

Caught On Camera

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Outline:

- Why do we use trail cameras?
- Wildlife diversity– what our cameras reveal?
- Think outside the box and capture great images.
- Set up a trail camera at home.
- Want even more? - citizen science opportunities



What is a Trail Camera?



Light sensor and microphone

PIR (passive infra-red) and motion detector

LED flash

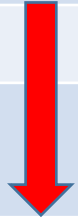
Camera lens

SD photo/video storage card

Display and programming controls

Battery compartment and external power input

Examples of Research Uses of Trail Cameras: How Many Deer?

Question	Example	Difficulty
Presence-only	Are deer present on the property?	Easy
Detection – nondetection	Are deer present or absent?	
Relative abundance	How is the deer population changing through time?	
Absolute number, population changes	How many deer are on the property at this time?	Difficult

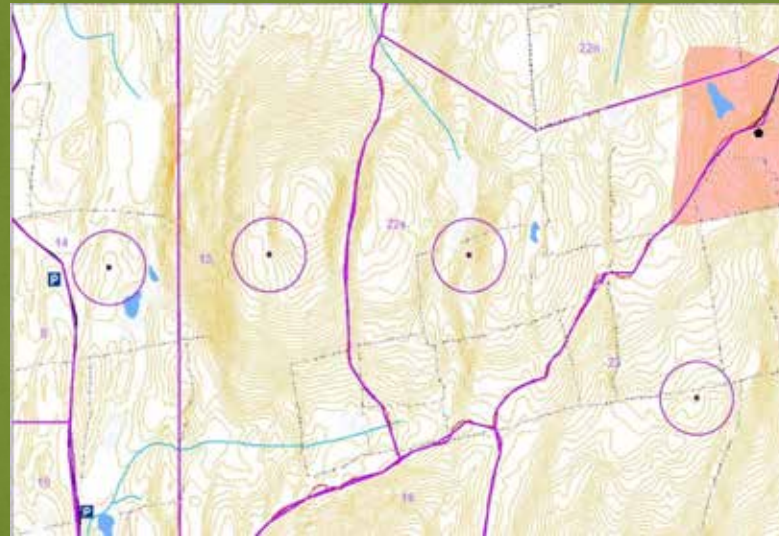
About Tonight's Trail Camera Images

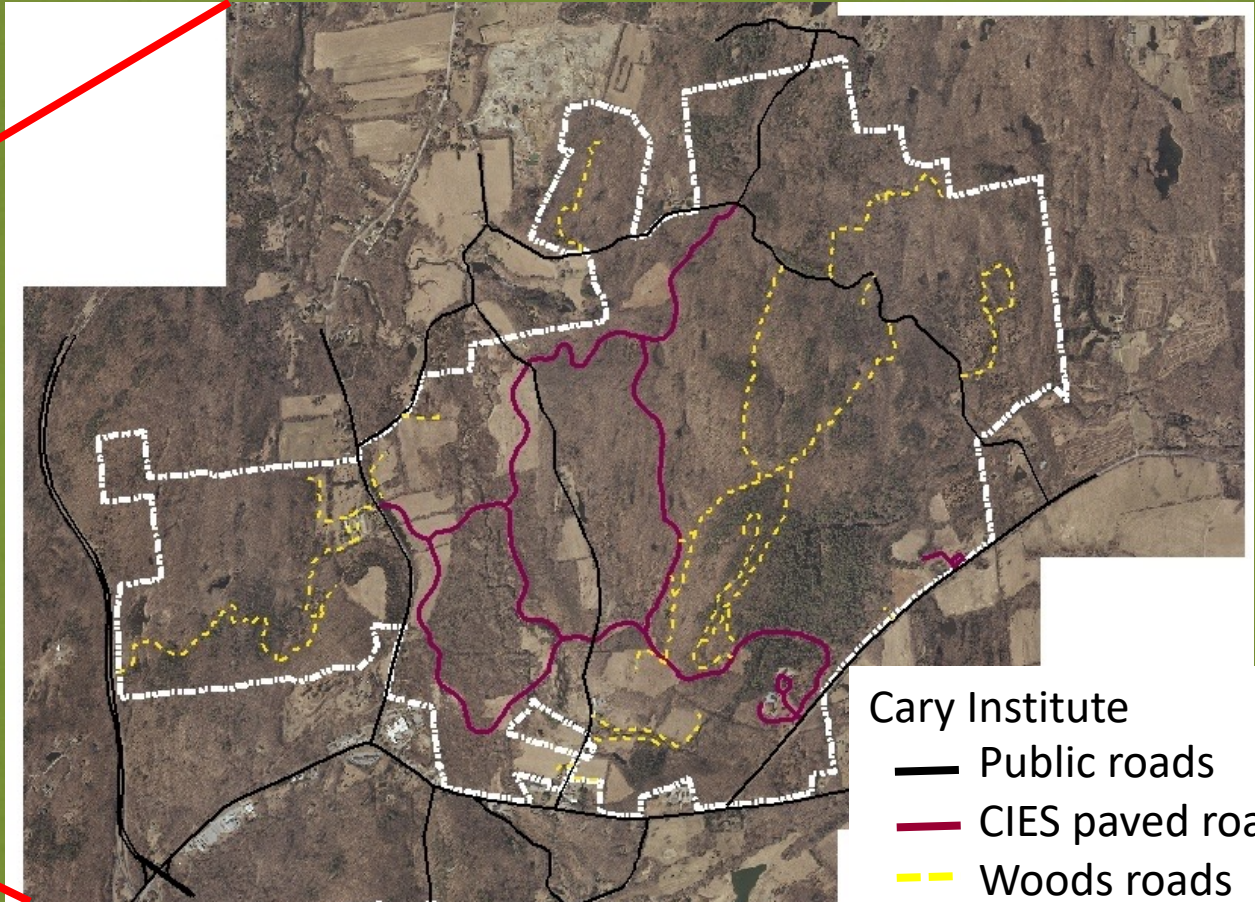
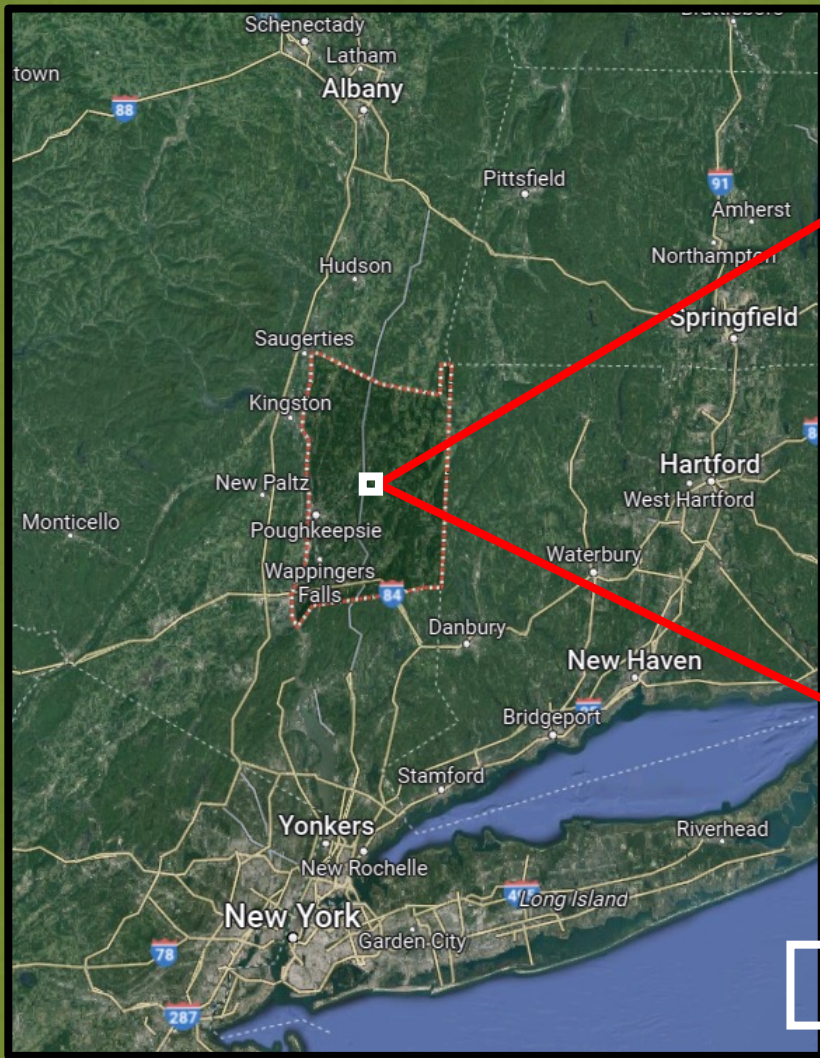
How Collected:

