



Midwest PARC Quarterly Newsletter - August 2023

Compiled by members of the **Outreach and Communications Team (OCT)**
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Herp Highlight: Blanding's Turtle

Blanding's Turtles (*Emydoidea blandingii*) are a charismatic semi-aquatic turtle known for its bright yellow throat and wide grinning beak. The Blanding's Turtle is a medium-sized turtle measuring 15 to nearly 28 cm in carapace length with a domed shell (Spetz et al. 2021). The Blanding's Turtle was given its name in honor of naturalist William Blanding. Blanding's Turtles are long-lived [with the eldest known in Michigan exceeding 90 years old](#) and continuing to actively nest with no signs of reproductive senescence (Congdon et al. 1993). Blanding's Turtles are sexually dimorphic, displaying longer tails in males with the cloaca extending beyond the carapace as well as a concave plastron. Females have a larger, flat



plastron compared to males. Additionally, Blanding's Turtles at hatching have a plastron absent any signs of a hinge but will achieve complete plastral kinesis by age 5 with varying levels of flexibility (Pappas et al. 2000). They are known to have a diverse omnivorous diet believed to be primarily composed of crayfish or snails dependent on the study (Spetz et al 2021).



Blanding's are active from late March to April until October or November depending on region and temperature as individuals have been known to emerge on warm/sunny winter days (Spetz et al. 2021). They are found most commonly in shallow water with abundant emergent vegetation and soft organic substrates including habitats such as lakes, ponds, marshes, swamps, bogs, wet prairies, sloughs, and even vernal pools with temporal variation (Spetz et al. 2021). The Blanding's Turtle calls home to 15 U.S. states across much of the Midwest and Northeastern US as well as central and southern parts of Canada, however,

suitable habitat for the species is often dwindling and isolated. This leads to the species being considered a species of conservation concern throughout its range (Willey and Jones 2014) and carrying designated status in 17 states and provinces ranging from **Endangered** to **Species of Concern**. Only Nebraska boasts a **Secure** status for Blanding's Turtles with a population exceeding 100,000 individuals. Currently the Blanding's Turtle is up for Federal review within the United States under the Endangered Species Act.

Blanding's Turtles are threatened by an additive combination of threats stemming from habitat loss of both wetland and surrounding upland habitat. The loss of these uplands and encroachment of humans on the remaining habitat has led to increased road mortality, loss of nesting areas, increased mesopredator predation on nests and adults, and illegal collection (Spetz et al. 2021). The delayed maturity (14 – 20 yrs), long generation time (~37 years) and long-lived nature of Blanding's Turtles can be masking the true condition of a population as they persist on the landscape despite decimated recruitment (Congdon et al. 1993).

As the threats to Blanding's Turtles mount, many efforts have been employed throughout their range to further understand the status of Blanding's Turtles, establish conservation plans, and attempt to reduce mortality while supporting recruitment. These practices include [implementing and testing methods to reduce roadkills](#) like using fencing and culverts. Similarly, activities to [cover nests](#), [head-start hatchling turtles](#), and [build nesting areas](#) are underway to provide alternatives to crossing roadways, combat mesopredator predation, and improve nesting conditions. While the battle to keep Blanding's Turtles on the landscape is far from over with a need for increased research and new challenges emerging such as [*Emydomyces testavorans*](#), Blanding's Turtles remain smiling so there must be hope.

Works Cited

- Congdon, J. D., Dunham, A. E., and R. C. van Loben Sels. 1993. Delayed Sexual Maturity and Demographics of Blanding's Turtles (*Emydoidea blandingii*): Implications for Conservation and Management of Long-Lived Organisms. *Conservation Biology*, 7(4), 826–833.
- Pappas, M. J., Brecke, B. J., and J. D. Congdon. 2000. The Blanding's Turtles (*Emydoidea blandingii*) of Weaver Dunes, Minnesota. *Chelonian Conservation and Biology*, 3(4), 557–568. <https://www.researchgate.net/publication/313041674>
- Spetz, J. C., Sheil, C. A., and T. L. Robison. 2021. Blanding's Turtle. In J. G. Davis, G. J. Lipps Jr., Wynn D., Armitage B.J., T. O. Matson, R. A. Pflingsten, & C. Caldwell (Eds.), *Reptiles of Ohio* (Vol. 20, pp. 157–177). Ohio Biological Survey Bulletin New Series.
- Willey, L.L., and M.T. Jones. 2014. Conservation plan for the Blanding's Turtle and associated species of conservation need in the Northeastern United States. Report to New Hampshire Fish and Game Department and The U.S. Fish and Wildlife Service, New England Office. 132 p.

