



A Local Research Effort



Dr. Richard Phillips
Wittenberg University

Brad Boyer
National Trail Parks & Recreation District







Fear vs. Fact • Management vs. Conservation





Public Education

Night Howl
Track & Trek
Coffee & Coyotes
Howlin' Hike
Education Sessions





Youth Engagement



**PROGRAMS
ON DEMAND**
catch 'em if you can

CRAZY LITTLE COYOTES

BUCK CREEK NATURE PARK • FREE



National Trail Parks and Recreation District
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Kids ages 3-7 can burn off their energy on May 3 at the Buck Creek Nature Park for the Crazy Little Coyotes program presented by National Trail's Wittenberg University interns. Kids will learn about coyotes while participating in fun activities, hear a story and make a craft. We hope to see you at this FREE program which starts at 1 pm. <https://www.facebook.com/events/1200788733286226/>

Programs On Demand is new initiative by National Trail Parks and Recreation District that provides additional programming to Clark County residents. As opportunities arise we will add a program. Make sure you keep an eye out for these events, because you never know when they will appear.

Marilyn Hanson likes this.





Coyote Crusaders



Coyote Crusaders is an educational outreach program for youth ages 10 - 16. This effort is designed to teach natural history of the coyote and provide the tools, knowledge for public information outreach and teach wildlife monitoring.

COYOTE CRUSADERS WILL EXPERIENCE:

- COYOTE EDUCATION
- OUTDOOR EXPLORATION
- NATURE ACTIVITIES
- WILDLIFE MONITORING
- COLLECTING COYOTE DATA
- ENVIRONMENTAL STEWARDSHIP
- COYOTE TRACKING
- PUBLIC OUTREACH

This is a FREE program, but space is limited. Participants will receive crusaders kits and program materials.

1301 Mitchell Blvd.
Springfield, OH 45503
(937) 328-PARK (7275)
www.ntprd.org







Materials



COMMON SENSE SAFETY

Coyotes, which originated in the Great Plains grasslands and southwest deserts, moved eastward into the Midwest during the early 20th century. They were first documented in 1919 in Ohio and are well established in Clark County. Coyotes in Clark County weight approximately 28 - 40 pounds as adults. They have coats that are shades of browns and greys, long legs, oversized pointed ears and large tail with a black tip. Coyotes play a natural and beneficial role in the food chain by eating other small rodents. As the top carnivore in our ecosystem, they also help regulate the population of skunk, opossums and raccoons which ultimately provides a healthier natural environment.

KEEP WILDLIFE WILD
Never feed a coyote or other wildlife.

CONTROL POTENTIAL FOOD SOURCES
Keep your trash secure and compost bins covered; closely monitor your bird feeders to ensure that they are not attracting other wildlife, and keep dog and cat food bowls inside.

MONITOR ALL PETS
Never let a pet roam free or go unmonitored while outdoors. Always keep dogs on a leash while in public areas.

AVOID INTERACTIONS
Never approach an active den area or a coyote. Enjoy all wildlife from a distance.

COYOTE ENCOUNTERS
NEVER APPROACH A COYOTE
DO NOT RUN
DO NOT TURN YOUR BACK
BE BIG AND LOUD
WAVE YOUR ARMS
THROW OBJECTS
FACE THE COYOTE
BACK AWAY SLOWLY

COYOTE MONITORING
National Trail Parks & Recreation District is collecting data to help provide a better understanding of the coyote population and behavior in Clark County. If you encounter or have a sighting of a coyote please call (937) 328-PARK (7275) to report this information. Information collection is vital to providing a closer look into coyote behavior, territories and interactions with humans.




nature FOCUS
Common Sense Coyote

Human and coyote interactions have steadily increased over the past five years in the western and eastern portions of the United States. These increased human-coyote encounters have led to the development of public awareness programs, both through local and state agencies, and have resulted in increased education and training for city and county employees. In Clark County, the Ohio Parks and Recreation District is currently working to expand its existing program. Our goal is to provide the best information possible to our residents. Some Coyote encounters can be avoided if you take the time to read and understand the information provided in this magazine.

