



Midwest PARC Quarterly Newsletter - February 2024

Compiled by members of the **Outreach and Communications Team (OCT)**

(Interested in joining the OCTT? Contact Jesse Sockman sockman.15@osu.edu and Danielle Galvin dgalvin2@utk.edu)

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Herp Highlight: Eastern Tiger Salamander

The Eastern Tiger Salamander (*Ambystoma tigrinum*) is a commanding presence as one of the largest terrestrial salamanders (~15 - 25 cm) in the United States with records as large as 33 cm rivaling even the California Giant Salamander (*Dicamptodon ensatus*). *A. tigrinum* is best recognized by irregular yellow blotchy spots covering a dark black to brown background on a sturdy frame (Juterbock and Owen 2013). The sporadic pattern and continuation of these spots on the sides and belly of the salamander differentiate it from the similar Spotted Salamander (*Ambystoma maculatum*). The patterning of spots on *A. tigrinum* has been utilized as means of identification on adults (Donnelly et al. 1994). Juveniles have much rounder spots except along the ventro-lateral margin where spots are larger (Juterbock and Owen 2013). The large wide head with rounded snout also stands out when peering down on this salamander.

The range of the *A. tigrinum* is expansive, running from the eastern US through the Midwest and much of the Great Plains from eastern Texas to southwest Minnesota. The range swoops around the Appalachian Mountains as far south as the Florida panhandle and north to southern New York. Much of their habitat selection seems dependent on the availability of breeding habitat defined as

permanent (or extended hydroperiod) fishless ponds due their extended growth as larvae compared to congeners (Juterbock and Owen 2013). Adults spend the majority of their time underground, but are located utilizing terrestrial habitats such as hardwood forests to prairies.



Interestingly when tested in comparison with other Ambystomatids, *A. tigrinum* was the only species to consistently dig their own burrows even when artificial burrows were provided highlighting their elevated digging ability (Semlitsch 1983).

Another often discussed adaptation, although more common in western related populations of tiger salamanders is **Environmentally induced polymorphisms** (Whiteman et al. 1998). This is the production of alternative morphologies to match environmental conditions. One develops in larvae as a specialized feeding mechanism enlarging the head and gape for cannibalizing conspecific larvae while another involves facultative **paedomorphosis**, becoming sexually mature without normal metamorphosis, maintaining gills as an adult. *A. tigrinum* is a generalist predator consuming other salamander larvae, tadpoles, crustaceans, insects, and other invertebrates as larval salamanders before continuing this trend as adult sit-and-wait predators (Juterbock and Owen 2013).

Globally, the Eastern Tiger Salamander is not considered imperiled, but is listed in some states within its range. Overall, the loss and degradation of habitat are the greatest concerns for the persistence of this salamander on the landscape. With efforts to preserve wetland habitat and mitigate habitat degradation, hopefully, we will continue to find this tiger in our backyards.

Works Cited

Donnelly M.A., C. Guyer, J.E. Juterbock, R.A. Alford . 1994. Appendix 2: Techniques for marking amphibians. Pages 277-284. In: Heyer W.R., M.A. Donnelly, R.W. McDiarmid, L.C. Hayek , M.S Foster., editors. Measuring and Monitoring Biological Diversity. Standard Methods for Amphibians. Smithsonian Institution Press. Washington, DC. 364 p.

Juterbock. J.E. and P.C. Owen. 2013. Eastern Tiger Salamander. In Pfungsten, R.A., J.G. Davis, T.O. Matson, G. Lipps, Jr., D. Wynn, and B.J. Armitage (Eds.), Amphibians of Ohio (Vol. 17, pp. 157–174). Ohio Biological Survey Bulletin New Series.

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Whiteman H.H., R.D. Howard, X. Spray, J. McGrady-Steed. 1998. Facultative paedomorphosis in an Indiana population of the Eastern Tiger Salamander, *Ambystoma tigrinum tigrinum*. Herpetological Review 29(3): 141-142.

Image description: *Ambystoma tigrinum* crawling through the leaf litter. Photo by Joseph Cannizzaro.

