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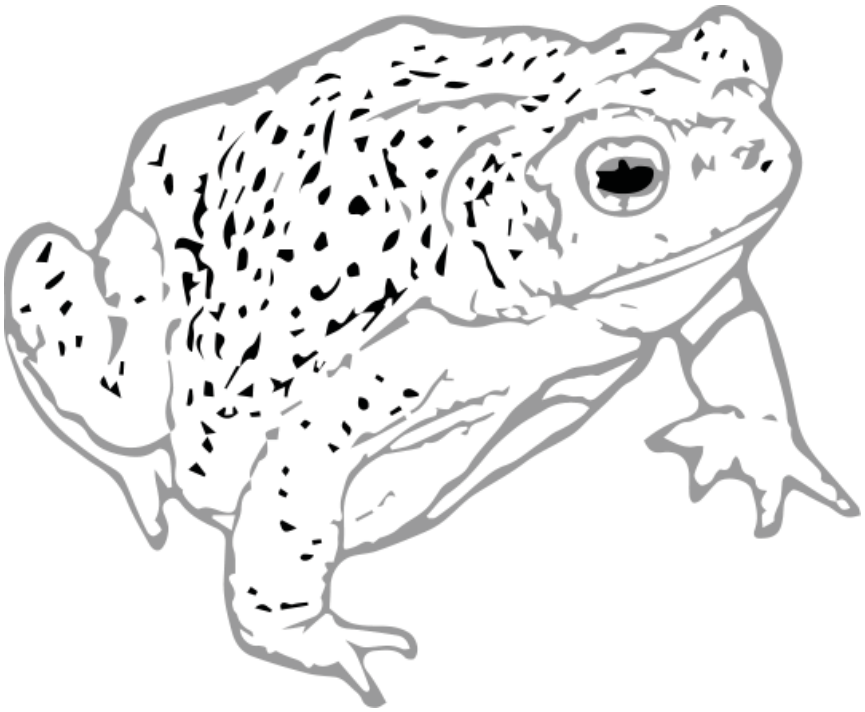

Kansas Herpetological Society

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Front Cover: Red-spotted Toad (*Anaxyrus punctatus*) by Travis W. Taggart.

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KHS BUSINESS

THE KANSAS HERPETOLOGICAL SOCIETY 40th ANNUAL MEETING

During November 1st-3rd 2013, the 40th Annual Meeting of the Kansas Herpetological Society (KHS) was held at the Great Plains Nature Center in Wichita, Kansas. KHS members and meeting attendees heard a variety of oral presentations about amphibians, reptiles and turtles from herpetologists and students representing Kansas and a number of other states across the country.

Unofficial activities began Friday evening, November 1st, as meeting attendees met at a variety of local establishments for nourishment, banter, and the occasional libation. The meeting officially began Saturday November 2nd at the Great Plains Nature Center with an official welcome and some opening remarks from KHS President **Daniel G. Murrow** followed by a welcome from Great Plains Nature Center Director **Lorrie Beck**. After a tad bit of audiovisual technical difficulty, KHS Member **John Lokke** introduced the first presentation of the day: *Plains People: Joe Collins – A Video Tribute to Joseph T. Collins, KHS Founder*. This video was originally filmed as part of the Sunflower Journeys series in 2011 during a KHS field trip. As it played, meeting attendees were given another opportunity to remember Joe and to once again realize his influence on both the KHS and Kansas herpetology in general. As if to continue the mood of reminiscence now present in the room, **Kelley Tuel** and co-presenters Josh Tuel, Suzanne L. Collins, Larry L. Miller, and Eric Kessler provided meeting goers with *An Historical Tour of KHS Field Trips*. As one might expect, this was a very entertaining trip down memory lane for the more seasoned KHS members and was also a great way for the younger members to observe the changes in hair dos, eyeglass styles, and field-wear fashions over the past 30-40 years. The first paper session of the day finished with a presentation by Center for North American Herpetology (CNAH) Director **Travis Taggart**. Travis' talk – *Kansas Herpetology: A Rich History and Promising Future* – was filled with information about the herpetologists as well as the milestones that made Kansas one of the most herpetologically understood states in the US. And as an endnote, Travis reminded us all that Kansas is still moving forward herpetologically with contributions from numerous institutions and herpetologists continually adding to the knowledge of Kansas amphibians, reptiles, and turtles in the state.

