HUMANS VS BIODIVERSITY: INFLUENCE OF RECREATIONAL HIKING ON ANIMALS

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Eastern Coyote

White Tailed Deer

Red Fox

WHY SHOULD YOU CARE?

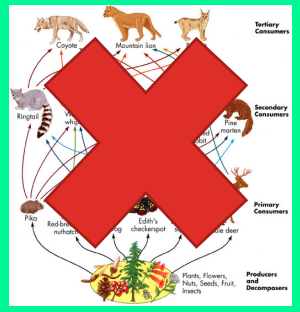
Habitat Destruction
Hunting of Predators
Human Disturbances

Decline in Predator Species

Increase in Mesoconsumer Species

The understories of forests to disappear

The Destruction of Ecosystems/ Food Chains



Many large predators have been driven away by humans
The goal for this project is to see how humans affect biodiversity

RESEARCH QUESTION 1 & HYPOTHESIS

Research Question 1

How do human disturbances (noise, habitat fragmentation, and recreational hiking) affect the presence of mesocarnivores in certain areas?

Hypothesis

If there is an area with more humans present, then predators are less likely to appear there.

If more humans are present in an area, then prey are more likely to appear there

RESEARCH QUESTION 2 & HYPOTHESIS

Research Question 2

How does predator lure affect the behavior of mesocarnivores? Does it cause them to leave their comfort zones and force them to move closer to areas with more humans?

Hypothesis

If lure is used, then predators within a close proximity will be attracted toward the cameras.

STUDY DESIGN

Type of Project: Experimental, Observational

Experimental when working with lure, observational without lure

Independent Variable(s)

- Trail Usage
- Distance from Trail

12 CAMERAS

Dependent Variable(s)

Presence of Animals

6 split up between 3 High Use Trails

EACH TRAIL

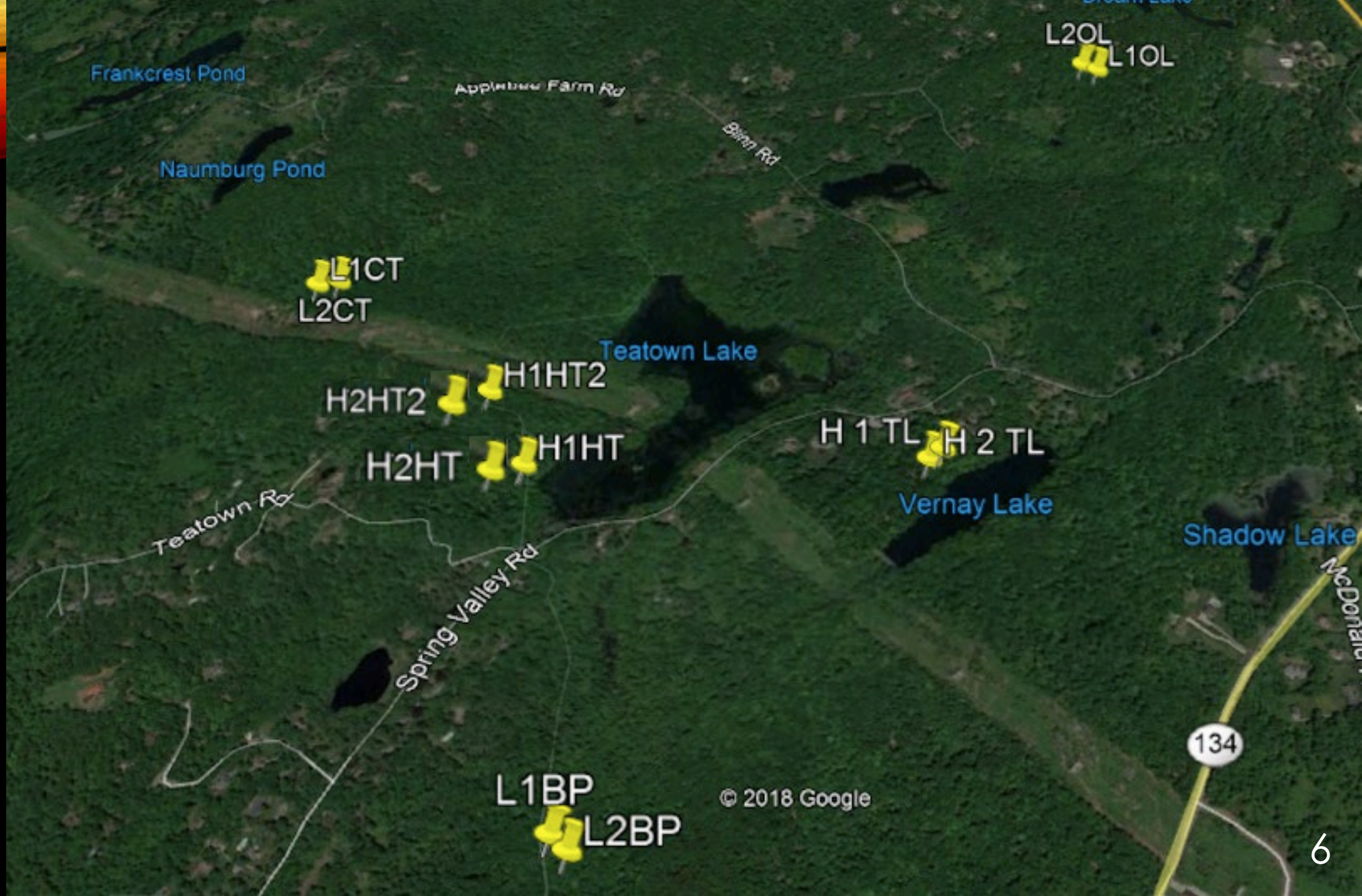
- One camera 10 meters from trail
- One camera 50 meters from trail

