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<p style="text-align: center;">KHS 44th Annual Meeting</p> <p style="text-align: center;"><i>Friends University, Wichita, Kansas</i></p> <p style="text-align: center;">4-5 November 2017</p>

KHS BUSINESS

The Kansas Herpetological Society 43rd Annual Meeting

As is tradition, the first weekend in November was once again the gathering time for herpetologists from across Kansas, the Great Plains, and the nation to descend upon Kansas for three days of oral presentations, posters, and first-rate discussion about amphibians, reptiles, and turtles. The 43rd Annual Meeting of the Kansas Herpetological Society (KHS) was held at Rockhurst University in Kansas City, Missouri November 4th-6th, 2016.

Meeting attendees gathered for social interactions, unofficial meeting business and discussions Friday evening at the Fuel Bar and Grill in Overland Park, Kansas. Food, beverages, and conversation were all enjoyed, and it was the perfect opportunity for meeting attendees to get those awkward "I've missed you since our last meeting" hugs out of the way so that Saturday morning's registration activities could flow more smoothly and without unnecessary (and sappy) interruptions.

Official meeting activities began Saturday morning with a welcome by KHS President **Eric Kessler**. Immediately following Eric's welcome was the first presentation of the weekend – the Keynote Address by KHS's own **Robert Powell**. Bob Powell is a Professor at Avila University in Kansas City, Missouri and has dedicated much of his research career to studying the life histories of island-inhabiting herpetofauna in the West Indies. His keynote presentation, titled *Chasing Lizards in Paradise: Amphibians and Reptiles of the St. Vincent and Grenada Island Banks*, filled the meeting hall and gave attendees the opportunity to see some of the beautiful habitat and diverse herpetofauna on these island paradises. Following Bob's presentation was a very informative presentation by **David A. Penning** of Missouri Southern State University. David's talk was titled *When hypotheses collide: Understanding the contractile mechanisms that drive snake strike performance*. David has recently received a lot of media attention from across the globe for some of his snake strike research. As expected, his presentation was both entertaining and highly informative.

Of the remaining talks during the Saturday morning session, four presenters represented long-time KHS supporter **Rich Kazmaier's** crew of students from West Texas A&M University. **Logan D. Ediger** presented a *Preliminary analysis of niche segregation in a coastal Texas*

aquatic snake community; **J. Aaron Zenor** talked about *Maximizing Yellow Mud Turtle captures: The influence of bait and trap type*; **Michelle L. Caruana** spoke about *Responses of herpetofauna to prescribed burning in eastern Texas*; and **Trevor J. McVay** presented on *Variation in Yellow Mud Turtle demography across a 950-km north-south gradient*. Also in the morning session **M. Neil Bass** of Fort Leavenworth, Kansas gave a presentation titled *Killing two birds, hopefully herons, with one stone: Frog call surveys at Fort Leavenworth, Kansas*.

After breaking for the annual KHS Group Photograph (arranged and taken by **Greg Sievert** of Emporia State University) and lunch at several local establishments, additional presentations were given during the afternoon scientific paper session. The first afternoon session included four presenters representing Fort Hays State University in Hays, Kansas: **Sean C. Rogers** – *Utilization of unmanned aircraft systems (UAS) for surveying herpetofaunal habitat*; **Ariel Snyder** – *Preliminary results of a survey of Kansas amphibians affected by chytrid*; **Joshua J. Mead** – *Western Massasauga: Insights from radio-telemetry*; and **Allison Hullinger** – *Habitat associations of the Broad-headed Skink (Plestiodon laticeps) in Kansas*. The second afternoon session included the following presentations by speakers from various locations outside of Kansas: **Saidee J. Hyder**, University of Central Missouri, Warrensburg, MO – *Comparing the home ranges of male and female Ornate Box Turtles (Terrapene ornata) and Three-Toed Box Turtles (Terrapene carolina triunguis) in Johnson County, Missouri*; **Eva J. Gann**, University of Central Missouri, Warrensburg, MO – *Prevalence of Salmonella in two species of box turtles, (Terrapene carolina triunguis and Terrapene ornata), in Johnson County, Missouri*; **Carolyn Reiland-Smith**, Florida Atlantic University Boca Raton, FL – *Seed dispersal of native Florida plants by the Gopher Tortoise (Gopherus polyphemus)*; and **Colleen Rothe-Groleau**, University of Nebraska at Omaha, Omaha, NE – *Natural history of a population of Prairie Rattlesnakes (Crotalus viridis)*.

After all presentations had been given, the final activity of the afternoon was the annual KHS business meeting directed by President **Eric Kessler**. At the start of the meeting, the 2016

Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology was presented by KHS Awards Committee Chairperson **Daniel D. Fogell**. This year's Collins Award was presented to **George Pisani** for his outstanding manuscript titled *Characterization and significance of sexual dimorphism in gape size in Virginia valeriana ssp with comparisons to V. striatula*, which was published in *Collinsorum*, The Journal of Kansas Herpetology. During the business meeting, reports were presented by the Treasurer (**Kelley Tuel** reported for **Daren Riedle**), Secretary (**Kelley Tuel**), Editor (**Curtis Schmidt**), Historian (**Suzanne Collins**) and the President-Elect (**Dexter Mardis**), who reported on the status of the 44th Annual Meeting to be held in November 2017 and who will take over the position of President on January 1st, 2017. Additionally, elections for officers were held. **Lynette Sievert** of Emporia State University in Emporia, Kansas was elected as President-Elect for 2018. And for Treasurer and Secretary, **Daren Riedle** and **Kelley Tuel** were elected respectively. Each will continue serving in their current roles through 2017.

After meeting attendees acquired nourishment, meeting activities moved to the City of Leawood City Hall where **Scott Gamerl** had prepared the venue for the Annual KHS Awards Ceremony and the Annual KHS Auction. Several grants and awards were presented once again by KHS Awards Committee Chairperson Dan Fogell. The *Henry S. Fitch-Dwight R. Platt Award for Excellence in Field Herpetology* was presented to **Curtis J. Schmidt** of the Sternberg Museum of Natural History in Hays, KS. This award comes with a stipend of \$200.00. The 2016 recipient of the *Howard K. Gloyd-Edward Harrison Taylor Scholarship* of \$300.00 was **Joshua Mead**, a graduate student at Fort Hays State University. The *Alan H. Kamb Grant for Research on Kansas Snakes* was presented to **Greg Sievert** of Emporia State University along with a \$300.00 stipend. The *George Toland Award for Ecological Research on North American Herpetofauna* is given annually to an outstanding student presentation given at that year's Kansas Herpetological Society meeting. This year's Toland Award, as well as a stipend of \$200.00, was presented to **Carolyn Reiland-Smith** of Florida Atlantic University in Boca Raton, FL for her outstanding presentation on seed dispersal of native Florida plants by the Gopher Tortoise. Once again this year attendees were allowed to present posters if they desired, and for the second year the *Walter Meshaka Award* was presented to the best poster presen-

tation. **David A. Penning** of Missouri Southern State University was the winner of the Meshaka Award for his excellent poster titled *Here be a giant: Using living snakes to predict the performance of a prehistoric apex predator* (*Titanoboa cerrejonensis*).