Other presentations during the Saturday morning session included: **Ashlee VanderHam** – *Using Amphibian Monitoring to Create Wetland Restoration Guidelines;* **Daniel F. Hughes** – *Differential Use of Ponds by Two Species of Turtles and its Role in Colonization;* and wrapping up the morning presentations was the 2013 Keynote Speaker **Dr. Darrel D. Frost** with his presentation *Why scientific names change: Science and the shock of the new*. Darrel is a herpetologist at the American Museum of Natural History in New York City, New York and his enlightening presentation gave attendees some insight into the wild world of constantly changing herpetological nomenclature. Throughout the day Saturday photographs for this year's *Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology* were on display in the Great Plains Nature Center for judges and meeting goers to view. Additionally, bookseller **Eric Thiss** of **Zoo Book Sales** presented an impressive variety of herpetological volumes for sale to KHS meeting attendees. Additionally, t-shirts commemorating the 40th Annual KHS Meeting depicting a Coachwhip (*Masticophis flagellum*) in the shape of the number 40 were available at the registration desk. The design was constructed by KHS member and artist John Lokke.

After breaking for lunch and the annual KHS Group Photograph (taken by Larry Miller of Kansas Heritage Photography) the following presentations were given during the afternoon scientific paper session: **Dr. Walter E. Meshaka, Jr. –** *Geographic variation in selected life history traits in the eastern narrowmouth toad,* Gastrophryne carolinensis *along the northeastern edge of its geographic range;* **Bill Welch** – *Four Years of Turtle Trapping on the Little Arkansas River;* **Lt. Col. Chris McMartin** – *Citizen Science on Military Installations – Fort Leavenworth, Kansas;* **Derek Norrick** – *Toxic Effects of a Combined Exposure to Nitrate and the Fungus,* Batrachochytrium dendrobatidis *on the African Clawed Frog,* Xenopus laevis; and **Stephanie N. Kelley** – *Conservation successes of the Sedgwick County Zoo's Amphibian and Reptile Department*.

Following the Saturday paper presentations was a novel activity designed by KHS member **Dexter Mardis** during which meeting attendees had the opportunity to test their identification skills for both herpetofauna AND herpetologists. A running slide show embedded with photos of various native Kansan amphibians, reptiles, and turtles mixed in with photos of notable places and some famous (and some not so famous) Kansas herpetologists invited viewers to fill out an "answer sheet" with their best guesses of which species, locations, or herpers were being displayed. Prizes were awarded to those who had the best scores, but the most interesting results appeared to be the inability of some prominent herpetologists to differentiate between a Western Massasauga (*Sistrurus tergeminus*) and a Prairie Rattlesnake (*Crotalus viridis*) when presented in a slightly out-of-focus,

small, dark, and otherwise less-than-optimal photograph. I have much confidence, however, that these seasoned field herpers would not mistake the identity of the snake if they were to happen upon it in the wild.

Wrapping up meeting activities for the day was the annual KHS business meeting directed by President Daniel Murrow. During the business meeting elections for officers were held. Walter Meshaka of the State Museum of Pennsylvania in Harrisburg, Pennsylvania was elected as the President-Elect for 2015. David Oldham (Pittsburg State University) was re-elected Treasurer, Eva Horne (Kansas State University) will be continuing her post as Secretary, and Daniel Fogell (Southeast Community College, Lincoln, Nebraska) will take over as President on 1 January 2014. Dan Murrow (Hutchinson, Kansas) will continue to be a part of the KHS Executive Council as the immediate Past-President. Additionally, the business meeting included the annual KHS Awards Ceremony during which a number of grants and awards were presented to worthy recipients. The first award, the *Henry S. Fitch-Dwight R. Platt Award for Excellence in Field Herpetology*, was presented to George R. Pisani of the Kansas Biological Survey. George also received a $200.00 Honorarium for receiving the award. The 2013 recipient of the *Howard K. Gloyd-Edward Harrison Taylor Scholarship* of $300.00 was Anthony E. Bridger, a graduate student at the University of Nebraska-Kearney. The *Alan H. Kamb Grant for Research on Kansas Snakes* was presented along with a $300.00 stipend to Dexter Mardis of Wichita State University. The final award of the day…the *Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology*…was awarded to Curtis Schmidt of the Sternberg Museum of Natural History in Hays, Kansas. Curtis' winning photograph was of his daughter watching an inquisitive Timber Rattlesnake (*Crotalus horridus*) in one of the displays at the Sternberg Museum's living rattlesnake exhibit. Once the business meeting had adjourned, members were free to pursue nourishment at the establishments of their choice.