COYOTE ENCOUNTERS
• Have a Good Plan
• Do Not Feed
• Do Not Turn Your Back
• Do Not Run
• Do Not Turn Your Arms
• Wave Your Arms
• Throw Objects
• Face the Coyote
• Back Away Slowly

Coyote Crusaders
Coyote Crusaders is an educational program designed to provide information to the public and to help them understand the role of coyotes in our ecosystem. For more information, call 528-7275 for more information.

Check out the Common Sense Coyote Events in the Family Program Section

COYOTE ENCOUNTERS
If you encounter a coyote, please call 528-7275 to report the sighting.

COMMON SENSE SAFETY

KEEP WILDLIFE WILD
Never feed a coyote or other wildlife.

CONTROL POTENTIAL FOOD SOURCES
Keep your trash secure and compost bins covered; closely monitor your bird feeders to ensure that they are not attracting other wildlife, and keep dog and cat food bowls inside.

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AVOID INTERACTIONS
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COYOTE SIGHTING?
Call (937) 328 - 7275

National Trail Parks & Recreation District is collecting data to help provide a better understanding of the coyote population and behavior in Clark County.

COMMON SENSE COYOTE

× MENU

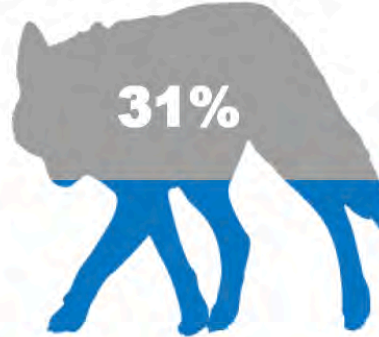
- CLARK COUNTY COYOTES
- REPORT A SIGHTING
- TOOLS
- RESEARCH
- COYOTE CRUSADERS
- FAQ
- ABOUT
- CONTACT





Impact

● **31% decreased level of fear associated with a coyotes being near home after education session.**



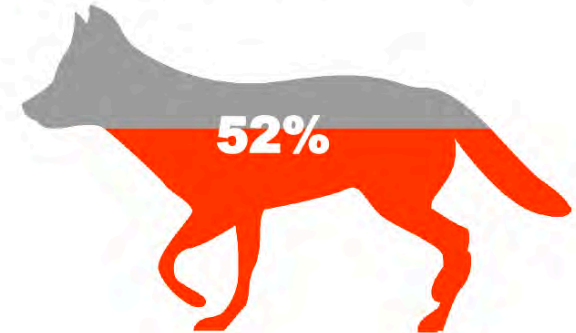
● **40% decreased level of fear associated attacking children after education session.**



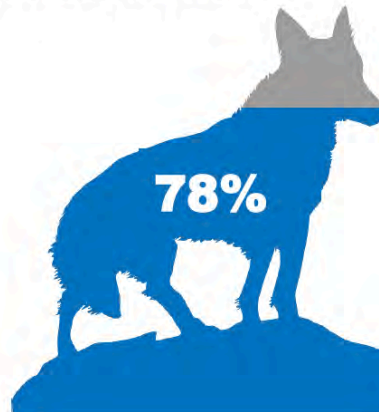
● **31% decreased level of fear associated with a possible coyote attack after education session.**



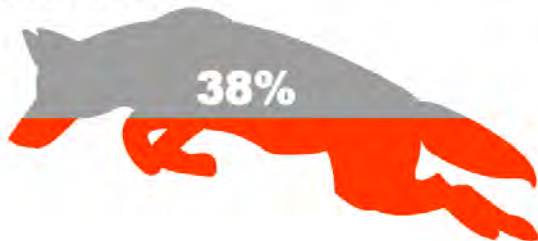
● **52% decrease of negative sentiments towards coyotes after education session.**



● **72% increase of knowledge of coyotes after education session.**



● **38% decreased level of fear associated with a possible coyote attack on pets after education session.**