Saturday evening's activities continued after the awards ceremony with the always entertaining KHS auction. This year's auction was conducted by co-auctioneers **Dan Fogell** and **Eric Thiss** with assistance from Eric's spawn, **Evan Thiss** and Evan's BFF **Anthony Bostwick**, the hatchling of **Steven Bostwick**. Highlights of this year's auctioned wares included a quality quilt of herpetological design hand-sewn by the maternal parent of long-time KHS member **Travis W. Taggart**, (aka **Germaine Taggart**) as well as what has become an annual KHS auction tradition – the always sought-after custom cross-stitch provided by **Eva Horne** of Kansas State University. This year's cross-stitch theme was dart frog diversity. One of the best bidding wars of the evening took place between auction assistants Evan and Anthony, as they each outbid each other for a pair of Star Wars light sabers, donated by **Eva Gann**. After a bout of aggressive back and forth bids, it was suggested that they pool their resources and split the costs of the sabers so each could own one. The tadpoles found this agreeable, and the light sabers found new homes. And if you were a student of herpetology and looking to add some classic books to your collection, this year's auction provided ample opportunities to do so. Dozens of classic and contemporary herpetology titles were available, and most sold for well below their value. After the auction, larval auction assistants Evan and Anthony treated attendees to a simulated Star Wars light saber battle using the light sabers they co-purchased earlier in the evening. It was somewhat entertaining.

As the evening came to a close, some attendees returned home while others returned to their temporary lodging, because for the first time in many years there were no official meeting activities planned for Sunday. Thus the 43rd Annual Meeting of the Kansas Herpetological Society came to a close. Plans for the 44th Annual Meeting are already underway. President-Elect Dexter Mardis reminded attendees that the 44th Annual Meeting of the Kansas Herpetological Society will take place in Wichita, Kansas November 3rd-5th, 2017.

DAN FOGELL,
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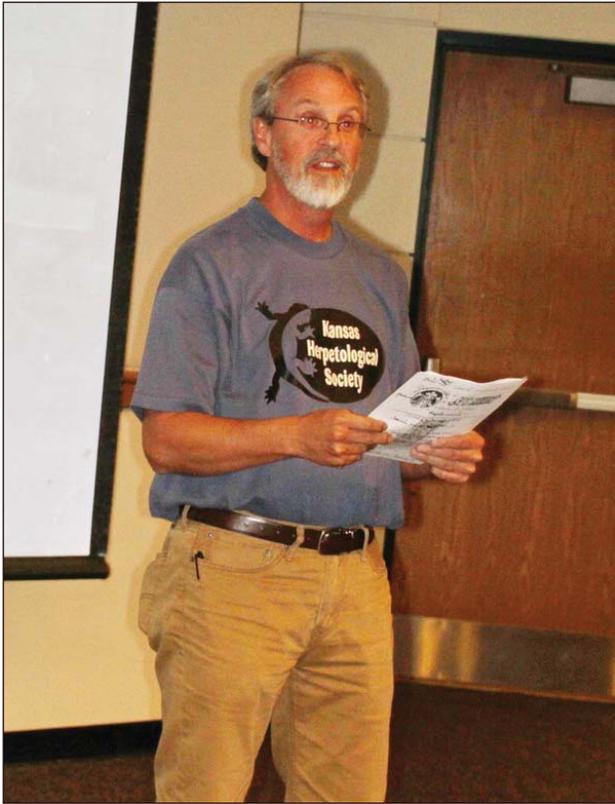
KHS Group Photograph for the 43rd Annual Meeting at Rockhurst University. © Greg Sievert.



Eva Horne and Lynnette Sievert prepare to listen to some of Saturday's presentations. © Greg Sievert.



KHS Awards Committee Chairperson Dan Fogell presents The Collins Award to recipient George Pisani. © Greg Sievert.



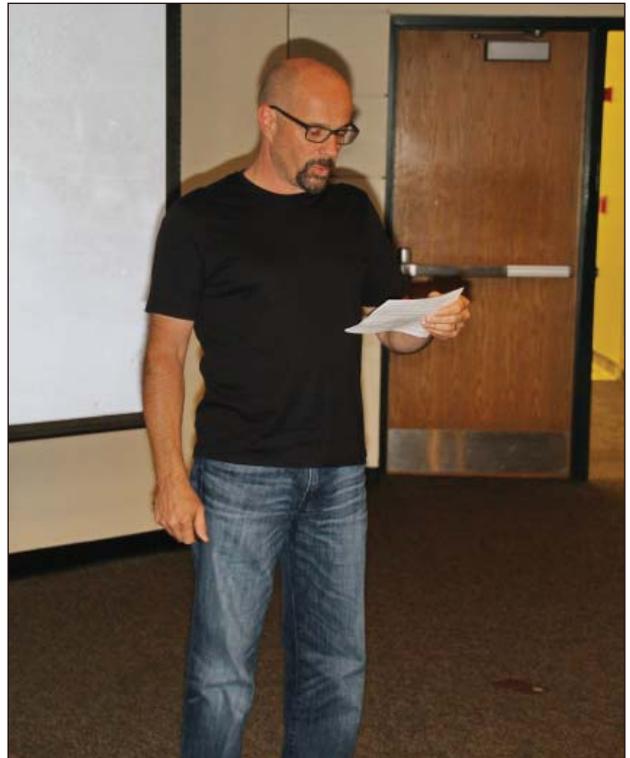
KHS President Eric Kessler welcomes meeting attendees. © Greg Sievert.



KHS Secretary Kelley Tuel speaks to the crowd. © Greg Sievert.



KHS Historian Suzanne Collins gives a report to the Society as well as a plea for any historically relevant material. © Greg Sievert.



KHS Nominating Committee Chairperson Dan Carpenter reads a list of nominees for leadership positions. © Greg Sievert.



© Greg Sievert.



Dan Fogell presents Curtis Schmidt with the Fitch-Platte Award. © Suzanne Collins.



Josh Mead accepts the 2016 Gloyd-Taylor Scholarship from Awards Committee Chairperson Dan Fogell. © Suzanne Collins.



Carolyn Reiland-Smith receives the George Toland Award from Awards Committee Chairperson Dan Fogell. © Suzanne Collins.



Dan Fogell presents the 2016 Walter Meshaka Award to David Penning. © Suzanne Collins.



Bill Stark of Fort Hays State University with his newly-acquired dart frog cross-stitch. © Suzanne Collins.



Hadley Tuel, helps out with the auction by sporting a Milk-snake necklace. © Suzanne Collins.



Jacob Basler seems perplexed by the milk snake necklace he purchased during the auction. © Suzanne Collins.