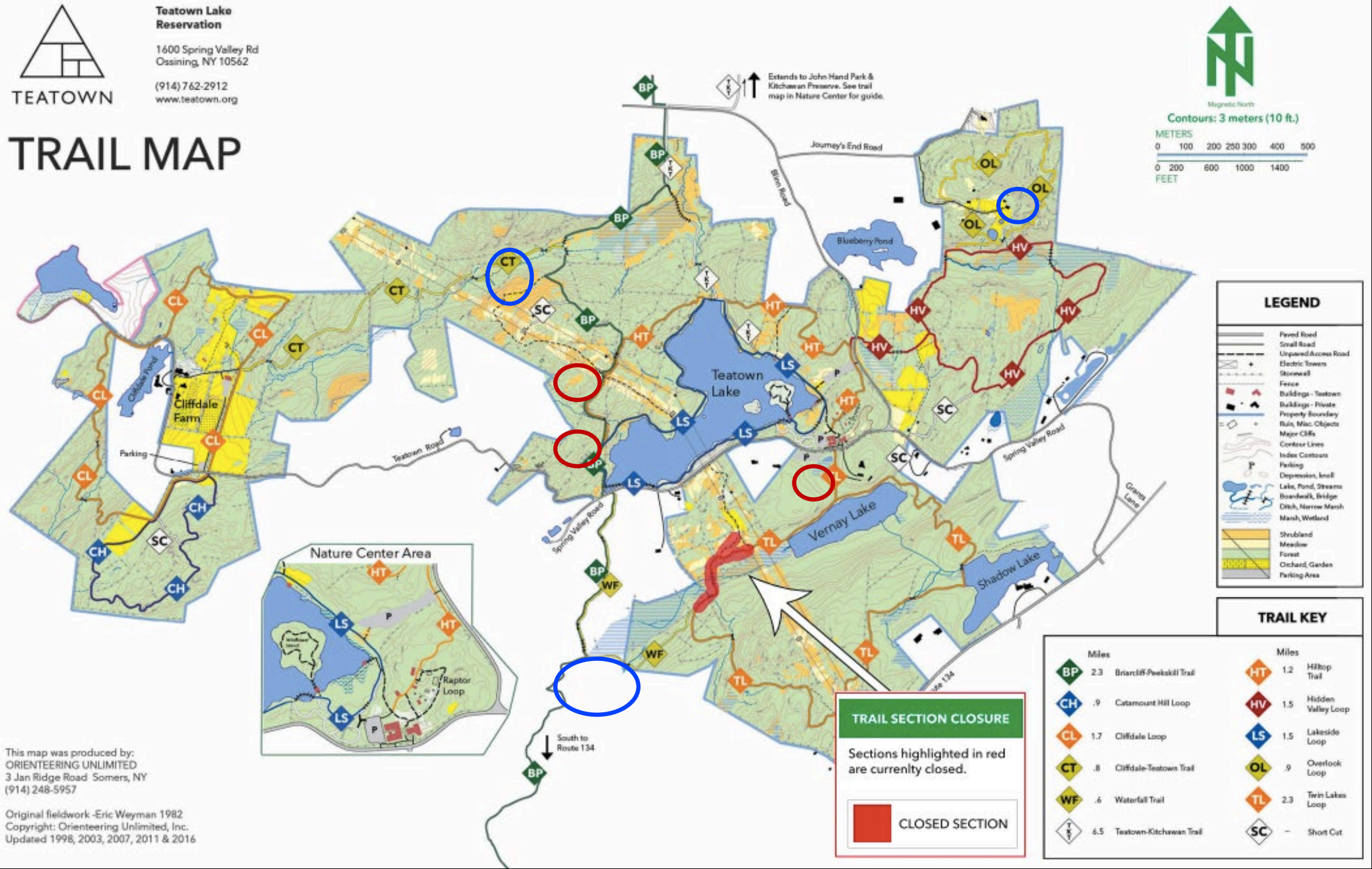
6 split up between 3 Low Use Trails

EACH TRAIL

- One camera 10 meters from trail
- One camera 50 meters from trail

CAMERA SETUP





Blue Circle – Low Use Trail

Red Circle – High Use Trail

METHODS

The Data Being Collected

Hiker Count

Number of hikers on a trail in a period of an hour

Usage of Lure

Whether lure was used to attract the animal towards the camera

Animal Species

What type of animal it is and what role it plays in the food chain. Example – Coyote/Predator

Trail / Trail Usage / Distance from Trail

The name of the trail, the usage of the trail (high or low), and how far the camera was from the trail (10m or 50m)

Date/Time/ Temperature

The day the animal was captured on camera, what specific time, and how warm it was (F)

RESULTS

Figure 1. Hiker Count per Trail (1hr)