- Deer Project
- Content for education and outreach efforts:

About photo/video quality

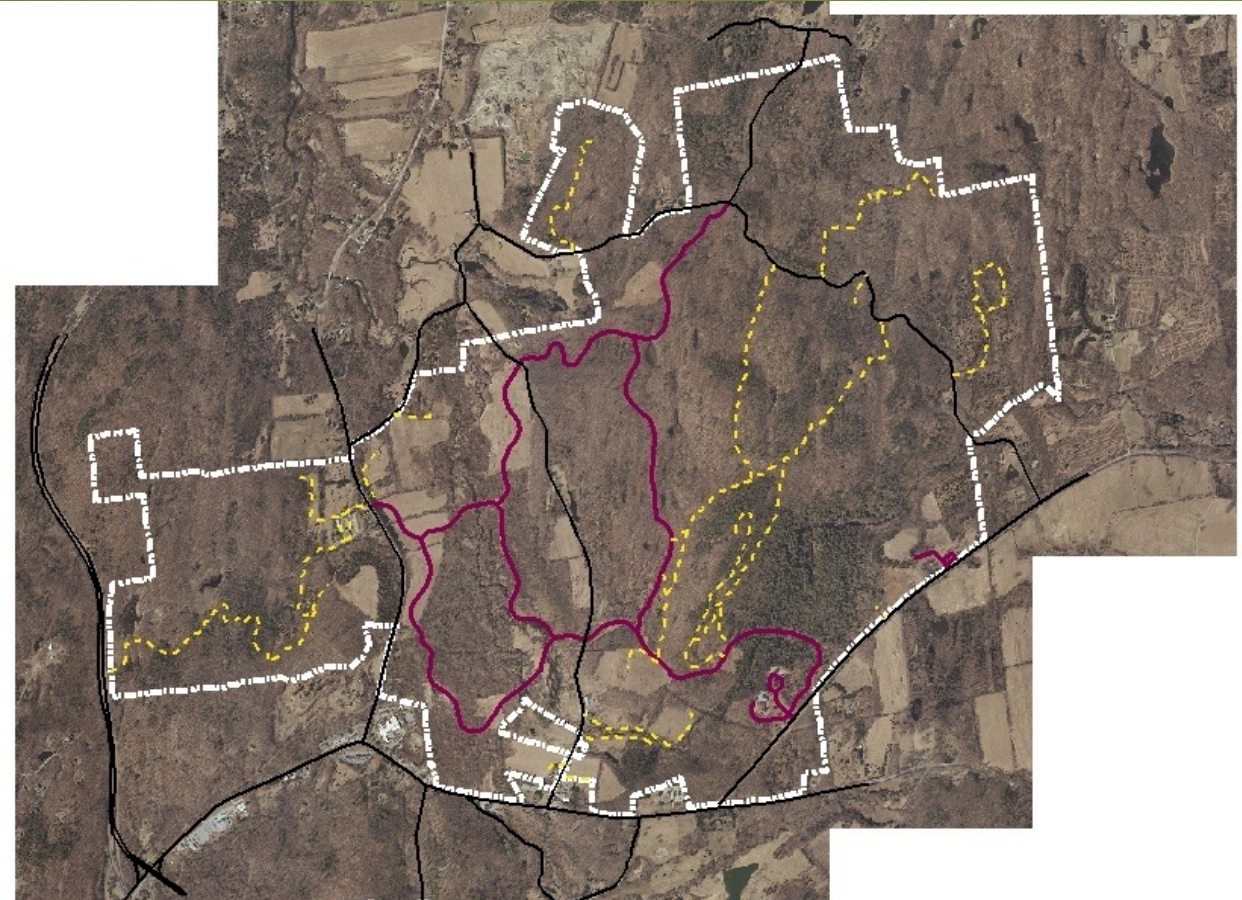
- Not professional cinematic production
- Still photos vs video





New York State – Population 19.8 million
Dutchess County – Population 297,000
Cary Institute – 2000 acres or 3 square miles

Surrounded By and Interspersed with Residential and Commercial Properties



Resident Mammals at Cary

Frequency of "Capture"
during Deer Project
Trail Camera Surveys:

- Frequent
- Rarely
- Never

Bats, numerous spp.	Fisher	River Otter, North American
Bear, Black	Fox, Gray	Shrews, numerous spp.
Beaver, American	Fox, Red	Skunk, Striped
Bobcat	Jumping Mice, 2 spp.	Squirrel, Eastern Gray
Chipmunk, Eastern	Mink, American	Squirrel, Flying, 2 spp.
Cottontail, Eastern	Moles, numerous spp.	Squirrel, Red
Coyote, Eastern	Muskrat, Common	Vole, Meadow
Deer, White-tailed	Opossum, Virginia	Weasel, 2 spp.
Deermouse, White-footed	Raccoon	Woodchuck

White-tailed Deer - *Odocoileus virginianus*









Surprises – Not Where They Are Expected



Surprises – Not Who Is Expected



Using Trail Cameras at Home

- Explore and engage with wildlife
- Improved problem-solving
- Security and surveillance
- Participate in citizen science projects



Legal and Ethical Use of Trail Cameras

Legal - Some states and local governments :

- Regulate trail cameras
- Have banned cellular trail cameras
- Require owners identity

Ethical:

- Don't trespass; obtain permission from the landowner.
- Don't invade others' privacy.
- Respect the safety and welfare of wildlife



Considerations When Selecting a Trail Camera

- Price
- Image quality
- Flash type
- Trigger Speed
- Recovery speed
- Sensitivity
- Ease of Use
- Durability / theft prevention
- Warranty and customer service



Tips For Installing a Trail Camera on Your Property

- Choose the right camera for your purpose
- Learn what settings are available and choose the right ones
- Experiment to see where its trigger detection zone(s) are located
- Use NIMH rechargeable or lithium batteries
- Use top-quality SD cards
- Select the right spot
- Mount your camera at the optimal height and direction
- Minimize how often you check it
- Be prepared to view your SD card in the field
- Keep notes on every camera installation.

How to Use Trail Cams to Monitor Wildlife: Step by Step

<https://www.caryinstitute.org/news-insights/video/how-use-trail-cams-monitor-wildlife-step-step>

Trail Camera Field Data - Deer Populations Index Study

Hunt Sector # 1s Sector Letter Code P
GPS Coordinates: N
W
Habitat Description: Oak, hickory and beech forest on south end of marsh
Support Description: shagbark hickory - 12" DBH

Azimuth of Camera: 38 ° Height of Camera: 1.05 m
Date Set: 3/26/16 Set By: MF

Camera Type: Browning Strike Force Reconyx HC500
Camera # 32 Card # 30 Remaining Battery Life 49 %
Camera settings checked? yes; no;

Reference posts present? yes; no; Reflectors present? yes; no;
Camera aligned with posts? yes; no;

Maintenance Record:
Date: 4-13-16 Maintainer: RJW
1) Replaced batteries 2) Swapped with Card # 38
3) Remaining Battery Life: old %; new 65 %
Date: 4-29-16 Maintainer: RJW
1) Replaced batteries 2) Swapped with Card # 37 Repl OK
3) Remaining Battery Life: old 41 %; new 70 %
Date: 5/17/16 Maintainer: RJW
1) Replaced batteries 2) Swapped with Card # 1B
3) Remaining Battery Life: old 41 %; new %
Date: Maintainer:
1) Replaced batteries 2) Swapped with Card #
3) Remaining Battery Life: old %; new %

Date Removed: 5/26/16 Removed By: MGN

Notes:

Trail Camera Citizen Science Projects

eMammal:

Aid in photo collection, look at pictures, identify and upload them for review and archive at the Smithsonian

<https://emammal.si.edu/participate>



Collaborative effort to track mammal relative abundance and distribution with camera traps

<https://app.wildlifeinsights.org/initiatives/2000156/Snapshot-USA>



Collect data on black bears in NY using observations, hikes and trail cameras

<https://iseemammals.org/explore>

ZOONIVERSE

Volunteers go onto projects and classify data in them. They can also test projects before they launch

<https://www.zooniverse.org/about>

Acknowledgements

- Financial and physical support of Cary Institute of Ecosystem Studies and its staff
- Too many volunteers, students, and interns to list
- William Silta for his many volunteer hours maintaining and managing trail cameras and videos, particularly relating to the “thinking outside the box”
- Maura McGuire and James Eisenstein for help sorting and compiling videos to help tell a story.
- You, the audience.