KHS President-Elect Dexter Mardis explains the story behind a painting offered for auction. © Suzanne Collins.



Tony and Lisa Bridger showing pride for the painting of a leopard frog they purchased during the auction. © Suzanne Collins.



Awards Committee Chairperson Dan Fogell presents Greg Sievert with the Alan Kamb Grant Award for 2016. © Suzanne Collins.



Evan Thiss and Anthony Bostwick show off the hand-crafted, herpetology-themed quilt sewn by Germaine Taggart. © Suzanne Collins.



Auction assistant Evan Thiss holds up an auction item for bidders to view. © Suzanne Collins.



Auctioneer Dan Fogell preparing to auction off one of the late Joseph T. Collins' personal field collecting bags. © Suzanne Collins.

NOTES

Taney County, Missouri Herpetofaunal Endeavor, 24-26 May, 2014

Grabbing onto a three-day weekend with the fervor only youthful herpetologists can, we launched ourselves into an Ozarkian Memorial Day Weekend with high expectations and a long list of goals. The week preceding had seen high temperatures hover in the mid 80's °F with lows no less than 74°F, and sporadic rain was predicted for the weekend. Aaron and I were slated to meet at my brother's house late on Friday night, 23 May 2014, so as to use his lowland farm as a base of operations. I arrived just after nightfall to be greeted with the sounds of unquantifiable hordes of Anurans. Grey Treefrogs, Spring Peepers, Eastern Narrow-Mouthed Toads, and several other presumably present species amorously called out to each other as I drove down Highway 65 southbound from Springfield.

Waking up early on Saturday, 24 May, we birded our way down the old, forested gravel road from my brother's house to the pastures, where the sheets of tin awaited. The tin had been exhumed from the depths of the previous owner's landfill the autumn prior and deployed throughout the pastures and forest edges. The humidity was 100%, and fog thick from the night's rain made us regret putting on clean, dry clothes. The dozen or so pieces of tin yielded a brace of Ring-necked Snakes, two Common Five-lined Skinks, a small Eastern Milksnake, and young adult Eastern Copperhead. A most auspicious beginning!

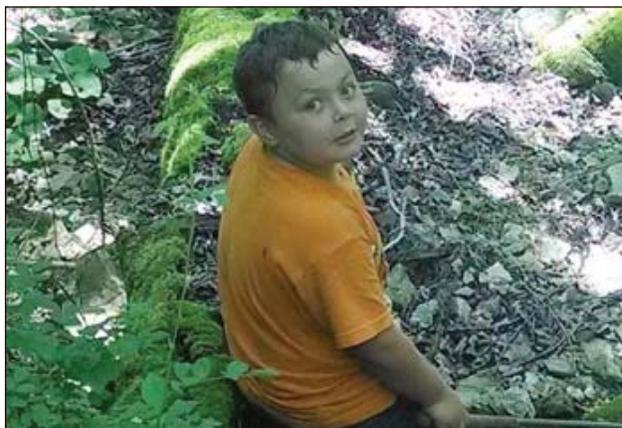
Throughout the next two and a half days we drenched every set of clothes in humidity and sweat, practiced being good primates by removing ticks from each other's backs, ate plenty of good food, and herped almost every conceivable habitat available in the county. We were sporadically joined afield by four of my nieces and nephews, and my mother. Aaron's admirable need to add



An adult form Oklahoma Salamander (*Eurycea tynerensis*) found in moist leaves at the bottom of a seepage feeding into Houseman Creek. Photo by Dexter Mardis

Herpetofaunal count:

American Toad	10
Grey Treefrog.....	2
Spring Peeper	1
Eastern Narrow-mouthed Toad	1
Southern Leopard Frog.....	2
Oklahoma Salamander	1
Western Slimy Salamander	5
Ozark Zig-zag Salamander.....	4
Snapping Turtle.....	1
Northern Map Turtle.....	6
Ouachita Map Turtle.....	3
Three-toed Box Turtle	14
Pond Slider	2
Eastern Musk Turtle	1
Prairie Lizard	13
Southern Coal Skink	1
Common Five-lined Skink	9
Little Brown Skink	3
Six-lined Racerunner.....	5
Prairie Kingsnake.....	1
Speckled Kingsnake	1
Eastern Milksnake.....	1
Rough Greensnake	1
Western Ratsnake.....	5
Eastern Copperhead.....	4
Western Wormsnake	4
Ring-necked Snake	9
Flat-headed Snake.....	1
Common Watersnake	1
DeKay's Brownsnake.....	7
Rough Earthsnake	6



Parker R. Mardis, rests briefly after scrambling down a brook chasing Ozark Zig-Zag Salamanders (*Plethodon angusticlavius*). Photo by Dexter Mardis

Western Pygmy Rattlesnake to his life list took us to glades and pine forests where we encountered Speckled Kingsnakes, Rough Earthsnakes, Eastern Narrow-mouthed Toads, and several lizard species. We slogged our way through creeks, streams, and barely dribbling brooks seeking salamanders to feed my obsession. Turtle traps were set, and I added the Eastern Musk Turtle to my life list. Overall, the weekend yielded 31 species of amphibian and reptile.

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Late-seasonal observation of a Plains Garter Snake (*Thamnophis radix*) consuming a Boreal Chorus Frog (*Pseudacris maculata*) in Nebraska

The Plains Garter Snake (*Thamnophis radix*) feeds upon various prey including anurans, fish, earthworms, and small mammals (Jordan 1967, Hart 1979, Dalrymple and Reichenbach 1981, Rossman et al. 1996, Ernst and Ernst 2003, Tuttle and Gregory 2009). Multiple researchers have suggested that *T. radix* displays a generalist feeding strategy (Halloy and Burghardt 1990, Tuttle and Gregory 2009). Frogs are a major part of this species diet, especially at northern reaches of its distribution (Hart 1979, Tuttle and Gregory 2009). Seasonality affects frequency of prey consumption, with feeding declining during the active season (Tuttle and Gregory 2009). Herein, we report on a *T. radix* consuming a Boreal Chorus Frog (*Pseudacris maculata*) late in the season in northeastern Nebraska.

On 23 October 2014, we collected a *T. radix* that recently had ingested a *P. maculata* in Boone County, Nebraska (0.4 km N, 10.2 km W Petersburg; 41.85733°N, 98.20197°W; NAD83). The snake was found dead on a gravel road in the flood plain of Beaver Creek, recently hit by a vehicle. The area immediately surrounding the locality consisted of pastures, some hay fields, and small marshes. The *T. radix* had a snout-vent length of 215 mm, tail length of 65 mm, and weight of 7 g without the frog. The *P. maculata* had a snout-vent length of 22 mm and a weight of 1 g. Both individuals were deposited in the herpetological collections at the Sternberg Museum of Natural History (FHSM 17124 *Thamnophis* and 17125 *Pseudacris*), Fort Hays State University, Hays, Kansas. Voucher specimens were collected under authorization by the Nebraska Game and Parks Commission to Keith Geluso (Scientific and Educational Master

Permit No. 617). The daytime high in nearby Albion was 20.6°C (wunderground.com), but the morning was foggy. We observed a number of other snakes on roads that day starting at about 1:00 pm in nearby counties (Antelope Co., 1 *Thamnophis sirtalis* and 1 *T. radix*; Boone Co., 3 *T. sirtalis*; Greeley Co., 3 *T. radix* and 3 *Tropidoclonion lineatum*; and Wheeler Co., 4 *T. radix* and 1 garter snake spp.), with some representing new county records (Andersen et al. 2015).