Citizen Connection



REPORT A SIGHTING

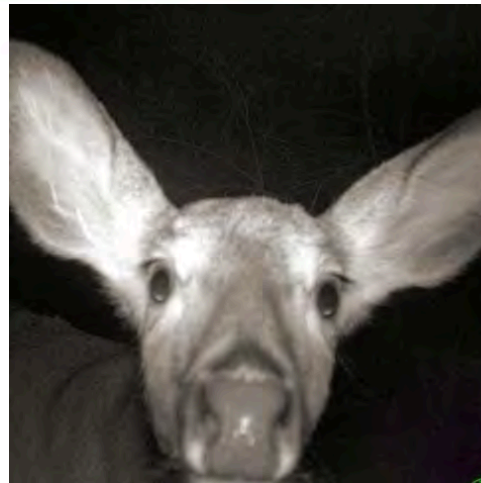
NAME (REQUIRED)

ZIP CODE (REQUIRED)


PHONE NUMBER (REQUIRED)

EMAIL (REQUIRED)

INCIDENT DATE (REQUIRED)



 Follow ...

 nationaltrail

76 likes 9w

nationaltrail Oh Deer, now that is a close up. #trailcamerathursday #ntprd #discoverparks #clarkcountyohio #whitetaildeer

timmonsjenn @tarajo1981 🤔 ✕

tarajo1981 @ @timmonsjenn my view every single night at one of the houses on my route. Lol ✕

sipanddipitypaintbarxenia Nice #selfie there Rudolph ✕

whitetaildeerwall Now this is cool! ✕

 Add a comment... ...





Fake News • Coyote Edition

Browser tabs: RE: Finding Finnegan - bbo..., Inbox (2) - bradleyboyer@..., Facebook, NTPRD - Nature Programs, Medway Area Historical Soc..., chuck e cheese birthday par...

Address bar: <https://www.facebook.com/groups/103639986347321/>

Page title: Medway Area Historical Society

Profile: **Stephanie Ward**
January 19 at 7:49pm

I know this isn't what this site is for... but keep an eye on your small dogs, pets and animals! My husband and I just scared off a couple coyotes that had dragged my shih-tzu back to the woods. Thankfully she is fine and isn't hurt, I caught them just in time for them to back off for a second. Please watch out, there's a couple of em! We live right on lower valley.

37 people like this.
23 shares

View 30 more comments

Trish McIver I also heard Flick RD
Like Reply 1 16 hrs Edited

Brad Boyer Stephanie Ward, I am happy to hear your dog is okay. I would like to inform everyone that has been active in this discussion about the efforts that National Trail Parks and Recreation District has been making to study the coyote population in Clark Cou... See More

Report a Citing
Visit the post for more.
COMMONSENSEGOYOTE.COM

Like Reply Remove Preview 3 4 hrs

Stephanie Ward Thank you, I reported it.
Unlike Reply 2 4 hrs

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Comments:

- Stephen Fong** commented on Scott Ryan Presler's post.
- Ryan Saunders** and **Nicholas Bradley** are now friends.
- Spencer E. Geissinger** & **Gregg Pitts** Hey Pitts, happy birthday. Hope your day is great.
- Jordan Grant** likes The Bob & Tom Show's video: Bob Holds His First Grandchild.
- Yale Scott** replied to Craig Barnes's comment.
- Emily DeArdo** commented on her own post.
- Alyson Campbell** and **Samantha Wyman** are now friends.
- Josh Gatlin** likes Gran Fondo Trail & Fitness's photo.
- Gregg Pitts** 1m
- Mindy McInturf** 17h
- Laura Boyer** 1h

GROUP CONVERSATIONS

- Luke, Allison, Laura**
- Amelia, Laura, Brad**

Search





Research



wittenberg UNIVERSITY

- Where are they?
- How do we determine the probability of them being in an area?
- How many are there?