MWPARC Advisory Board Election Results

Another year brings new faces to positions in Midwest PARC! Welcome to the incoming MWPARC Co-chair, Jen Lamb (Minnesota)! To help transition into the new year, Travis Kurtz will be staying on as co-chair until **elections for a second co-chair can be held after the 2024 meeting**. We also want to welcome Shelby Timm (Missouri) and Andrew Kuhns (Illinois), who have been elected to the Advisory Board for the first time. Several members were re-elected to the board, including Dexter Mardis (Kansas), Dreux Watermolen (Wisconsin), Drew Davis (Texas, but previously in South Dakota), and Melissa Youngquist (Illinois). Welcome back, folks!

A huge **thank you** to our outgoing Advisory Board members, Mike Lannoo and Brock Streucker. We appreciate the time and energy you have given to MWPARC over the years, and hope to keep seeing you at future MWPARC events.

If you are interested in running for the MWPARC Advisory Board or for Co-chair in the future, check out the information on our MWPARC About page: <https://www.mwparc.org/about>.



***Image description:** Northern Leopard Frogs (*Lithobates pipiens*) one positioned on top of aquatic vegetation while the other rests within the water's edge. Photo by Melissa Youngquist.*

MWPARC Annual Meeting Update: 2024

This year's MWPARC Meeting will be a joint affair with national PARC and the Society for the Study of Amphibians and Reptiles (SSAR). The [2024 joint meeting](#) will be held in **Ann Arbor, MI** from **June 27 - 30th**. Several MWPARC task team meetings and social events will take place on Saturday afternoon. PARC and MWPARC **symposia will be held on Sunday**. Our topics include "**Climate Change & Herps: Past, Present, and Future**," and "**Urban Herps: Adapting and Thriving**."

Registration opens March 1, 2024 and **abstracts are due April 15, 2024**. [Stay tuned for more information!](#)

Fueling Student Field Experience Award (Travel Grant)

The **2024 Fueling Student Field Experience Awards** are coming up! We'll announce more details about these travel grants, which can be used to offset field research costs, in **February 2024**.

Want to see what prior grant recipients have been up to? Check out the [MWPARC Awards page!](#)

Outreach and Communication Task Team Election Results

Welcome our new officers!! The OCTT hops into the new year with two new **Co-Leads**: Danielle Galvin and Jesse Sockman. Jen Lamb, the outgoing Lead, will continue as WebMaster while becoming a [Co-Chair for MWPARC](#). The Newsletter welcomes Liam Feeney as a new **Co-Editor** along with incumbent Danielle Galvin. **Social Media Coordinators** hold onto a mainstay in Susanna Glass while new faces join the team in Luke Tonsfeld and Olivia Hanson.

The Outreach Communication Task Team functions to promote connection and facilitate community for those interested in herpetology in the Midwest while being a voice for the conservation of amphibians and reptiles. We are excited to see our team grow and continue this mission, but we must recognize the great impact our outgoing leadership positions made. The leadership of Jen Lamb was key in the development of our team and we look forward to seeing her as Co-Chair of MWPARC! Special thanks to Autumn Baker and Denise Blough whose dynamic efforts built upon and expanded MWPARC social media presence!

Stories From the Field

Elle Hoops

I have been helping out in the Kerby Laboratory at the University of South Dakota since I was a freshman. As a junior, I am fortunate enough to take part in a research project measuring the changes in metabolic rate in American bullfrogs exposed to contaminants and pathogens found in South Dakota. A memorable moment from this past summer is when we were catching tadpoles from a quickly draining raceway at a local fish hatchery. I have never experienced anything like being on my hands and knees in the mud on a 90 degree day with hundreds of tadpoles in our nets - not to mention the race against the crows to get to each one first. It truly was the most rewarding day!



Image description: Elle, posing for a portrait photo with a gray background. Photo courtesy of Elle Hoops.

Stories From the Field Submission: Do you have a story to share? Submit your story [here](#)!

2024 Meetings and Conferences

Mark your calendars!

[10th World Congress of Herpetology](#)

5-9 August 2024. The world congress will be held in **Kuching, Sarawak, Borneo** in conjunction with the second **Global Amphibian and Reptile Disease Conference (GARD)**.