Plains Garter Snakes are known to eat *P. maculata* in other parts of its distribution (e.g., Gregory 1977, Hart 1979, Tuttle and Gregory 2009), and to our knowledge, *T. radix* only has been reported feeding on this frog species once in Nebraska (Ballinger et al. 1979, Ballinger et al. 2010). This observation is likely one of the latest observations of feeding by snakes in Nebraska, and possibly by this species throughout its distribution. At the northern limit of its range in Alberta, Canada, *T. radix* feeds mostly from late May to late August, but all snakes at that site ceased eating by late September presumably to prepare for hibernation or due to the lack of available food (Tuttle and Gregory 2009). Our observation demonstrates that at more southerly areas of its distribution, *T. radix* feeds over a longer period of time, potentially associated with more abundant prey and warmer temperatures at this time of year. Garter snakes are known to feed in the fall until the first extended cold spell when snakes proceed to enter hibernacula; however, they do not feed during warm spells in winter when individuals emerge from hibernacula to sun themselves for short periods of time (Carpenter 1952, Fitch 1999). Our late October observation suggests that

feeding is still beneficial for snakes to this date, as continued feeding into fall likely is related to physiological needs for snakes to store reserves for hibernation (Carpenter 1952).

In Nebraska, sightings of *T. radix* are not uncommon in November, but most have returned to hibernacula by October (Fogell 2010). Searching the herpetological specimens of *T. radix* housed at the University of Nebraska State Museum, Division of Zoology, we only observed four specimens from Nebraska with later dates of activity (UNSM ZM 3296, 3297 from 26 December 1971 in Cuming County, UNSM ZM 7119 from 31 October 1976 in Hamilton County, and UNSM ZM 8061 from 13 November 1978 in Lancaster County). We also have documented this species active in late October on a number of occasions (Geluso 2012). To the north in Minnesota, *T. radix* is active late April through September (Ernst and Barbour 1989), but to the south in Kansas and northwestern Missouri, they were reported active from March to November (Kansas; Collins 1993) and early April to mid-November (Missouri; Rossman et al. 1996). In northern Illinois, at a similar latitude, *T. radix* was active through October (Seibert and Hagen 1947). More recently, however, Collins et al. (2010) stated that in Kansas this species is recorded active annually from early March to late December. If climate continues to shift in the Great Plains, continuing to publish similar natural history observations on herpetofauna would be fruitful to track how species are changing their behaviors, distribution, or both.

We thank Curtis J. Schmidt (Sternberg Museum of Natural History, Hays, Kansas) for museum matters related to our research and for verifying the identification of our specimens. We thank Thomas Labedz (University of Nebraska State Museum, Lincoln) for information on herpetofauna records from Nebraska at the state museum.

LITERATURE CITED

- Andersen, B. R., M. G. Bright, E. D. Plock, J. D. Wiese, M. M. Brown, A. J. Forrester, K. E. Francis, M. S. Franks, B. J. O'Connor, L. R. Slepicka, A. M. Yantzie, A. E. Bridger, C. T. Svoboda, and K. Geluso. 2015. Fourteen county records of herpetofauna from Nebraska, USA, 2014-2015. *Collinsorum* 4: 7-10.
- Ballinger, R. E., J. D. Lynch, and P. H. Cole. 1979. Distribution and natural history of amphibians and reptiles in western Nebraska with ecological notes on the herptiles of Arapaho Prairie. *The Prairie Naturalist* 11: 65-74.
- Ballinger, R. E., J. D. Lynch, and G. R. Smith. 2010. Amphibians and reptiles of Nebraska. Rusty Lizard Press, Oro Valley, Arizona. 400 pp.
- Carpenter, C. C. 1952. Comparative ecology of the Common Garter Snake (*Thamnophis s. sirtalis*), the Ribbon Snake (*Thamnophis s. sauritus*), and Butler's Garter Snake (*Thamnophis butleri*) in mixed populations. *Ecological Monographs* 22: 235-258.
- Collins, J. T. 1993. Amphibians and reptiles in Kansas. University of Kansas Publications, Museum of Natural History, Public Education Series. Third edition, revised. 13: 1-397.
- Collins, J. T., S. L. Collins, and T. W. Taggart. 2010. Amphibians, reptiles, and turtles in Kansas. Eagle Mountain Publishing, LC, Eagle Mountain, Utah. 312 pp.
- Dalrymple, G. H., and N. G. Reichenbach. 1981. Interactions between the Prairie Garter Snake (*Thamnophis radix*) and the Common Garter Snake (*T. sirtalis*) in Killdeer Plains, Wyandot County, Ohio. *Ohio Biological Survey, Biology Notes* 15: 244-250.
- Ernst, C. H., and R. W. Barbour. 1989. Snakes of eastern North America. George Mason University Press, Fairfax, Virginia. 282 pp.
- Ernst, C. H., and E. M. Ernst. 2003. Snakes of the United States and Canada. Smithsonian Institution Press, Washington D.C. 680 pp.
- Fitch, H. S. 1999. A Kansas snake community: composition and changes over 50 years. Krieger Publishing Company, Malabar, Florida. 165 pp.
- Fogell, D. D. 2010. A field guide to the amphibians and reptiles of Nebraska. Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln. vi + 158 pp.
- Geluso, K. 2012. Sixteen county records of herpetofauna from south-central Nebraska. *Collinsorum* 1: 3-6.
- Gregory, P. T. 1977. Life history observations of three species of snakes in Manitoba. *The Canadian Field-Naturalist* 91: 19-27.
- Halloy, M., and G. M. Burghardt. 1990. Ontogeny of fish capture and ingestion in four species of garter snakes (*Thamnophis*). *Behaviour* 112: 299-318.
- Hart, D. R. 1979. Niche relationships of *Thamnophis radix haydeni* and *Thamnophis sirtalis parietalis* in the interlake district of Manitoba. *Tulane Studies in Zoology and Botany* 21: 125-140.
- Jordan, O. R. 1967. The occurrence of *Thamnophis sirtalis* and *T. radix* in the prairie-for-