****Disclaimer: all individuals pictured in this section were handled with the appropriate permits and with IACUC approval by trained researchers. No individuals were harmed during these projects.****

Image description: Top right: Female Blanding's Turtle (*Emydoidea blandingii*) captured during telemetry survey.
Bottom left: Juvenile Blanding's Turtle (*Emydoidea blandingii*) captured while trapping for population status assessment in Ohio. Photos by Jesse Sockman.

Annual Meeting: MWPARC

The 2023 Midwest Partners in Amphibian and Reptile Conservation meeting is on **August 25-27** in Makanda, Illinois at the **Touch of Nature Outdoor Education Center**. This year's meeting will offer exciting opportunities to attend talks and view posters on the latest research. Attendees will also have opportunities to go on a **field trip** to a nearby cypress swamp in the Shawnee National Forest.

The **business meeting on Friday** will focus on discussing the **open positions on the MWPARC Advisory Board**, and the open **Co-chair positions**. Future priorities for MWPARC (2024 and beyond) will also be discussed.

If you're interested in **Cricket Frogs**, **Crawfish Frogs**, **Smooth Green Snakes**, or **Outreach and Communication**, consider attending the **task team meetings** on Friday! Leads and co-leads for these task teams are listed below. You can reach out with questions about task teams to our MWPARC email: PARCMidwest@gmail.com

- **Cricket Frog Task Team:** Melissa Youngquist & Rori Paloski
- **Crawfish Frog Task Team:** Nate Engbrecht & Melissa Youngquist
- **Smooth Green Snake Task Team (new!):** Allison Sacerdote-Velat
- **Outreach & Communication Task Team:** Jen Lamb

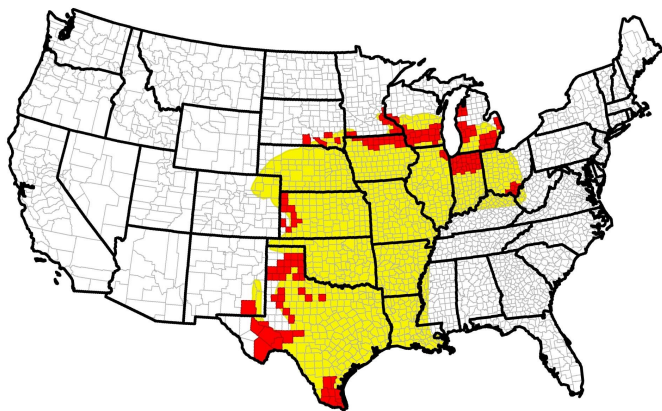


Support student research by [purchasing annual meeting swag](#) with the new logo! For more information regarding the meeting, registration, or lodging, check out the [website](#)!

Image description: MWPARC 2023 Annual Meeting Logo. The head of a Ranid species looking forward with a reflection in the water with the text MWPARC in yellow above the head. Logo designed by Matt Milkowski.

Call for Data: Blanchard's Cricket Frog

The MWPARC Cricket Frog Task Team is working to update the current status of the Blanchard's Cricket Frog (*Acris blanchardi*). This species began suffering declines around 50 years ago, however, recent data suggests that they may be recolonizing some areas in their historic range. They are currently a Midwest Species of Greatest Conservation Need, and the task team needs your help to update their distribution!



To help, the team requests photos and audio recordings of Blanchard's Cricket Frogs this summer. You can upload these files on the free mobile phone applications iNaturalist or on HerpMapper, or email your observations, GPS coordinates, and dates to parcmidwest@gmail.com.

If you are interested in collecting data for this important project or want to learn more, take a look at the [Cricket Frog Task Team call for data](#).

Image description: **Top:** Two Blanchard's Cricket frogs (*Acris blanchardi*) looking at each other. The frog on the right has an inflated vocal sac. Photo by Melissa Youngquist. **Bottom:** Map of the United States of America with states and counties outlined. This image depicts the distribution of the Blanchard's Cricket Frog (*Acris blanchardi*). Yellow indicates the historic range while red indicates "priority areas" for data collection. Photo courtesy of the MWPARC Cricket Frog Task Team.

Stories From the Field

Joey Cannizzaro: Last summer [2022], using funds awarded from the Midwest PARC student travel grant, I led and carried out turtle trap surveys for the endangered Blanding's turtle (*Emydoidea blandingii*) in Milwaukee county Wisconsin. The status of *E. blandingii* in Wisconsin's most populous county is unknown. So using travel funds and a partnership with the Schlitz Audubon Nature Center, I surveyed nature center aquatic habitats for the presence of the Blanding's turtle through the use of aquatic turtle hoop traps. Identifying



population size is integral in the continued proliferation and sustainable management of imperiled herpetofauna.