Importance of Detection

- Two things are inherently tied to where I see animals
 - Presence
 - Detection
- Perception vs. reality
- Increase our ability to detect a species if it is present





Common Sense Coyote

- Try to bridge potential gaps between knowledge and perception with a controversial species
- Putting to task all we have talked about in previous slides
- Collaborative effort in hopes of benefiting all parties





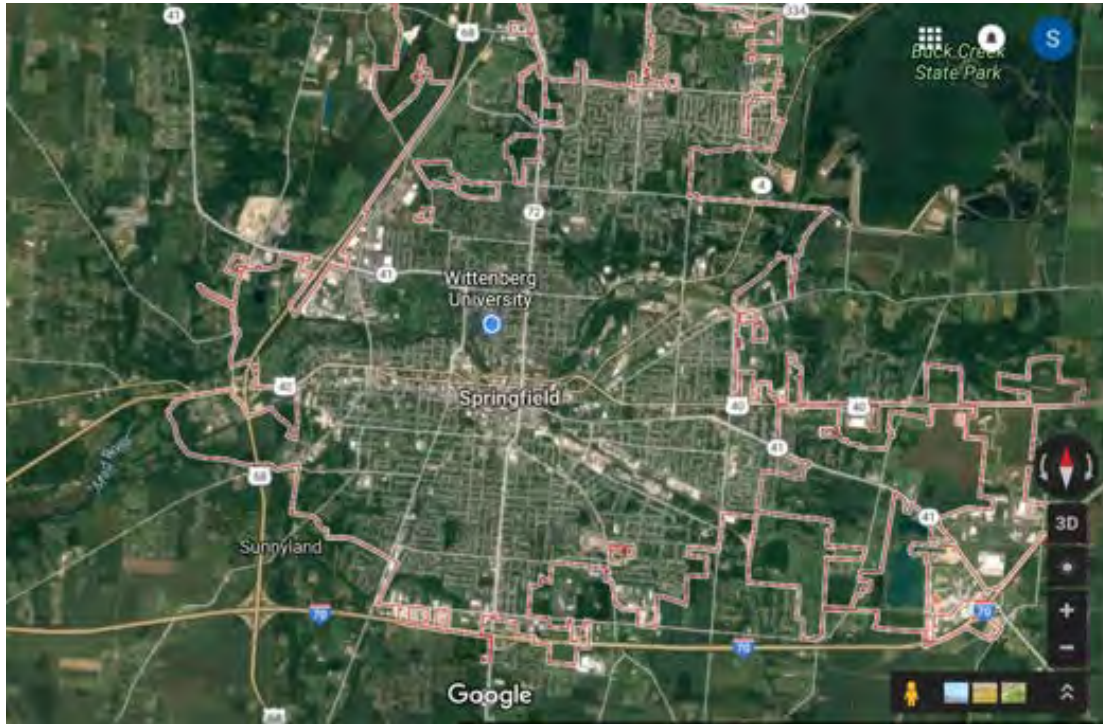
Timeline of Tasks/Goals

- Where are they?
 - What do the other predator communities look like?
- How do we best determine if they are there or not?
 - Rural vs. urban
- How many are there?
- Are there habitat associations we can use to predict them?





Using What We Know



- Idea of corridors
 - Areas in a habitat that may promote movement and allow for increased likelihood of detection





Step 1

- Set camera traps prior to conducting howling surveys





Develop Howling Survey Routes



- Goal is to determine method of detection that is most efficient
- However – we got photos quickly within the Buck Creek Corridor





Camera Surveys

- Use of trail cameras to capture images of resident wildlife
- 5 Cameras
 - December – April
 - 437 Trap nights
- Results
 - 35 coyote encounters
 - 31 from camera 1
 - 1 from camera 2
 - 3 from camera 5
 - Evidence of a coyote pair
 - Other animal encounters include: mink, muskrat, fox, skunks, feral cats
 - Camera 1 – most diverse
 - Camera 4 – most encounters