- est ecotone west of Itasca State Park, Minnesota. *Herpetologica* 23:303-308.
- Rossman, D. A., N. B. Ford, and R. A. Seigel. 1996. The garter snake: evolution and ecology. University of Oklahoma Press, Norman. 332 pp.
- Seibert, H. C., and C. W. Hagen, Jr. 1947. Studies on a population of snakes in Illinois. *Copeia* 1947:6-22.
- Tuttle, K. N., and P. T. Gregory. 2009. Food habits of the Plains Garter Snake (*Thamnophis radix*) at the northern limit of its range. *Journal of Herpetology* 43:65-73.
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The Utilization of Senesced Wetland Plant Material by *Thamnophis sirtalis* as a Thermoregulation Microsite in a Flooded System

Resource availability and the cost-benefit of obtaining resources can determine how organisms select for habitat (Endara and Cooley 2011). In ectotherms, especially herpetofauna, microsite selection is dictated, in part, by thermoregulation (Huey 1991; Blouin-Demers and Weatherhead 2001; Blouin-Demers and Weatherhead 2002). Garter Snakes (*Thamnophis* spp.) have demonstrated preferred body temperatures around 30°C (Carpenter 1956; Peterson 1987; Rosen 1991). Maintaining optimal body temperature is vital in *Thamnophis* spp., as embryonic development (Zehr 1962), growth rate (Heckrotte 1967; Bronikowski 2000) and physical performance (Heckrotte 1967; Jayne and Bennett 1990) are compromised when internal temperatures drop. Preference of microhabitat varies for heliothermic (sun-basking) snake species both temporally and spatially: with season, weather, time of day, reproductive status, and behavioral activity (Sievert and Hutchison 1989; Rosen 1991). Adequate microsites for heliotherms are restricted by the risk of exposure to predation, especially by avian species (Webb and Whiting 2005; Sergio and Shrine 2015) and barriers, including roads and flooding (Shine and Mason 2004). Several *Thamnophis* spp. are closely associated with wetland habitats and have evolved behavioral and physiological adaptations to accommodate fluctuations in these systems, (Kephart and Arnold 1982; Halstead et al. 2016) including the ability to swim (Conant 1963; Fleharty 1967; Arnold and Wassersug 1978; Munk 2008).

On 2 June 2016, between 08:00-08:10 h (sunrise at 06:02 h, air temperature = 18 °C, clear sky) one adult *Thamnophis sirtalis* was found sun-basking 10-15cm above water in a flooded wet meadow habitat on a layer of thatch composed of senesced common threesquare

(*Schoenoplectus pungens*). The individual was left undisturbed, but assumed to be female based on total length estimated at 75cm, based on a voucher picture including a 13cm mechanical pencil for size reference (Figure 1). The sunning *Thamnophis sirtalis* was detected about 150m south of a long-term biological monitoring site (40.796085° N, 98.415123° W) operated by the Crane Trust, a small conservation NGO, on the northern half of Mormon Island, Hall County, Nebraska. Mormon Island consists of 2,700 acres (1,100 ha) of lowland tallgrass prairie and sub-irrigated wet meadow habitat located between two channels of the Platte River (Kaul and Rolfmeier 1993; Currier 1982), 2 km southeast of the Interstate-80 and Highway-281 to Grand Island, NE interchange. The northern half of the island is composed of contiguous relic wet meadow habitat that is commonly flooded during the spring and early summer and sub-irrigated by the Platte River year round providing additional moisture to



Figure 1. *Thamnophis sirtalis* voucher photo next to 13cm mechanical pencil for size reference.

deep rooted prairie plants (Svejcar 1990; Kaul and Rolfsmeier 1993; Currier 1982). Thatch accumulation was noted to be concentrated but uneven in wet depressions comprised of common threesquare (*Schoenoplectus pungens*), switchgrass (*Panicum virgatum*), prairie chordgrass (*Spartina pectinata*), and Indian hemp (*Apocynum cannabinum*). The thatch where the individual was located was approximately 6cm thick with slow flowing water on all sides and below, effectively acting as an island microsite utilized for heliothermic activity.

This observation is a testament to *T. sirtalis* behavioral adaptations to this wet meadow system. Flooding on Mormon Island can persist for several months, leaving only the highest sandy ridges open for sun basking herpetofauna. The ridges lack canopy cover as vegetation is sparse from grazing by stocked cattle used to manage the island, which prefer more upland vegetation. Red-tailed Hawks (*Buteo jamaicensis*), Northern Harriers (*Circus cyaneus*) and other raptor species are observed frequently on the island, both of these species will take snakes when available (Sparkman et al. 2013). Raptor predation success greatly increases in short vegetation scenarios (Baker and Brooks 1981; Preston 1990) and snakes sun-basking on the ridges are likely less costly for birds of prey to search for. The taller vegetation in the wet lowlands offered greater canopy cover, while the elevated thatch suppressed enough vegetation to let light through for thermoregulation, so little was sacrificed by the individual. Additionally, the tan color of the thatch, while being surrounded in water, could provide more heat than the living green vegetation in the direct vicinity. Reviewing the literature yielded no other documentation of *T. sirtalis*, or any other *Thamnophis* spp., exploiting thatch as a basking surface for thermoregulation in a flooded system.

A herpetological survey of Mormon Island in 2009 and 2010 found *T. sirtalis* to be more common in areas near or adjacent to standing water and to have high populations, making it the second most common reptile on the island (Harner and Geluso 2011). The success of *T. sirtalis* in this shallow floodplain may be in part related to behavioral adaptations such the one noted here; sun basking on thatch as well as other adaptations noted in the literature such as burst swimming (Munk 2008). Though *T. sirtalis* seems well adapted to the environment preserved on the wet meadow island, their

future outside of this system is unclear. Wet meadows along the Platte River provide nutrient rich soils and nearly all of it has been tilled for agricultural production (Noss et al. 1995). Anthropogenic use of water from the river has also narrowed and channelized the river where these wet meadows still exist, reducing the intensity and frequency of flood pulses and leaving space for woody plant encroachment (Ward and Stanford 1995; Strange et al. 1999; Condon 2005). The vast quantities of water that would have filled these wet meadows almost every year have been dammed along the Platte River to be sequestered for later agricultural irrigation, altering the microclimates of Mormon Island. Viable habitat continues to be restricted (Pomara et al. 2014) or converted and global climate change (Araújo et al. 2006) may put specialist snake species in great peril as the worldwide abundance and diversity of snakes is declining.