[Early registration](#) is open until March 1st.

[Wetlands Science Conference](#)

20-22 February 2024. This conference is hosted by Wisconsin Wetlands Association in **Green Bay, Wisconsin.**

[Ohio PARC Conference](#)

10 April 2024. This conference is hosted at the Toledo Zoo and Aquarium in **Toledo, Ohio** with more information to come.

[Snake Ecology Group \(SEG\) VII Conference](#)

23-25 June 2024. This conference will be held in **Winter, Wisconsin.** [Registration](#) is open!

[Society for the Study of Amphibians and Reptiles \(SSAR\) Meeting](#)

27-30 June 2024. Together with PARC and International Society for the History and Bibliography of Herpetology (ISHBH), SSAR will hold their annual meeting in **Ann Arbor, MI** at the University of Michigan. Registration opens March 1st with Abstract deadlines falling on April 15th. The **MWPARC annual meeting** will occur in conjunction with this meeting. This meeting will include symposia topics such as “Climate change and herps: past, present and future” and “Herp populations in urbanized settings”. There will also be a special meeting for more information on how you can join the OCTT! **Stay tuned** for more information!

Hot Off the Presses! - Recent Publications **Scientific Journal Articles Featuring Herps in the Midwest**

“Rapid” assessments of wetlands for amphibians require performance evaluation: John Crawford and collaborators sampled 242 wetlands on 45 managed properties in Illinois for amphibians using dip nets and minnow traps. Each wetland was sampled 12 times in a year. They show that wetlands can be assessed in 1 year but 4-5 samples using multiple sampling methods spread across the spring and summer are necessary to accurately evaluate the amphibian assemblage of the wetland.

Crawford, J.A., W.E. Peterman, A.R. Kuhns, and C.A. Phillips. 2023. Effectiveness of Rapid Sampling Assessments for Wetland-breeding Amphibians. *Ecological Indicators* 154 (2023) 110736. Accessible at: <https://www.sciencedirect.com/science/article/pii/S1470160X23008786>

Longevity of Ornate Box Turtles in Iowa: Neil Bernstein and collaborators analyzed 29 years of field data to evaluate the survival of Ornate Box Turtles across Iowa. The results of this analysis indicate that 44% of individuals tracked during this study lived into their 30s and at least 3.5% lived into their 40s. The results of this study provide crucial information for conservation and management strategies for this state-threatened species.

Bernstein, N.P., McCollum, S.A., VanDeWalle, T.J., Black, R.W., Rhodes, R.R., Hughes, D.F. 2024. Longevity Estimates of Ornate Box Turtles (*Terrapene ornata*) in Iowa. *Chelonian Conservation and Biology*. Accessible at: <https://doi.org/10.2744/CCB-1578.1>

Where, oh where do the Timber Rattlesnakes roam? Scott Eckert and Andrew Jesper used VHF telemetry to locate and monitor the movements of 29 Timber Rattlesnakes (*Crotalus horridus*). The team calculated the home ranges for each snake and evaluated effects of sex, mass, SVL, and year on home range sizes. The data indicate that males travel further on average than females, particularly during the breeding season. Further, the average home range varies based on sex. The results of this study can be used to inform conservation and recovery management plans for this species.

Eckert, S.A. and Jesper, A.C. 2024. Home Range, Site Fidelity, and Movements of Timber Rattlesnakes (*Crotalus*

horridus) in West-central Illinois. *Animal Biotelemetry* 12(1). Accessible at:
<https://link.springer.com/article/10.1186/s40317-023-00357-8>

Want to see your research highlighted? Have you recently published on populations of amphibians or reptiles in the Midwest? We want to hear about it! Please reach out to **Liam Feeney** (ohioherping@gmail.com) and **Danielle Galvin** (dgalvin2@utk.edu) if you would like to highlight your research.

Header photo description: *Eastern Tiger Salamander (Ambystoma tigrinum) laying on top of a rock. Photo by Nate Engbrecht.*

We want your feedback: What would you like to see in future volumes of our newsletter? Give us more information by filling out this survey: <https://forms.gle/Hz9ZkznEFfiTE8a48>

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