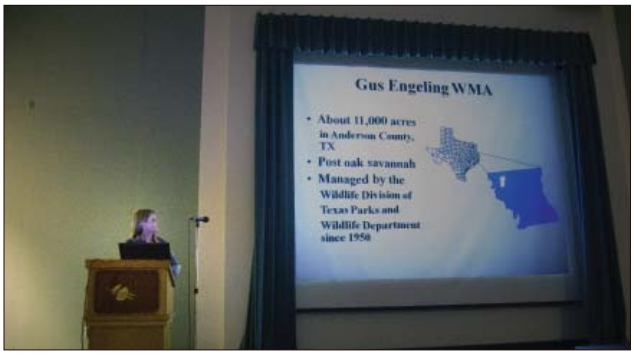
Saturday evening's activities were conducted at the Education Center Auditorium in the Sedgwick County Zoo and included the infamous KHS auction. Once again, the auction was conducted by the terrible threesome of auctioneers: Dan Fogell, Eric Thiss, and Walt Meshaka – who showed up this year donning a ponytail. One of the highlights of the evening was Walt's offer to allow bidding for the privilege of cutting off his ponytail. After nearly an entire minute of an intense bidding war, Josh Mead – a student from the University of Nebraska-Lincoln – won the bid for $25.00 and proceeded to hack off the keratinized extension with a pair of kindergarten scissors. The next item up for bid was the wad of hair itself…which Walt auctioneered. Dan Fogell – the ONLY bidder – bid $5.00 for the tail, however auctioneer Walt Meshaka must have been hard of hearing because he quickly announced the wad SOLD for $20.00…which Fogell unenthusiastically paid. One of the more exciting items up for bid was a personalized tour of the herpetofaunal collection at the Sedgwick County Zoo, led by Keeper Nate Nelson who should be commended for his volunteer work which kept him hours after the meeting activities were over. Once again, throughout the auction KHS member John Lokke produced water colors which were instantly auctioned off – even before the paint dried. All auction items were eventually sold, and all of the orange juice was consumed. At the end of the night a total of $2806.00 was brought in for the KHS.

The second day of paper sessions began Sunday morning and was dominated by student presentations. The following presentations were given during the two Sunday morning sessions: **Joshua J. Mead** – *Stomach Contents of an Invasive Population of* Lithobates catesbianus *in Nebraska;* **Eva Gann** - *Variation in Growth as a Function of Prey Diet in* Lampropeltis getula californiae *and* Pantherophis guttatus *(Colubridae);* **Douglas Eifler** – *Teamwork in Teiids: Social Foraging in* Ameiva corax*;* **Emma Pauly-Hubbard** – *Prairie Ringneck Snake Microhabitat Selection;* **Madison Noel** – *The Effects of Different Tissue Preservation Methods on the Quality of DNA Extractions from Herpetofaunal Specimens;* **Kasandra Brown** – *A Comparison of 2012 and 2013 Herpetofaunal Populations in South-Central Kansas;* **Jarret Z. Kachel –** *Snake community responses to woody shrub density in a fire-suppressed High Plains grassland;* **Ashley Tubbs** – *The Effects of Fire on Herpetofauna at a site in Eastern Texas;* **Dr. Walter E. Meshaka, Jr. –** *Breeding and larval growth of the marbled salamander,* Ambystoma opacum*, from two adjacent sites in south-central Pennsylvania; and* **Timothy C. Eberl** – *First report of* Batrochochytrium dendrobatidis *associated with amphibians in Kansas.*