LITERATURE CITED

- Araújo, M. B., W. Thuiller, and R. G. Pearson. 2006. Climate warming and the decline of amphibians and reptiles in Europe. *Journal of Biogeography*, 33(10): 1712-1728.
- Arnold, S. J., and R. J. Wassersug. 1978. Differential predation on metamorphic anurans by garter snakes (*Thamnophis*): social behavior as a possible defense. *Ecology*, 59(5): 1014-1022.
- Baker, J. A., and R. J. Brooks. 1981. Distribution patterns of raptors in relation to density of meadow voles. *Condor*: 42-47.
- Blouin-Demers, G., and P. J. Weatherhead. 2001. Thermal ecology of black rat snake (*Elaphe obsoleta*) in a thermally challenging environment. *Ecology*, 82: 3025-3043.
- Blouin-Demers, G., and P. J. Weatherhead, P. J. 2002. Habitat-specific behavioural thermoregulation by black rat snakes (*Elaphe obsoleta obsoleta*). *Oikos*, 97: 59-68.
- Bronikowski, A. M. 2000. Experimental evidence for the adaptive evolution of growth rate in the garter snake *Thamnophis elegans*. *Evolution*, 54: 1760-1767.
- Carpenter, C. C. 1956. Body temperatures of three species of *Thamnophis*. *Ecology* 37: 732-735.
- Fleharty, E. D. 1967. Comparative ecology of *Thamnophis elegans*, *T. cyrtopsis*, and *T. rufipunctatus* in New Mexico. *The Southwestern Naturalist*: 207-229.
- Conant, R. 1963. Semiaquatic snakes of the

- genus *Thamnophis* from the isolated drainage system of the Río Nazas and adjacent areas in Mexico. *Copeia*, (3): 473-499.
- Condon, S. M. 2005. Geologic studies of the Platte River, South-Central Nebraska and adjacent areas—Geologic maps, subsurface study, and geologic history.
- Currier, P.J. 1982. The floodplain vegetation of the Platte River: phytosociology, forest development, and seedling establishment. Dissertations, Iowa State University.
- Endara, M. J., and P. D. Coley. 2011. The resource availability hypothesis revisited: A meta-analysis. *Functional Ecology*, 25(2): 389-398.
- Halstead, B. J., P. Valcarcel, G. D. Wylie, P. S. Coates, M. L. Casazza, and D. K. Rosenberg. 2016. Active season microhabitat and vegetation selection by Giant Gartersnakes associated with a restored marsh in California. *Journal of Fish and Wildlife Management*. 7(2): 1-11.
- Harner, M. J., and K. Geluso. 2011. Response of herpetofauna to grazing and fire in wet, tall-grass prairies along the Platte River. Nebraska State Wildlife Grant Report, Nebraska Game and Parks Commission, Lincoln, NE. 57 pp.
- Heckrotte, C. 1967. Relations of body temperature, size, and crawling speed of the common garter snake, *Thamnophis s. sirtalis*. *Copeia*, 1967(4): 759-763.
- Huey, R. 1991. Physiological Consequences of Habitat Selection. *The American Naturalist*, 137: S91-S115.
- Jayne, B., and A. Bennett. 1990. Selection on Locomotor Performance Capacity in a Natural Population of Garter Snakes. *Evolution*, 44(5): 1204-1229.
- Kaul, R., and S. Rolfmeier. 1993. Native Vegetation of Nebraska. UNL Conservation & Survey Division. <http://nebraskamaps.unl.edu> Accessed 30 Jan 2016.
- Kephart, D. G., and S. J. Arnold. 1982. Garter Snake Diets in a Fluctuating Environment: A Seven-Year Study. *Ecology*, 63: 1232–1236.
- Munk, Y. 2008. Kinematics of swimming garter snakes (*Thamnophis sirtalis*). *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*, 150(2): 131-135.
- Noss, R. F., E. T. LaRoe, and J. M. Scott. 1995. Endangered ecosystems of the United States: a preliminary assessment of loss and degradation. U.S. Department of the Interior, National Biological Service, Washington, DC, USA, vol. 28.
- Peterson, C. R. 1987. Daily variation in the body temperatures of free-ranging garter snakes. *Ecology*, 68(1): 160-169.
- Pomara, L. Y., O. E. LeDee, K. J. Martin, and B. Zuckerberg. 2014. Demographic consequences of climate change and land cover help explain a history of extirpations and range contraction in a declining snake species. *Global Change Biology*, 20: 2087–2099.
- Preston, C. 1990. Distribution of Raptor Foraging in Relation to Prey Biomass and Habitat Structure. *The Condor*, 92(1): 107-112.
- Rosen, P. 1991. Comparative Field Study of Thermal Preference in Garter Snakes (*Thamnophis*). *Journal of Herpetology*, 25(3): 301-312.
- Sergo, D., and R. Shrine. 2015. Snakes for lunch: bird predation on reptiles in a tropical floodplain. *Australian Zoologist*, 37(3): 311-320.
- Shine, R., and R. T. Mason. 2004. Patterns of mortality in a cold-climate population of garter snakes (*Thamnophis sirtalis parietalis*). *Biological Conservation*, 120(2): 201-210.
- Sievert, L. M., and V. H. Hutchison. 1989. Influences of season, time of day, light and sex on the thermoregulatory behavior of *Crotaphytus collaris*. *Journal of Thermal Biology*, 14(3): 159-165.
- Sparkman, A. M., A. M. Bronikowski, J. G. Billings, D. Von Borstel, and S. J. Arnold. 2013. Avian predation and the evolution of life histories in the garter snake *Thamnophis elegans*. *The American Midland Naturalist*, 170(1): 66-85.
- Strange, E. M., K. D. Fausch, and A. P. Covich. 1999. Sustaining ecosystem services in human-dominated watersheds: biohydrology and ecosystem processes in the South Platte River Basin. *Environmental Management*, 24(1), 39-54.
- Svejcar, T. J. 1990. Response of *Andropogon gerardii* to fire in the tallgrass prairie. *Fire in North American tallgrass prairies*, 19-27.
- Ward, J. V., and J. A. Stanford. 1995. Ecological connectivity in alluvial river ecosystems and its disruption by flow regulation. *Regulated Rivers: Research & Management*, 11(1): 105-119.
- Webb, J. K. and M. J. Whiting. 2005. Why don't small snakes bask? Juvenile broad-headed snakes trade thermal benefits for safety. *Oikos*, 110: 515–522.
- Zehr, D. 1962. Stages in the normal development of the common garter snake, *Thamnophis sirtalis sirtalis*. *Copeia*, 1962(2): 322-329.

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Common Gartersnake (*Thamnophis sirtalis*) Mortality due to Haying Practices in South-central Nebraska

Prairie management has led to the accidental mortality of snakes across the Great Plains. For example, prescribed burning has been shown to kill at least nine species in Oklahoma, Nebraska, and Missouri (Bigham et al. 1964, Erwin and Stasiak 1979, Geluso et al. 1986, Frese 2003, Fogell 2005). Mowing and haying practices to conserve grasslands by reducing the establishment of woody vegetation also can cause snake mortalities. In Ohio, mortality by mowers accounted up to 5% of total observations of Common Gartersnakes (*Thamnophis sirtalis*) and Plains Gartersnakes (*T. radix*) on a 20 ha grassland at the Killdeer Plains Wildlife Area (Dalrymple and Reichenbach 1981). Population densities of snakes and frequency of mowing/haying practices in grasslands likely relate to mortality rates in snakes.