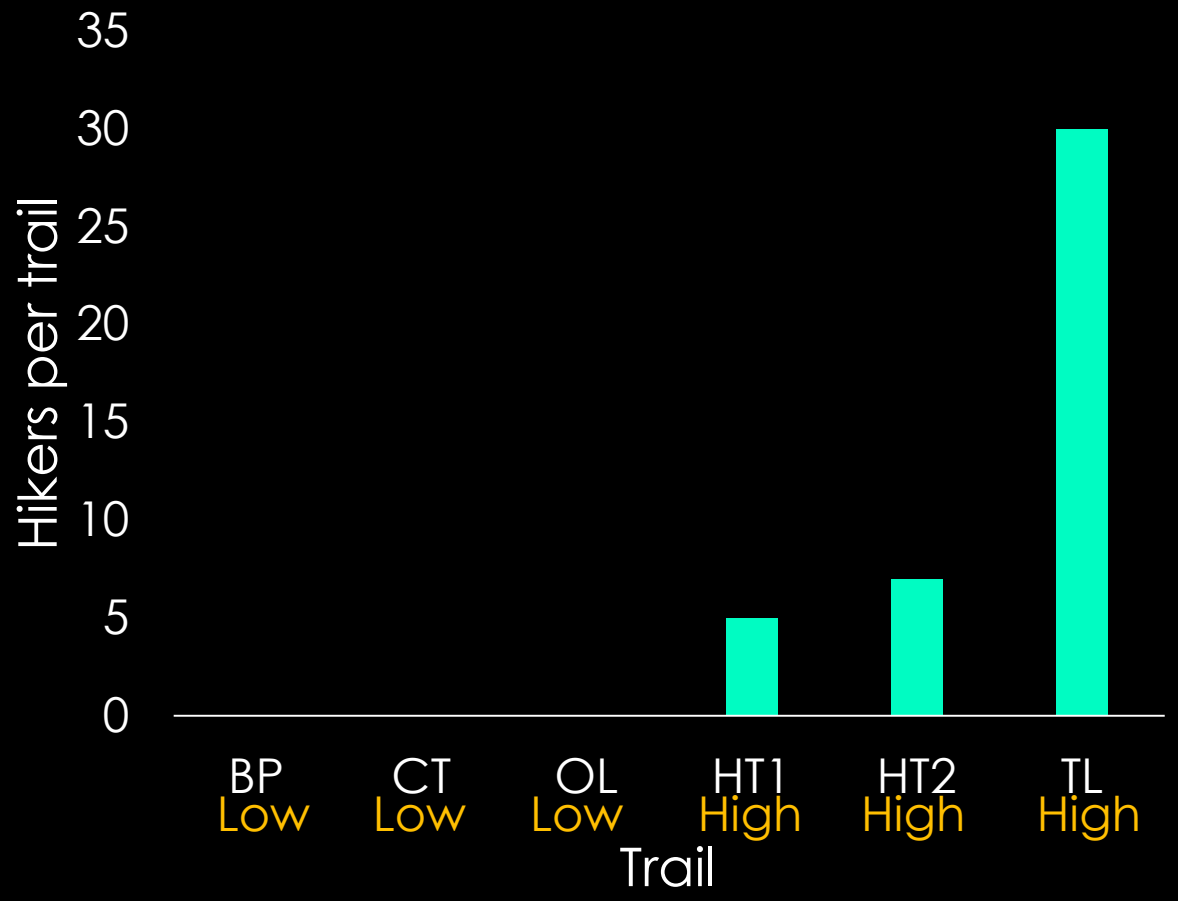