Before the closing of the meeting, the final award of the weekend – the *George Toland Award* – was presented for the best student presentation. The 2013 Toland Award recipient was Josh Mead from the University of Nebraska-Lincoln for his presentation *Stomach Contents of an Invasive Population of* Lithobates catesbianus *in Nebraska*. For his outstanding presentation Josh was awarded a stipend of $200.00. The 40th Annual Meeting of the Kansas Herpetological Society came to a close Sunday afternoon and all members and attendees were wished a safe trip home. KHS President Dan Murrow as well as Dexter Mardis are to be commended for their efforts in making this a successful meeting. We hope to see you all in Manhattan as President Dan Fogell presents the 41st Annual Meeting of the Kansas Herpetological Society November 7th-9th, 2014.

Dan Fogell
Southeast Community College
Lincoln, Nebraska

Group photograph of the attendees of the 40th Annual KHS Meeting assembled outside the Great Plains Nature Center.



Ashley Tubbs delivers a talk on the effects of fire on the east Texas herpetofauna.

Dan Fogell presents Curtis Schmidt with the 2013 Collins Award.

Interested attendees took part in a quiz of Kansas herps and herpers Saturday afternoon.

Mr. and Mrs. Eddie Stegall enjoy the finest assortment of doughnuts ever offered at a KHS meeting.

All photographs courtesy Larry L. Miller, Kansas Heritage Photography

Dan Fogell and George Pisani getting reacquainted.

Josh Mead accepting the award for best student presentation from Dan Murrow.

Grace Ann Johnson, Walt Meshaka, and Hadley Tuel auction off artwork by Eva Horne.

Ashlee VanderHam takes the tap from Dan Johnson during the KHS auction Saturday evening.

UCMO students work together as Eva Gann places the winning bid for a SCZ herpetarium tour.

All photographs courtesy Larry L. Miller, Kansas Heritage Photography

KHS 2014 Field Trips
to be held at

Summer
Cimarron National Grassland
25-27 July 2014

Fall
Woodson County State Fishing Lake and Wildlife Area
26-28 September 2014

The
KHS 41st Annual Meeting
will be held at

Kansas State University, Manhattan, Kansas

7-9 November 2014

NOTES

Eighteen County Records of Herpetofauna from Nebraska, 2012-2013

Ballinger et al. (2010) and Fogell (2010) recently updated the distributions of all amphibians and reptiles known to occur in Nebraska. Since then, however, additional county records have been published in the state for a number of species (e.g., Geluso 2012, Hubbs 2013, Davis et al. 2014). Herein, we report on 18 additional county records from Nebraska obtained 2012-2013 that continue to update distributions of herpetofauna in the state. Sixteen records represent the first documentation of species from counties, whereas two represent the first voucher specimens because only photographic vouchers previously were published from those counties. We deposited our voucher specimens, including some with preserved tissues, in the herpetological collections at the Sternberg Museum of Natural History (FHSM), Fort Hays State University, Hays, Kansas. Specimens were verified by Curtis J. Schmidt. Coordinates of localities were taken with either a hand-held GPS unit using map datum NAD1983 or WGS84, or coordinates were obtained from Google Earth (WGS84). Voucher specimens were collected under authorization of the Nebraska Game and Parks Commission (Scientific and Education Permit No. 1031) issued to Keith Geluso. Common and scientific names as well as order of accounts below follow Fogell (2010).