On 18 June 2013, a dead adult *Thamnophis sirtalis* was found after it was killed by haying practices used to maintain a restored prairie on Crane Trust property (40.7055°N, 98.8018°W, WGS 84) in Hall County, Nebraska. This property is located in the flood plain of the Platte River. The pasture was bordered by a narrow band of trees to the north, largely dominated by eastern cottonwoods (*Populus deltoides*) and eastern redcedar (*Juniperus virginiana*). To the south, the area was bordered by the main channel of the Platte River. The Crane Trust uses the widely practiced mowing and baling to help maintain grassland habitats as well as provide a means of income by selling hay bales. The Common Gartersnake was noticed in a swath of drying vegetation and apparently died as a result of lacerations. It was unclear whether death was caused from mowing to cut the hay or swathing to cure the hay. To our knowledge, this observation represents the first published report of mortality via haying practices in Nebraska, albeit we predict such mortality occurs frequently across the state.

On nearby Crane Trust properties in Hall County, ten species of herpetofauna were documented in similar prairie habitats along the Platte River with *T. sirtalis* being the most commonly encountered snake species (Geluso and Harner 2013). There are no population density estimates for *T. sirtalis* in the region, but *T. sirtalis* density was an estimated 44/ha in northeastern Kansas

during a population high in 1961 (Fitch 1965). In 2010, Geluso and Harner (2013) documented the greatest number of garter snakes (*T. sirtalis* and *T. radix*) in June and September. Mowing during peak months of above-ground activities likely has the highest mortality rates on garter snakes. Human management practices may be shown to be detrimental to snake populations, especially for species of conservation need. Effects on snake populations from mowing may merit further examination as conservation strategies are developed for grassland species of interest in Nebraska, such as the Smooth Greensnake (*Opheodrys vernalis*) and Massasauga (*Sistrurus catenatus*). Globally, reptile populations are declining due to habitat loss and degradation, invasive species, pollution, disease, overuse, and climate change (Gibbons et al. 2000).

We thank the Crane Trust for granting us access to conduct research on their land.



Figure 1. Common Gartersnake (*Thamnophis sirtalis*) observed killed during haying practices in a restored prairie in Hall County, Nebraska.

LITERATURE CITED

- Bigham, S. R., J. L. Hepworth, and R. P. Martin. 1964. A casualty count of wildlife following a fire. *Proceedings of the Oklahoma Academy of Science* 45:47-50.
- Dalrymple, G. H., and N. G. Reichenbach. 1981. Interactions between the Prairie Garter Snake (*Thamnophis radix*) and the Common Garter Snake (*T. sirtalis*) in Killdeer Plains, Wyandot County, Ohio. *Ohio Biological Survey, Biology Notes* 15:244-250.
- Erwin, W. J., and R. H. Stasiak. 1979. Vertebrate mortality during the burning of a reestablished prairie in Nebraska. *The American Midland Naturalist* 101:247-249.
- Fitch, H. S. 1965. An ecological study of the garter snake, *Thamnophis sirtalis*. University of Kansas Publications Museum of Natural History 15:493-564.
- Fogell, D. D. 2005. Habitat needs and population viability of the Massasauga (*Sistrurus catenatus*) in eastern Nebraska. Final Report to the Nebraska Game and Parks Commission, Lincoln, NE. 42 pp.
- Frese, P. W. 2003. Tallgrass prairie amphibian and reptile assemblage. Fire mortality. *Herpetological Review* 34:159-160.
- Geluso, K. N., G. D. Schroder, and T. B. Bragg. 1986. Fire-avoidance behavior of meadow voles (*Microtus pennsylvanicus*). *The American Midland Naturalist* 116:202-205.
- Geluso, K., and M. J. Harner. 2013. Reexamination of herpetofauna on Mormon Island, Hall County, Nebraska, with notes on natural history. *Transactions of the Nebraska Academy of Sciences* 33:7-20.
- Gibbons, J. W., D. E. Scott, T. J. Ryan, K. A. Buhlmann, T. D. Tuberville, B. S. Metts, J. L. Greene, T. Mills, Y. Leiden, S. Poppy, and C. T. Winne. 2000. The global decline of reptiles, déjà vu amphibians. *BioScience* 50:653-666.
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GEOGRAPHIC DISTRIBUTION

LAMPROPELTIS GENTILIS (Western Milk-snake). USA: KANSAS: Norton Co.: East of Alma along Kyle Railroad tracks (39.88654°N, 99.67262°W) 12 September 2016. Michael Taylor and Curtis J. Schmidt. FHSM 17456. Verified by Travis W. Taggart. County record (Collins, Collins, and Taggart. 2010. *Amphibians, Reptiles, and Turtles in Kansas*. Eagle Mountain Publishing. 312 pp.; Taggart, Travis W. and Curtis J. Schmidt. 2017. *Kansas Herpetofaunal Atlas: An On-line Reference*. Electronic Database accessible at <http://webcat.fhsu.edu/ksfauna/herps>).

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OPHEODRYS AESTIVUS (Rough Green-snake). USA: KANSAS: Elk Co.: Youngmeyer Ranch (37.532556°N, 96.471572°W). 17 July 2016. Dexter R. Mardis. FHSM 17457. Verified by Curtis J. Schmidt. County record (Collins, Collins, and Taggart. 2010. *Amphibians, Reptiles, and Turtles in Kansas*. Eagle Mountain Publishing. 312 pp.; Taggart, Travis W. and Curtis J. Schmidt. 2017. *Kansas Herpetofaunal Atlas: An On-line Reference*. Electronic Database accessible at <http://webcat.fhsu.edu/ksfauna/herps>).

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PANTHEROPHIS OBSOLETUS (Western Ratsnake). USA: KANSAS: Mitchell Co.: City of Beloit, Chautauqua Park (39.27151°N, 98.06519°W). 30 June 2016. Jared Engelbert and Curtis J. Schmidt. FHSM 17254. Verified by Travis W. Taggart. County record (Collins, Collins, and Taggart. 2010. *Amphibians, Reptiles, and Turtles in Kansas*. Eagle Mountain Publishing. 312 pp.; Taggart, Travis W. and Curtis J. Schmidt. 2017. *Kansas Herpetofaunal Atlas: An On-line Reference*. Electronic Database accessible at <http://webcat.fhsu.edu/ksfauna/herps>).

JARED ENGELBERT, Fort Hays State University, Hays, KS, 67601.

STORERIA DEKAYI (Dekay's Brownsnake). USA: KANSAS: Rice Co. (38.216660°N, 98.005963°W). 7 July 2016. Dexter R. Mardis and Nathaniel A. Nelson. FHSM 17458. Verified by Curtis J. Schmidt. County record (Collins, Collins, and Taggart. 2010. *Amphibians, Reptiles, and Turtles in Kansas*. Eagle Mountain

Publishing. 312 pp.; Taggart, Travis W. and Curtis J. Schmidt. 2017. Kansas Herpetofaunal Atlas: An On-line Reference. Electronic Database accessible at <http://webcat.fhsu.edu/ksfauna/herps/>.