OVERALL ENCOUNTER RATES

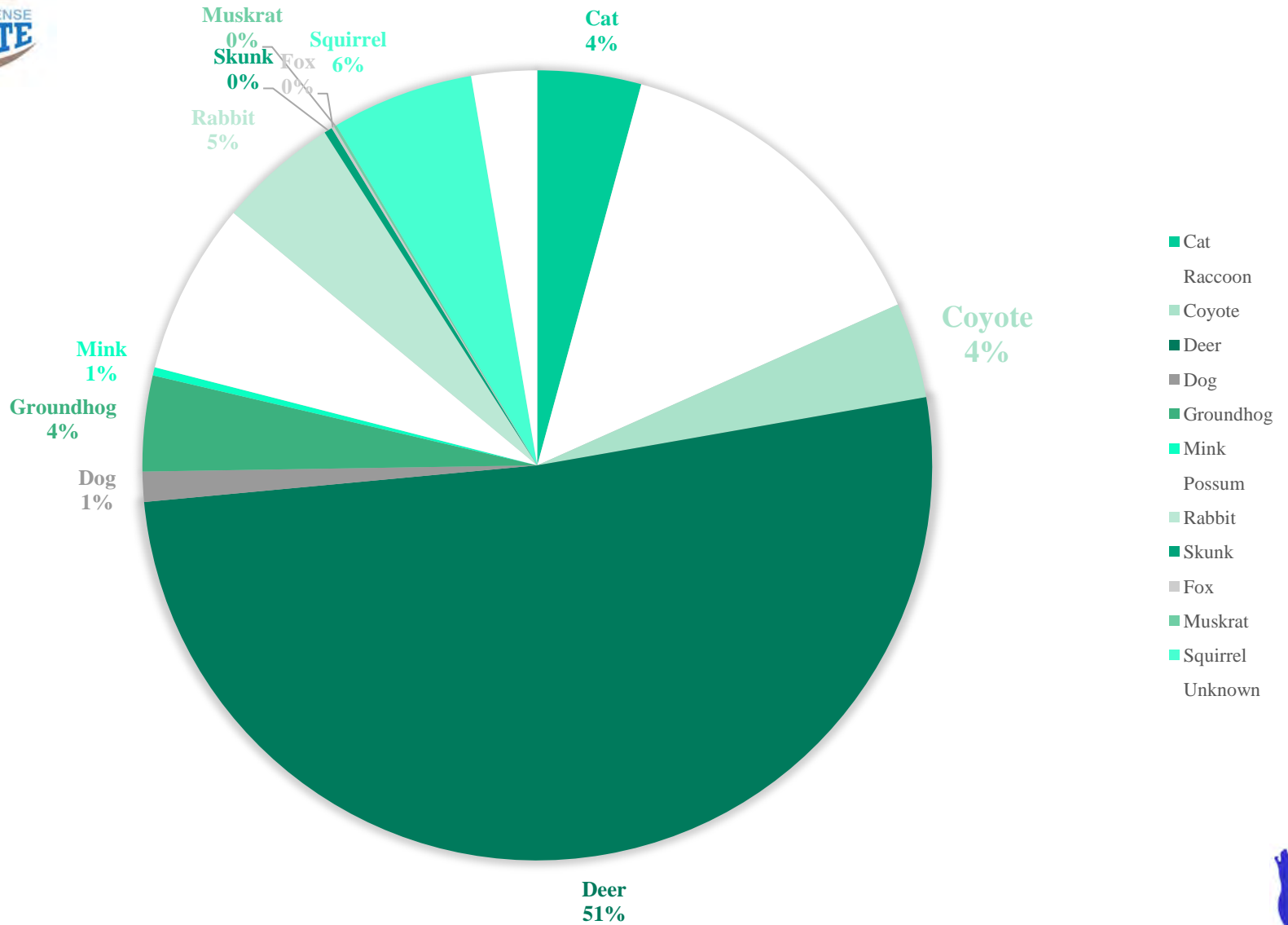


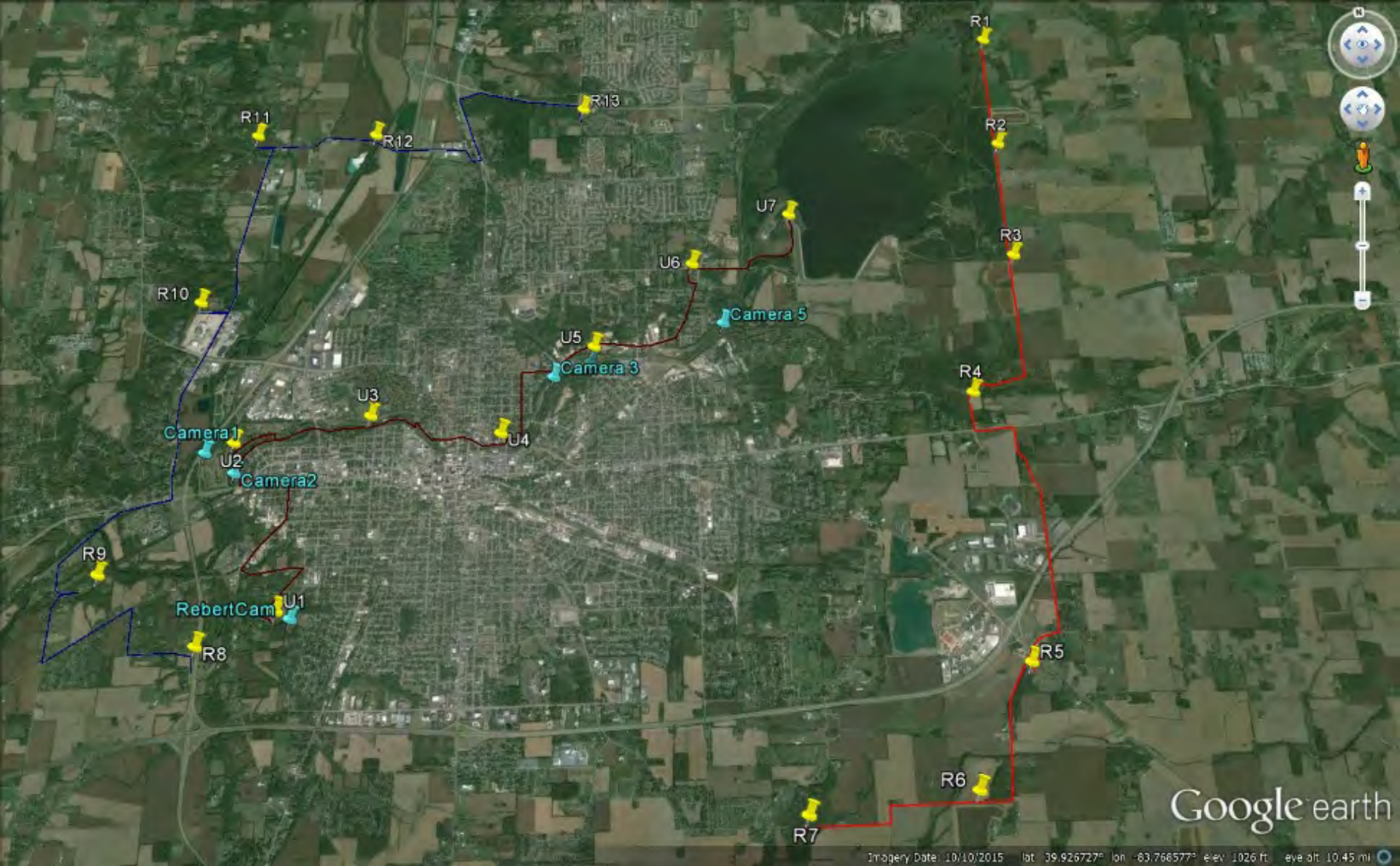
Figure 2. A graph showing the percentage of total encounters of each animal across all cameras.





- Here we go
 - So at least they are traveling through Springfield on the periphery
 - It appears by February they are traveling in pairs in Snyder
 - Implement concurrent howling surveys





Imagery Date: 10/10/2015 lat: 39.926727° lon: -83.768577° elev: 1026 ft. eye alt: 10.45 mi





Howling Surveys

- Surveying responses of coyotes to recorded calls
- 3 Routes
 - Urban
 - East and West Rural
- Methods
 - January - March
 - Play 2 cycles of a random coyote call, with at least two different calls per station
 - Listen for 2 minutes for responses
- Results
 - 3 total responses (of 129 calls)



http://2.bp.blogspot.com/_5kUptjgnHjA/TTnjSIEPcBI/AAAAAAAAAEOY/SPq_w9fm1ao/s1600/Coyote+Howling.jpg





