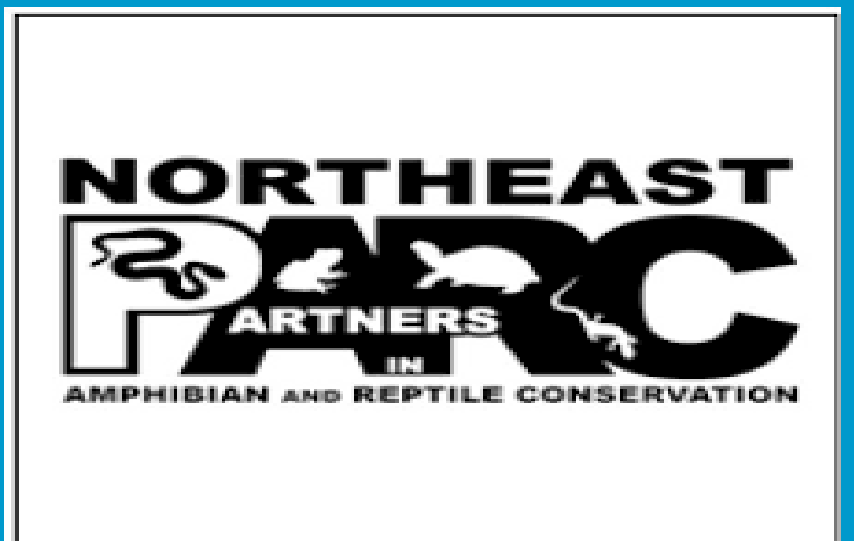


Implementing a Citizen Science Project to Aid in Amphibian Migrations: A Success Story from the Finger Lakes (NY)



Aleah Buckalew, Mackenzie Lynk, and John A. Bateman
Finger Lakes Community College, Canandaigua, New York



Background

Objectives

- Educate the public on the ecological importance of amphibian communities
- Minimize amphibian mortality while ensuring the safety of volunteers
- Create a detailed and organized dataset on amphibian migrations in the Finger Lakes region

Who's Involved

As a citizen science project, this event was open to Finger Lakes Community College students, faculty, and the general public (incl. local boy scouts) whose participation was rallied via word of mouth and social media.

Location

Finger Lakes Community College's Muller Field Station is located adjacent to the Honeoye Lake Inlet (Figure 1), and is at the center of a large amphibian migration corridor. This pathway is bisected by a heavily-trafficked road, and vehicle-related mortality is common during spring.

Methods

- Signs were placed along the road to notify drivers that volunteers were working in the road
- Volunteers gathered at Muller Field Station on warm, rainy nights when amphibian movement was anticipated
- Prior to assisting with the migration, volunteers were trained on amphibian handling and identification
- Volunteers were equipped with proper safety protection (reflective vests, head lamps, gloves, two-way radios), data sheets, and a patrol vehicle with flashing lights was parked along the side of the road to slow traffic
- Traffic density was greatest between 8:00 - 10:00 PM, so efforts were focused during that time period

Results

- More than 200 volunteers showed up on four nights to assist with the migration
- In the 2019 season, 3,872 amphibians across nine species were moved by volunteers (Table 1)
- A total of 187 casualties were reported, resulting in a 4.6% mortality rate

Table 1. Number of amphibians moved by volunteers or recorded as roadkill across four nights in March 2019 on West Lake Road near the Honeoye Lake Inlet (Ontario County, NY)

Species	Assisted	Casualties
American bullfrog (<i>L. catesbeianus</i>)	2	0
American toad (<i>A. americanus</i>)	16	0
Eastern red-spotted newt (<i>N. viridescens</i>)	46	3
Green frog (<i>L. clamitans</i>)	1	0
Jefferson/Blue-spotted salamander complex	278	3
Northern leopard frog (<i>L. pipiens</i>)	4	0
Pickerel frog (<i>L. palustris</i>)	11	0
Spotted salamander (<i>A. maculatum</i>)	3023	134
Spring peeper (<i>P. crucifer</i>)	480	36
Unknown*	11	0

* - species reported by volunteer as "frog"