Furthermore, I tracked via VHF () radio telemetry an adult female *E. blandingii* post-spring emergence, pre- and post-nesting season and during late summer of 2022. I took data on location and use of habitat by the turtle. Understanding where a species spatially occurs is necessary for land managers to target and alter best management practices to support cryptic species.

Image description: Joey, standing in a wetland surrounded by dead trees, wearing chest waders and holding a large Blanding's turtle (*Emydoidea blandingii*). Photo courtesy of Joey Cannizzaro.

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

Meetings and Conferences

Mark your calendars!

[21st Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles](#)

July 31 - Aug. 3, 2023 in **Charleston, SC** hosted by the Turtle Survival Alliance and the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group.

[MWPARC Annual Meeting](#)

Save the date for the upcoming meeting **August 25-27, 2023** at Touch of Nature Outdoor Education Center in **Makanda, IL**.

[2023 North American Box Turtle Conservation Workshop](#)

If you are interested in participating in this workshop, save the date for **Sept. 29 - Oct 1, 2023** at the Elachee Nature Science Center in **Gainesville, GA**.

[Global Ranavirus Consortium Meeting](#)

If you are interested in ranaviruses or in joining the Global Ranavirus Consortium, attend the online webinar and workshop **October 14-15, 2023**.

[2023 Amphibian Disease Conference](#)

The amphibian disease conference will be held **November 11-12, 2023** in **Nashville, TN**. More information on registration and abstract submission is soon to come!

[The Wildlife Society Annual Conference](#)

The nationwide meeting of The Wildlife Society will be held **Nov. 5 - 9, 2023** at the Galt House Hotel in **Louisville, Kentucky**.

Hot Off the Presses! - Recent Publications

Scientific Journal Articles Featuring Herps in the Midwest

Older Ornate Box Turtles Have Larger Home Ranges Compared to Younger Ornate Box Turtles: Over 6 years, researchers captured and marked Ornate Box Turtles (*Terrapene ornata ornata*) in Johnson County, Iowa. Captured individuals were partitioned into one of four age classes, and a selection of individuals were fitted with VHF radiotransmitters. Individuals were located every ~48 hours and the researchers calculated minimum convex polygon weekly home ranges and linear distance moved every 2 days. The best predictor of distance moved was age, with older Ornate Box Turtles moving further compared to younger age classes.

Bernstein, N. P., Fendrich, R. H., McCollum, S. A. (2023). Do Home Range, Movement Patterns, and Habitat Use of Ornate Box Turtles (*Terrapene ornata ornata*) Differ Among Age Classes? *Journal of Herpetology*, 57(1):1-10. <https://doi.org/10.1670/21-005>.

Don't Get Rattled: Decreasing Incidence of Envenomation by Timber Rattlesnakes in the Upper Mississippi River Valley: The Timber Rattlesnake (*Crotalus horridus*) is a venomous species native to the Upper Mississippi River Valley. From 1985-2015, declines were measured in populations, prompting the protection of this species. Researchers found that from 1982-2020, a total of 29 confirmed cases of bite by Timber Rattlesnakes occurred in Minnesota and Wisconsin. The total incidence of envenomation by Timber Rattlesnakes decreased over this period, with no bite-related mortalities occurring.

Keyler, D. E. (2023). Timber Rattlesnake (*Crotalus horridus*): Biology, conservation, and envenomation in the Upper Mississippi River Valley (1982-2020). *Toxicon*:X, 19: 100167. <https://doi.org/10.1016/j.toxcx.2023.100167>.

Elevated Soil pH Does Not Impact American Toads or Their Invertebrate Prey: Researchers constructed enclosures to investigate the effect of acidification on invertebrate abundance and diversity and the survival, growth and diet of American Toads (*Anaxyrus americanus*). Although toad mass was greater after 90 days in the plots with more acidic soil, there was no difference in survival or diet. There was also no effect of increased acidity on invertebrate abundance or diversity, however, researchers found that the temporary enclosures themselves corresponded with decreased invertebrate abundance and diversity.

Dimitrie, D. A., Burke, D. J., and Benard, M. F. (2023). Response of American Toads and Their Invertebrate Prey to Experimentally Elevated Soil pH. *Ichthyology & Herpetology*, 111(1): 128-137. <https://doi.org/10.1643/h2020057>.

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 **Jesse Sockman** (sockman.15@osu.edu) and **Danielle Galvin** (danielle.galvin@coyotes.usd.edu) if you would like to highlight your research.

Header photo description: *Blanding's Turtle (Emydoidea blandingii)* located as part of a status assessment in Ohio. Photo by Jesse Sockman.

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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