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TRACHEMYS SCRIPTA (Pond Slider). USA: PENNSYLVANIA: Columbia Co.: Bloomsburg, Fishing Creek, 150 m NE US Route 11 (40.999418°N, 76.467892°W). 13 June 2016. S. Hartzell. Florida Museum of Natural History (UF 178411, photo voucher). Luzerne Co.: Susquehanna Riverlands, Towpath Trail, 0.15 km E US Route 11 (41.090108°N, 76.134053°W). 2 June 2016. S. Hartzell. UF 178410 (photo voucher). Montour Co.: Montour Preserve, Lake Chillisquaque (41.107683°N, 76.653477°W). 6 May 2016. S. Hartzell. UF 178290 (photo vouchers). All verified by Kenneth L. Krysko and all coordinates presented in WGS 84 datum. Few records have been published regarding introduced *T. scripta* within Pennsylvania (Russell et al. 2014. *Collinsorum* 3[2-4]:19). Records reported herein for Luzerne and Montour counties represent new county records according to literature review and examination of records on the Pennsylvania Amphibian and Reptile Survey (PARS) website (www.paherpsurvey.org, accessed 7 July 2016). One prior record from 2010 appeared on PARS for Columbia Co. Thus, this current record confirms the presence of this species within Columbia Co. and represents the first published record for this species within the county. At present, it remains unknown whether breeding populations exist at these localities; however, establishment of multiple individuals in these areas may facilitate breeding populations, as has occurred elsewhere in Pennsylvania (e.g., Maiese and Stone 2014. *Herpetol. Rev.* 45:281).

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LITHOBATES SYLVATICUS (Wood Frog). USA: MISSISSIPPI: Forrest Co.: A single specimen found southwest of Hattiesburg in Timberton (31.270391°N, 89.327675°W; WGS 84). 23 July 2015. Gary, Kat, and Ron Lukens. Verified by Kenneth Krysko, Florida Museum

of Natural History (UF-Herpetology 176455). This species has never been recorded from the state of Mississippi before (Dodd 2013. *Frogs of the United States and Canada – Volume 2*. John Hopkins University Press, Baltimore, Maryland. 982 pp.). According to Dodd (2013), the closest population is located in east central Alabama, approximately 400 km to the north-east, as documented by Davis and Folkerts (1986. *Brimleyana* 12:29-50).

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Figure 1. An adult Wood Frog (*Lithobates sylvaticus*) from Forrest County, Mississippi (UF-Herpetology 176455).

About the Kansas Herpetological Society

The KHS is a non-profit organization established in 1974 and designed to encourage education and dissemination of scientific information through the facilities of the Society; to encourage conservation of wildlife in general and of the herpetofauna of Kansas in particular; and to achieve closer cooperation and understanding between herpetologists, so that they may work together in common cause. All interested persons are invited to become members of the Society. Membership dues per calendar year are \$15.00 (U.S., Regular), \$20.00 (outside North America, Regular), and \$20.00 (Contributing) payable to the KHS. Send all dues to: KHS Secretary, (address inside the front cover)

KHS Meetings

The KHS holds an annual meeting in the fall of each year. The meeting is, minimally, a two day event with lectures and presentations by herpetologists. All interested individuals are invited to make presentations. The annual meeting is also the time of the Saturday night social and fund-raising auction.

Field Trips

The KHS hosts three field trips each year, one each in the spring, summer, and fall. Field trips are an enjoyable educational experience for everyone, and also serve to broaden our collective understanding of the distribution and abundance of the amphibians, reptiles, and turtles in Kansas. All interested persons are invited to attend.

Editorial Policy

Collinsorum, currently issued quarterly (March, June, September, and December), publishes all society business.

Submission of Manuscripts

As space allows, *Collinsorum* publishes all manner of news, notes, and articles. Priority of publishing is given to submissions of Kansas herpetological subjects and by KHS members; however all submissions are welcome. The ultimate decision concerning the publication of a manuscript is at the discretion of the Editor. Manuscripts should be submitted to the Editor in an electronic format whenever possible. Those manuscripts submitted in hard copy may be delayed in date of publication. Manuscripts should be submitted to the Editor no later than the 1st of the month prior to the month of issuance. All manuscripts become the sole possession of the Society, and will not be returned unless arrangements are made with the Editor.

Reprints & Artwork

Collinsorum publishes original peer-reviewed submissions under the Articles and Notes sections. Upon review, acceptance, and publication, Portable Document File (PDF) copies are provided gratis to the author on request. Figures and photographs submitted with manuscripts are welcome, but must be sized appropriately by authors for this journal's column sizes (i.e., 19.5 or 39 picas wide). Particular attention should be paid to reduction of text on the figures.

Societal Awards, Grants, and Recognitions

Distinguished Life Members

Individuals selected as Distinguished Life Members are chosen by the KHS Executive Council based on their distinguished published research papers on Kansas herpetology.

Bronze Salamander Award

Established in 1987, this Award is presented to those individuals whose efforts and dedication to the Kansas Herpetological Society go far beyond the normal bounds. The recipients of this Award have given exemplary service to the KHS, and are presented with an elegant bronze sculpture of a Barred Tiger Salamander.

The Howard K. Gloyd - Edward H. Taylor Scholarship

Established in 1993, The Gloyd-Taylor Scholarship is presented annually by the Kansas Herpetological Society to an outstanding herpetology student. The scholarship is a minimum of \$300.00 and is awarded on the basis of potential for contributing to the science of herpetology. Students from grade school through university are eligible.

The Alan H. Kamb Grant for Research on Kansas Snakes

KHS members only are eligible to apply for The Alan H. Kamb Grant for Research on Kansas Snakes, which was established in 2001. The recipient of the grant will be selected by the KHS Awards Committee. A minimum award of \$300 is given annually.

The Henry S. Fitch - Dwight R. Platt Award for Excellence in Field Herpetology

KHS members only are eligible to apply for The Henry S. Fitch - Dwight R. Platt Award for Excellence in Field Herpetology, which was established in 2010. The recipient of the grant will be selected by the KHS Awards Committee. The award will be given annually when sufficient funds have been raised to establish a trust.

The George Toland Award for Ecological Research on North American Herpetofauna

This CNAH Award was established in 2008 in recognition of the scientific career of George Fredrick Toland, whose life-long interest in herpetology was passed on to so many of his students. The recipient of this award will be selected by the KHS Awards Committee. A minimum award of \$200 is given annually at the end of the KHS meeting.

The Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology

This CNAH Award was established by Westar Energy in 1998 in recognition of the achievements of Suzanne L. Collins and Joseph T. Collins. In even years, the Award is bestowed upon an individual who, in the preceding two calendar years, had published a paper of academic excellence on native species of Kansas amphibians, reptiles, and/or turtles, and in odd years, the Award is given to an individual who, in a juried competition, took the best photograph of a Kansas amphibian, reptile, or turtle. The Collins Award is minimally \$1,000.00, and is neither a grant nor a scholarship. No nominations or applications can be made for it.

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