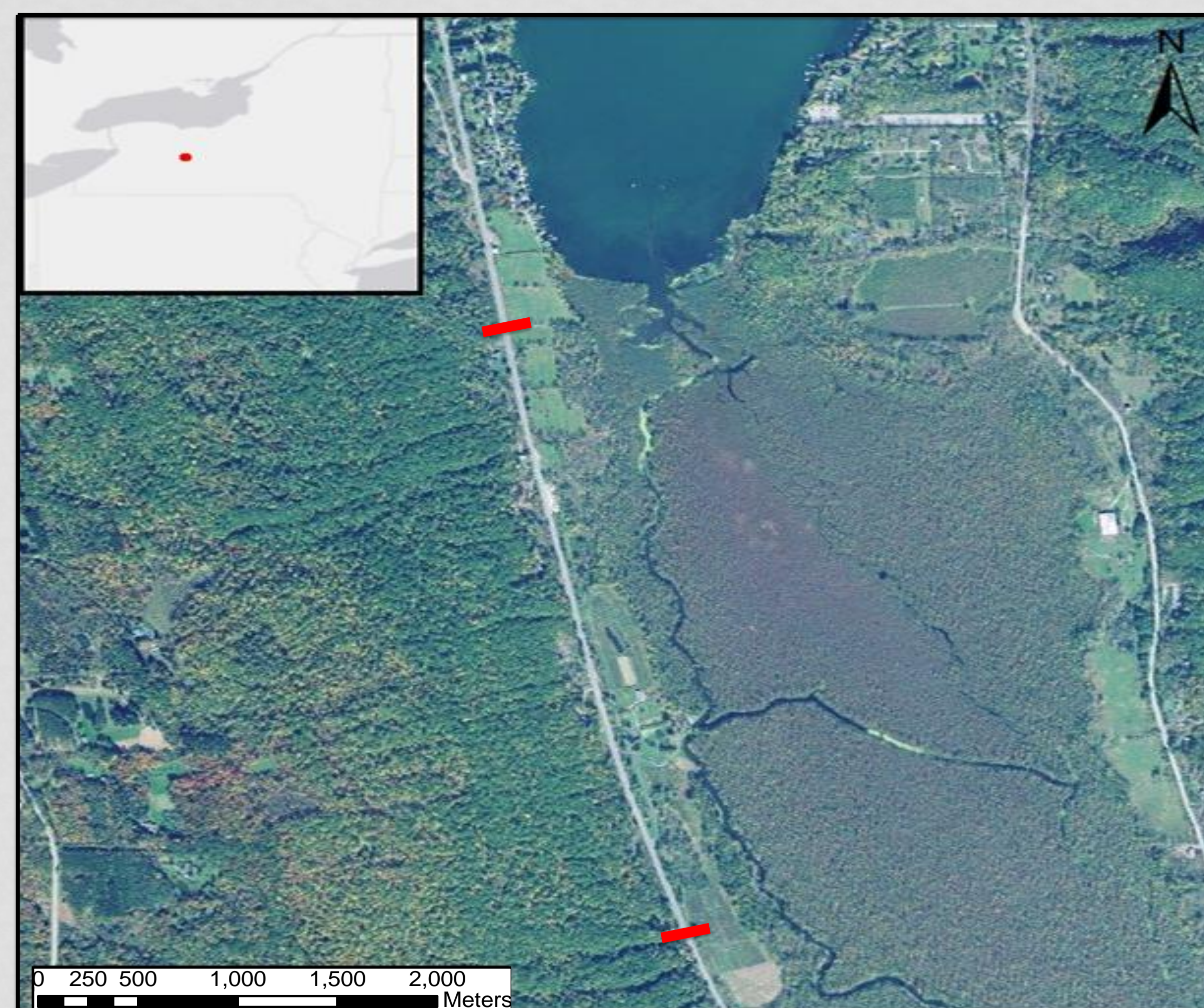


Figure 1. Map of the Honeoye Lake Inlet. The extent of West Lake Road worked by volunteers is marked by the red lines. Map produced in ESRI ArcMap.