Citizen Science

- Leveraging information from the public to better understand interactions between species and urban dominated landscapes
- Intersection between gaining reliable knowledge and citizen contributions





Citizen Data

- Video of pair of coyotes in wooded areas south of Springfield High School exhibiting breeding behavior
- Sample and document road kill coyotes
- Possible cooperative relationships (demographics) with taxidermists



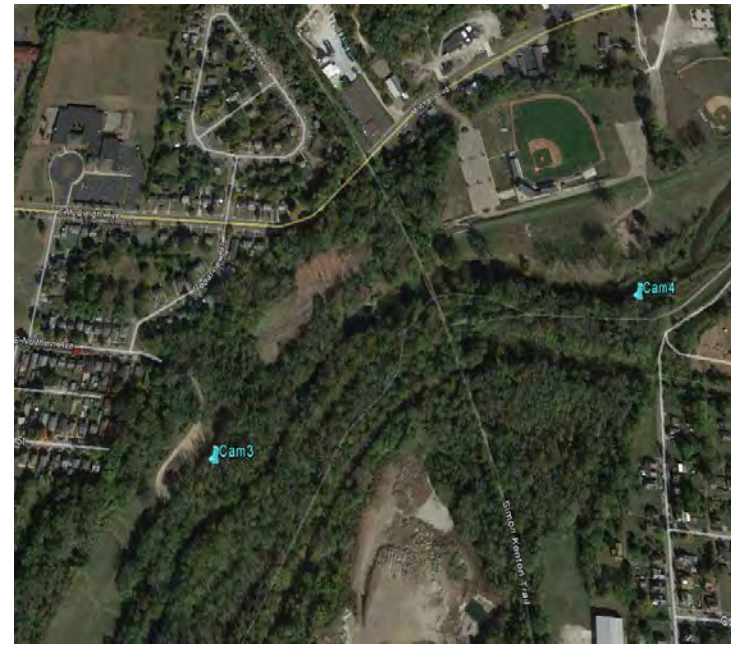
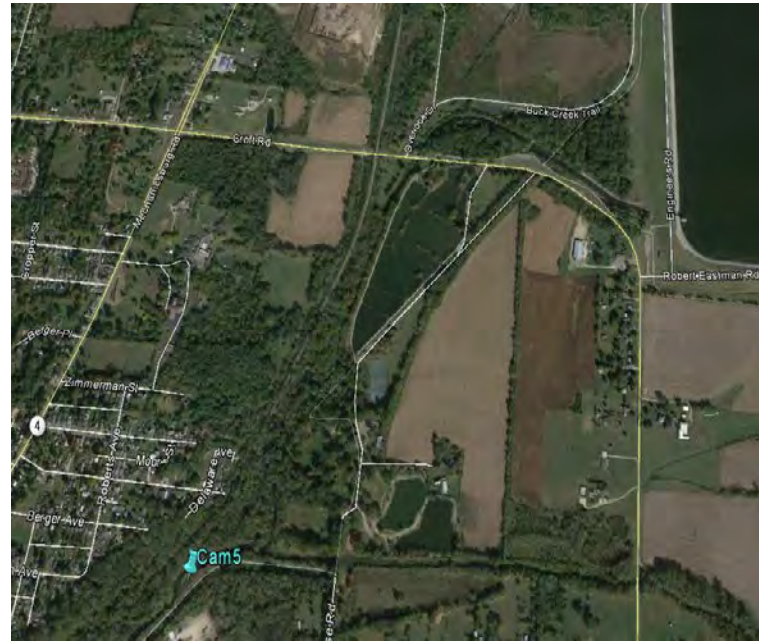


Camera Setup



- Our camera setup
 - Reconyx PC800 (\$549.99)
 - Excellent camera & replacement policy (theft?)
 - Zero recovery period (no delay)
 - 12 AA lithium batteries
 - Last about 6months - 1 year
 - SD card
 - 16 GB (\$10.00)
 - Locks
 - Masterlock cable (\$29.00)
 - TSA lock (\$3.00)







Howling Survey Setup

- Caller
 - Foxpro Wildfire
 - Wildfire (\$119.99)
 - 4 AA
 - 1 9V
- Recorder?
 - Olympus (\$49.99)
- GPS?
- Human voice?