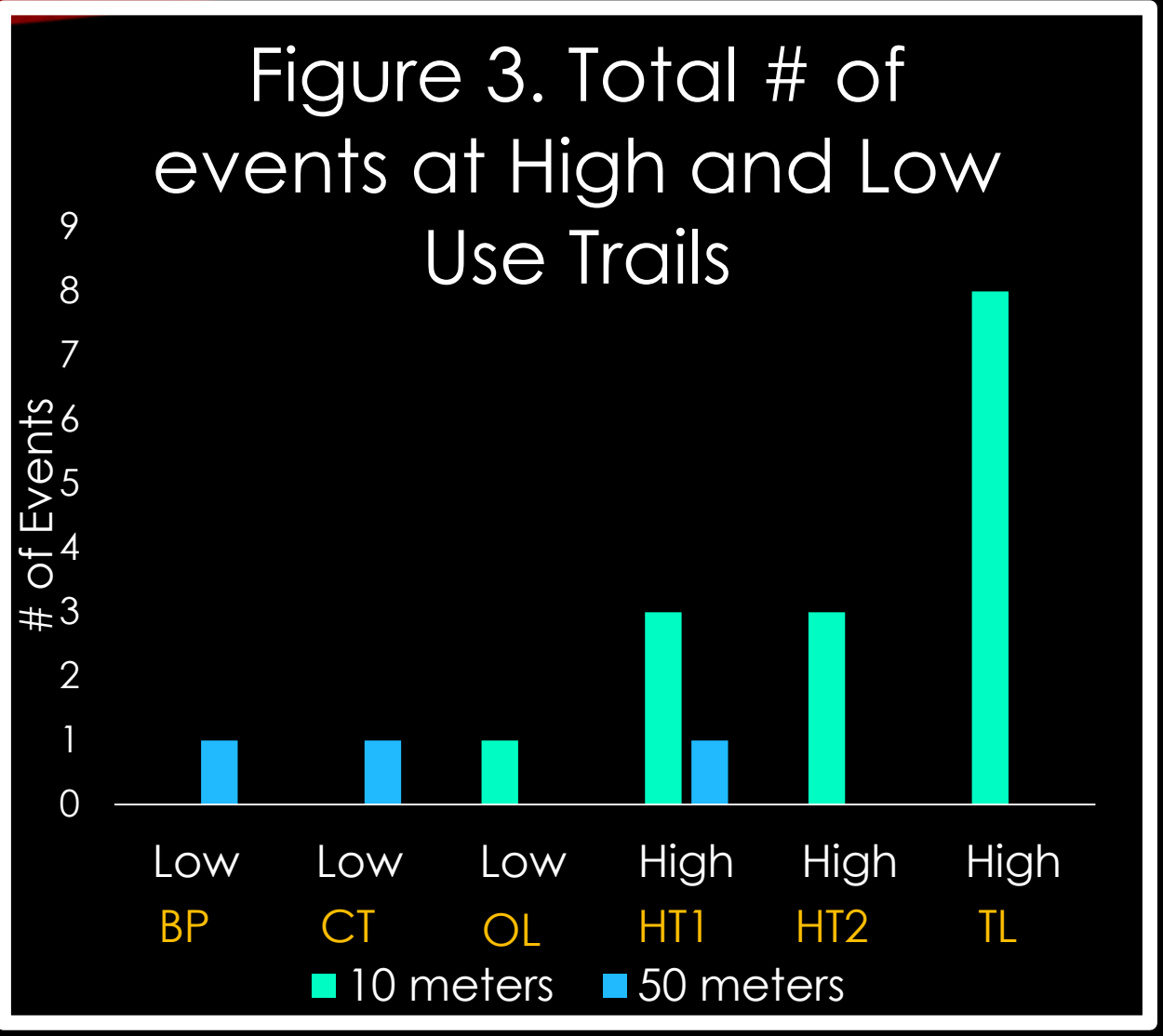