Future Directions

- Create an organized archive of data records whereby accurate and quantitative cross-year comparisons can be made
- Devise a more thorough training strategy which better prepares volunteers to properly identify individuals to species to ensure more accurate data
- Establish a benchmark site on the opposite side of the Honeoye Lake Inlet where there is less traffic in an attempt to demonstrate the deleterious effects of a heavily-trafficked roadway on migratory success
- Use elastomers to mark spotted salamanders and record individual metrics as part of a mark-recapture study for estimating population dynamics

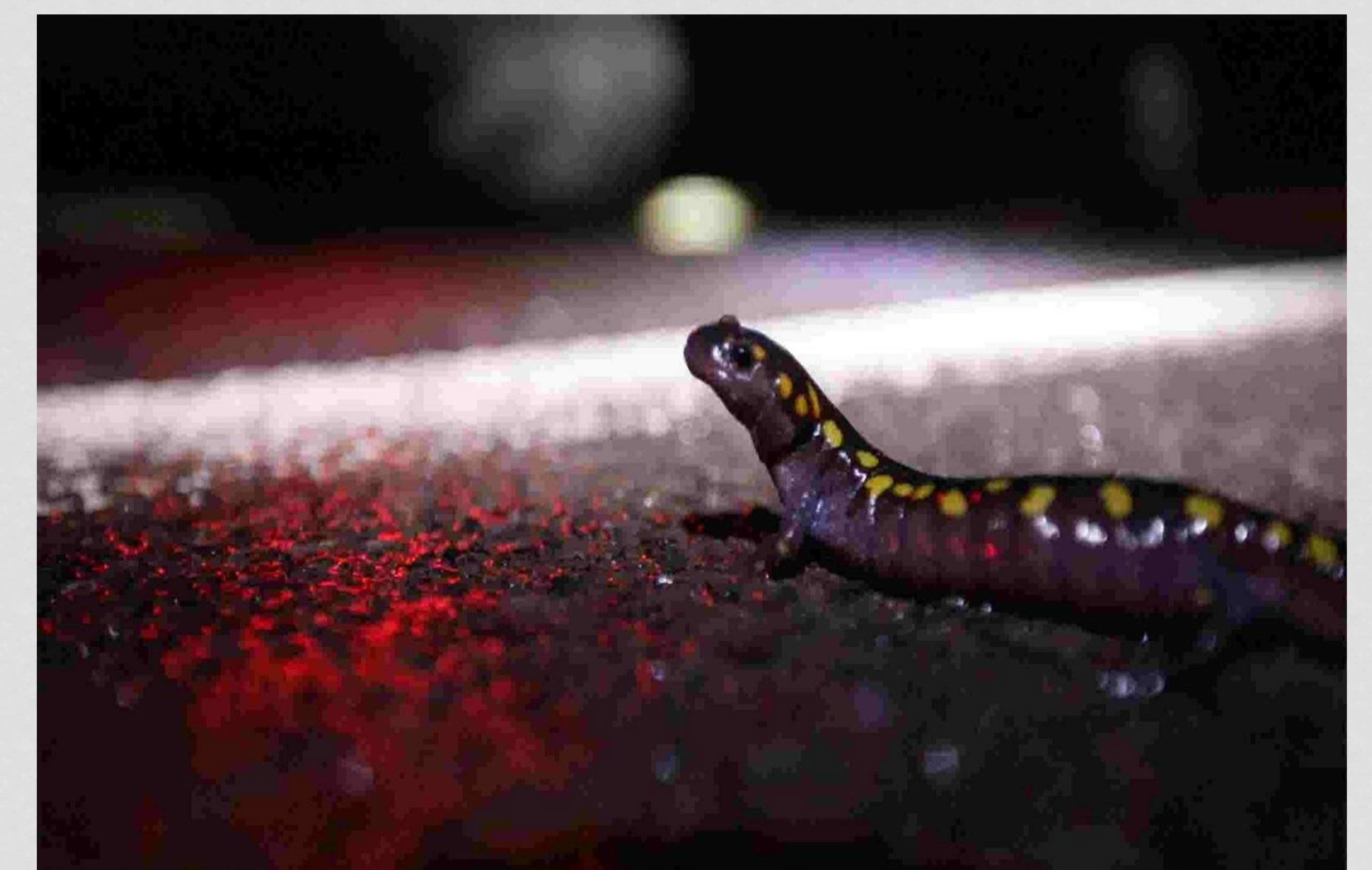


Photo Credit: Tina MacIntyre-Yee

Acknowledgements

We thank Dr. Bruce Gilman and Jessica Youngman from FLCC for their assistance with planning and organizing the volunteer effort, Dr. Dawn Hess for lending us the safety equipment for the volunteers, Tina MacIntyre-Yee from the *Democrat & Chronicle* for reporting our efforts in the city newspaper, and the 200+ volunteers who came out on rainy nights to help save some amphibians. We also thank the Muller Foundation for their generous financial support that enabled us to attend and present at this conference.