservation Area

Edge habitat → between bog and forest

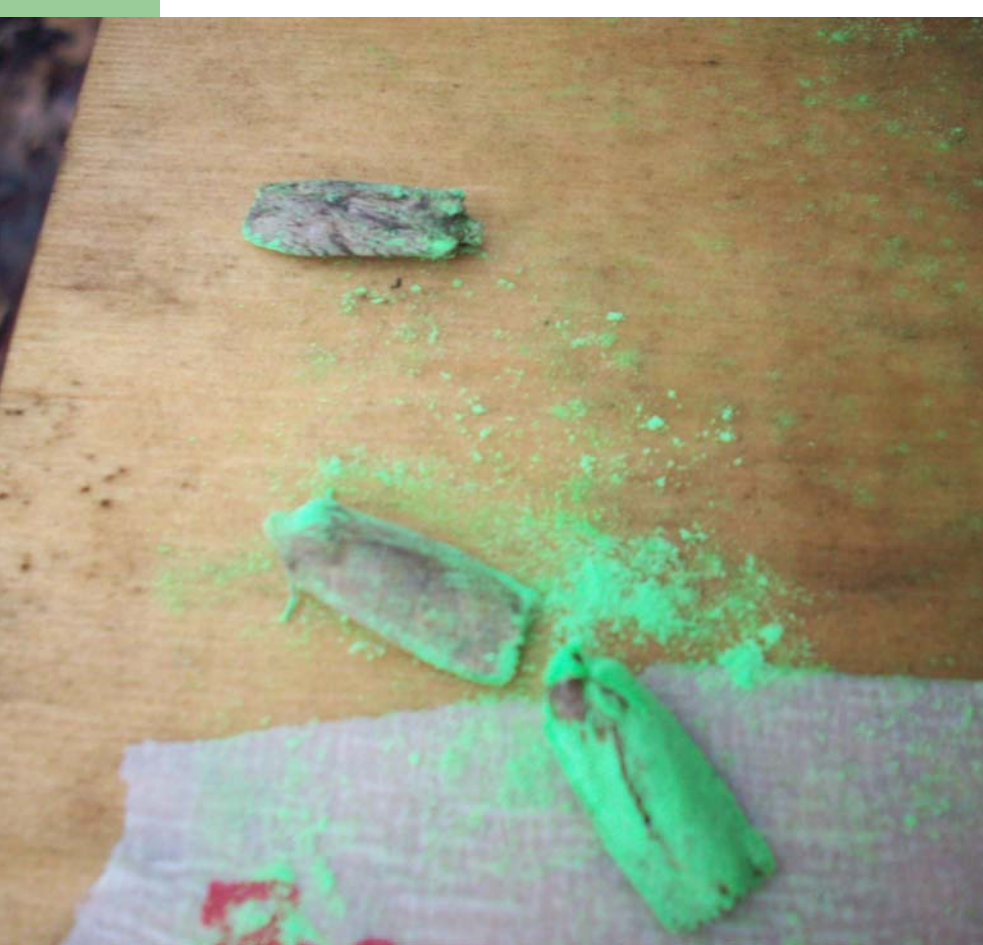


# Materials and Methods

Mark, release and recapture

UV dust marker

- Nail polish marker



# Apple-based bait capture (pictures)





# Banana-based captures

3.30/ 30°F / sunny



4.1/ 61 ° F/ Cloudy



4/5



51° F

sunny



4.2/ 50° F/ sunny, windy



4.10/ 71° F / sunny

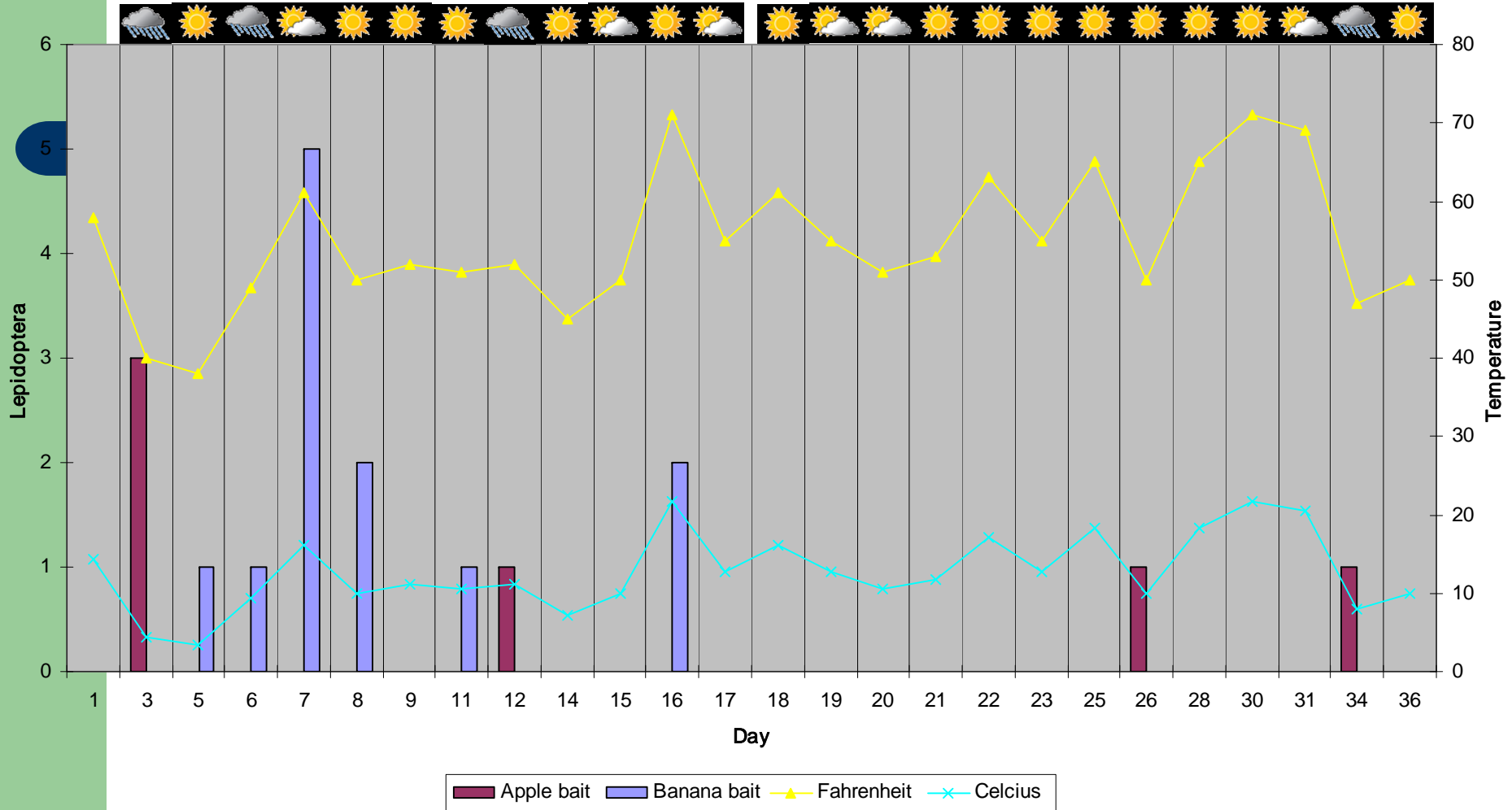


# Eastern Comma (*Polygonia comma*)

4.12 / 61 \* F / slightly cloudy



# Bait capture efficiency comparison



Rainy

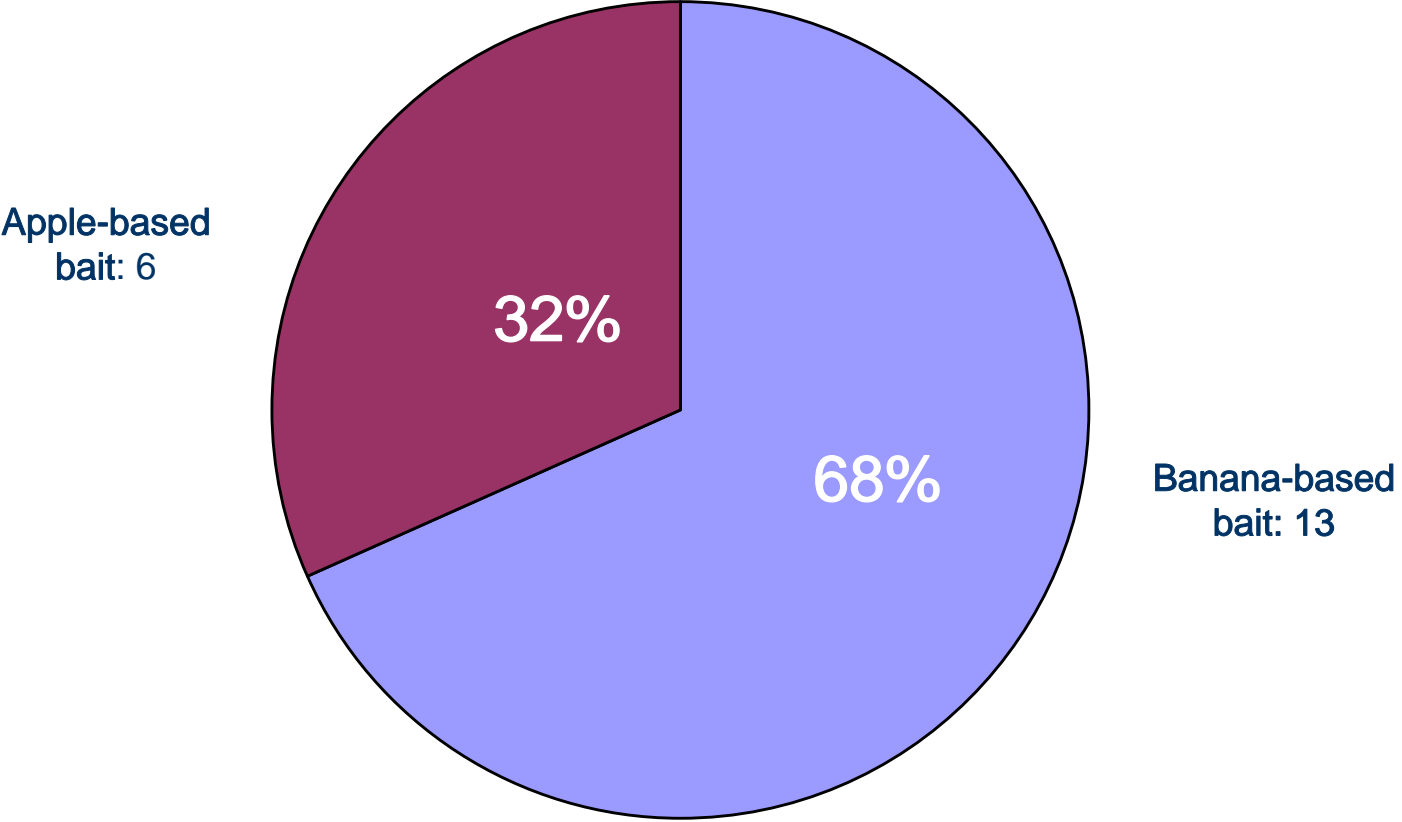


Sunny



Overcast

# Bait efficiencies



Total captures: 19

# Conclusions

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- The data seems to indicate that Lepidoptera are more attracted to banana-based bait
- Banana-based bait trapped a greater variety of Lepidoptera species

# Further experimentation

- Alter ingredients of bait or introduce new ones (fruit) to determine what Lepidoptera are most attracted to
- Determine how efficient baits are to attract other insects
- Compare Lepidoptera captured on campus to that captured in the conservation area → test for range.

# Sources

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- Laaksonen, J., Laaksonen, T., Itämies, J., Rytönen, S. & Välimäki, P. 2006: Abnew efficient bait-trap model for Lepidoptera surveys – the “Oulu” model. *Entomologica Fennica* 17: 153–160.
- Narisu, J., Lockwood, A., Schell, S. P. 1999. A novel mark-recapture technique and its application to monitoring the direction and distance of local movements of rangeland grasshoppers (Orthoptera: Acrididae) in the context of pest management. *Journal of Applied Ecology*. 36: 604-617.