Anura - Frogs

LITHOBATES CATESBEIANUS (Bullfrog). USA: NEBRASKA: Harlan Co.: 5.6 km S, 0.2 km E Republican City (40.04902˚N, 99.21797˚W; NAD1983). 9 May 2012. Anthony E. Bridger. FHSM 16556. First county record. Individual adds additional information to the known range of Bullfrogs in south-central Nebraska. Bullfrogs previously have been reported from nearby Adams, Kearney, Red Willow, and Webster counties (Ballinger et al. 2010, Fogell 2010). A photographic voucher recently was published from adjacent Franklin County to the east of Harlan County (Hubbs 2013a). We observed other individuals in the small wetland area that adjoined and was located on the south side Harlan County Reservoir. Understanding the distribution and habitats used by Bullfrogs across the state is important because the species has been associated with the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) in Nebraska (Harner et al. 2011, Harner et al. 2013, Lingenfelter et al. In press).

SPEA BOMBIFRONS (Plains Spadefoot). USA: NEBRASKA: Valley Co.: 5.8 km S, 0.9 km E Ord (41.55296˚N, 98.917329˚W; WGS84). 8 June 2012. Greg D. Wright. FHSM 16532. First county record. Record fills in distributional gap in central Nebraska where the species was previously documented in adjacent Custer, Garfield, Greeley, Howard, Loup, Sherman, and Wheeler counties (Ballinger et al. 2010, Fogell 2010). Individual was discovered along roadside in an area with rolling grasslands.

Chelonia - Turtles

CHELYDRA SERPENTINA (Common Snapping Turtle). USA: NEBRASKA: Kearney Co.: 4.8 km W Newark (40.64098˚N, 99.0204˚W; WGS84). 25 September 2013. R. Aric Buerer. FHSM 16540. First county record. Record fills in distributional gap in south-central Nebraska (Ballinger et al. 2010, Fogell 2010). Individual was found dead on roadway located in the flood plain of the Platte River. The closest active river channel was 1.8 km to the north, although a few small lakes were located closer, with the closest being about 1.4 km to the north. Habitat adjacent to area along the roadway was dominated by agricultural fields with center-pivot irrigation. Common SnappingTurtles are known from adjacent Adams, Buffalo, and Hall counties (Ballinger et al. 2010, Fogell 2010). Upon preparation as a skeleton at FHSM, a large catfish spine was observed stuck in the roof of its mouth, and the spine appeared to have been there a while (C. Schmidt, in litt.).

CHRYSEMYS PICTA (Northern Painted Turtle). USA: NEBRASKA: Hamilton Co.: 0.7 km N, 5.3 km W Marquette, Griffith Prairie and Farm (41.01359˚N, 98.07204˚W; WGS84) and 0.6 km N, 3.1 km W Aurora P.O. (40.87230˚N, 98.0401˚W; WGS84). 17 May 2013 and 26 May 2013, respectively. Anthony E. Bridger. FHSM 16565 and 16566, respectively. First county record via voucher specimen. Hubbs (2013b) documented the Northern Painted Turtle from Hamilton County with a photographic record in 2012. Our specimens fill in distributional gap in south-central Nebraska (Ballinger et al. 2010, Fogell 2010). Nothern Painted Turtles are known from adjacent Clay, Fillmore, Hall, Merrick, and Polk counties (Ballinger et al. 2010, Fogell 2010, Geluso 2011, Geluso and Harner 2013, Hubbs 2013b). The individual captured on 17 May was from a small human-made pond (41 m by 21 m) situated in rolling grasslands above the flood plain of the Platte River. The individual salvaged from a roadway on 26 May was in an area dominated by agricultural fields.

USA: NEBRASKA: Garfield Co.: 0.7 km N Burwell P.O., Riverside Park (41.7879˚N, 99.1333˚W; WGS84). 5 October 2013. Maureen Bird. FHSM 16551. First county record via voucher specimen. Hubbs (2013b) documented the Northern Painted Turtle from Garfield County with a photographic record in 2012. The spe-

cies is known from surrounding Custer, Greeley, Holt, Loup, Rock, Wheeler, and Valley counties (Ballinger et al. 2010, Fogell 2010, Hubbs 2013b). The turtle was discovered dead on roadway west of tennis courts about 300 m from a small pond. We have commonly observed Northern Painted Turtles basking in the Burwell-Sumter Diversion Reservoir.