COYOTE HOWLING SURVEY SHEET - 2016 Route: _____

Date: _____, 2016 Time begin: _____ Temp begin: _____ CloudCov(%) _____

Twilight: _____ MoonPhase: Full New Wax or Wane Crescent or Gibbous

Observer(s): _____

Caller Model: FOXPRO or HUNTSPEC Call Duration: 30 sec or 1 minute Volume: _____

Station	Latitude ¹	Longitude ¹	Call 1 ²	Response1 ³	Call 2 ²	Response2 ³	Max#	Windspd ⁴
			: :		: :			
Comments:								
			: :		: :			
Comments:								
			: :		: :			
Comments:								
			: :		: :			
Comments:								

¹ Record Latitude and Longitude as decimal degrees (DD.MMMM) in NAD83.
² Type of call used as indicated on the caller.
³ For Responses – identify using the following information. Adult/Pup(s) Unknown, if we have nontarget responses please indicate species in comments.
⁴ Wind speed in kilometers in between calls.

Entered: _____





Win Win - Collaboration



- Great size projects for small schools
 - Budget
 - Interested students
- Excellent opportunity to expose students to real world wildlife management
 - Real problems
 - Wildlife owned by the public
 - Differing constituencies



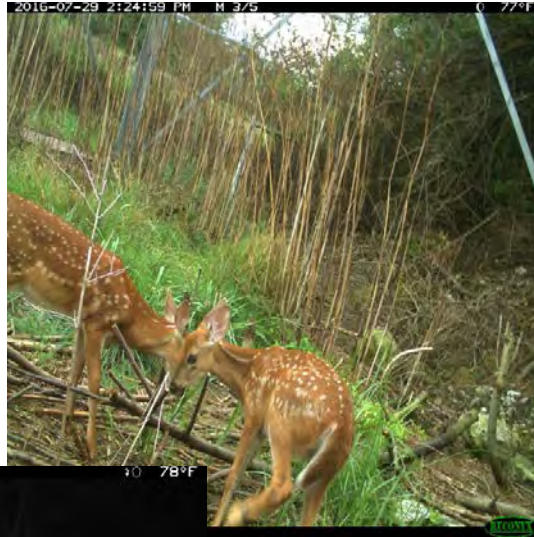


Win Win - Collaboration

- Monies
 - Pull from different coffers
 - Maximize productivity of smaller funds/grants
- Increase community awareness and involvement
 - Students often surprised by the wildlife within the city limits
 - Increases interaction at all levels between Wittenberg NTRPD



Researcher Skills



- Long-term consistent datasets
 - No fear of releasing data prior to publication
 - Great “short-term” products
 - Notion of deliverables
- Increased communication skills
- Interns
 - Exposed to different approaches to the question of wildlife management





Future Studies

- Determining optimal locations using GIS , and using this information to look for coyote dens.
- Estimating population size for Springfield
 - Counts
 - Mark recapture study
- Citizen Science
 - Citizen participation via camera photos, reporting a sighting or howling





Reference

- Bender, D. J., Bayne, E. M., & Brigham, R. M. (1996). Lunar Condition Influences Coyote (*Canis latrans*) Howling. *American Midland Naturalist*, 136(2), 413. doi:10.2307/2426745
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 - Crawford B. A., Pelton, M. R., Johnson K. G. (1993). Techniques to Monitor Relative Abundance of Coyotes in East Tennessee. *Proc. Annual Conference Southeast Association of Fish and Wildlife Agencies* 47:62-70
 - Gese, E. M., & Ruff, R. L. (1998). Howling by coyotes (*Canis latrans*): Variation among social classes, seasons, and pack sizes. *Can. J. Zool. Canadian Journal of Zoology*, 76(6), 1037-1043. doi:10.1139/z98-038
 - Petroelje, T. R., Belant, J. L., & Beyer, D. E. (2013). Factors affecting the elicitation of vocal responses from coyotes *Canis latrans*. *Wildlife Biology*, 19(1), 41-47. doi:10.2981/12-022