Figure 2. Events/Day with the Usage of Lure

RESULTS (CON.)



BP	White Tailed Deer
CT	White Tailed Deer
OL	White Tailed Deer
HT1	White Tailed Deer
HT2	White Tailed Deer Mourning Dove
TL	White Tailed Deer Squirrel

2019-07-14 11:05:50 AM M 1/2
84°F
Overlook

2019-07-17 3:23:32 PM M 3/5
86°F
Hilltop 2

Hilltop 2

2019-07-21 8:10:22 AM M 1/5
78°F
Twin Lakes

2019-07-19 12:19:30 AM M 2/5
70°F
Hilltop 2

2019-07-14 6:59:45 PM M 1/5
79°F
Twin Lakes

2019-07-09 11:25:27 PM M 3/5
68°F
Hilltop 1

DISCUSSION - CONCLUSIONS

Lure was used for 6 days
There was no lure for 6 days

The overall results show that the predator lure had no effect on the experiment, as my hypothesis was negated. It is likely that the animals were not close enough for the lure to take effect
As a result, all the data was combined not including lure.

All the data collected were prey items

Prey items were more abundant on high use trails; supporting my hypothesis

Take Home Message

Prey were more common in areas with a higher usage by humans

In the Future

If this experiment were to be conducted again there would need to be more time to obtain more data

Sources of Error

This project was designed for a longer period of time as time was a limitation

Animals were not in close proximity for the lure to work

Hiker counts were not taken at the same time every day with similar weather conditions

ACKNOWLEDGEMENTS

I'd like to thank, Dr. Rubbo, Dr. Begley-Miller, Mike Tierney, all my fellow TESA students, and my parents