TERREPENE ORNATA (Ornate Box Turtle). USA: NEBRASKA: Dawes Co.: 3.6 km S, 9.3 km E Chadron (42.7961°N, 102.88758°W; WGS84). 24 July 2012. Nick Dobesh. FHSM 16539. First county record. Record fills in distributional gap in the Pine Ridge area of northwestern Nebraska, where the species is known from adjacent Box Butte, Garden, Morrill, Scotts Bluff, and Sheridan counties (Ballinger et al. 2010, Fogell 2010, Bridger 2011). Individual was found dead on Bordeaux Creek State Wildlife Management Area.

USA: NEBRASKA: Garfield Co.: 29.2 km N, 6.9 km E Burwell (42.04413˚N, 99.05029˚W; NAD1983). 23 May 2012. Anthony E. Bridger. FHSM 16561. First county record. This species has been shown to reside in all surrounding counties (Ballinger et al. 2010, Fogell 2010). Individual was discovered on a roadway between two pastures consisting of mixed-grass prairies.

USA: NEBRASKA: Phelps Co.: 20.2 km N, 0.4 km W Funk (40.6409˚N, 99.2563˚W; WGS84) October 2012 (no specific date). Keith Geluso. FHSM 16536. First county record. The Ornate Box Turtle is known to occur in the surrounding counties of Buffalo, Dawson, Franklin, Furnas, Harlan, and Kearney (Ballinger et al. 2010, Fogell 2010). Individual was found dead on roadway in a highly agricultural area with center pivots in the flood plain of the Platte River.

TRACHEMYS SCRIPTA (Slider). USA: NEBRASKA: Hall Co.: Grand Island, W. Stolley Park Road, E of St. Joe Trail (40.90243°N, 98.36812°W; WGS84). 24 July 2012. Anthony E. Bridger. FHSM 16567. First county record. This individual represents an introduced population of Sliders, as the only native population is known from extreme southeastern Nebraska in habitats along the Missouri River (Fogell 2010). Our record represents the third county with documented reports of Sliders in Nebraska (Ballinger et al. 2010, Fogell 2010). This individual was found dead on a street within Grand Island in a populated part of town. A breeding population also was observed at L. E. Ray Lake in Grand Island by AEB (40.88900°N, 98.35750°W; WGS84). The nearest record of Sliders to Hall County is adjacent Buffalo County, which lies directly to the west.

Squamata – Lizards

ASPIDOSCELIS SEXLINEATA (Six-lined Racerunner). USA: NEBRASKA: Adams Co.: 0.1 km N, 3.8 km W Holstein (40.4664˚N, 98.6970˚W; NAD1983). 20 May 2012. Keith Geluso. FHSM 16526. First county record. Six-lined Racerunners are known from the adjacent counties of Buffalo, Franklin, Hall, Kearney, Nuckolls, and Webster (Ballinger et al. 2010, Fogell 2010). The individual was captured along unmaintained county road surrounded by grazed grasslands. The substrate in the area was comprised of sand. Many individuals were seen along the road and nearby roadsides the last few years.

USA: NEBRASKA: Phelps Co.: 6 km S, 0.1 km W Elm Creek (40.66428˚N, 99.37649˚W; NAD1983) and 18.4 km N, 4.4 km E Funk (40.62881˚N, 99.1983˚W; NAD1983). 24 and 28 May 2012, respectively. Keith Geluso. FHSM 16527-16529 and 16530, respectively. First county records. Six-lined Racerunners are known from adjacent Buffalo, Dawson, Franklin, Furnas, Harlan, and Kearney counties. (Ballinger et al. 2010, Fogell 2010). Individuals captured on 24 May inhabited sandy hills created when removing sand from pits along the south channel of the Platte River; the area is now part of the Sandy Channel State Recreation Area. The individual from 28 May was captured in a sandy grassland on a corner of agricultural lands irrigated by a center pivot.

Squamata – Snakes

PITUOPHIS CATENIFER (Bullsnake). USA: NEBRASKA: Garfield Co: 21.6 km N, 19.7 km E Burwell (41.97816˚N, 98.88412˚W; NAD1983). 23 May 2012. Anthony E. Bridger. FHSM 16560. First county record. Record in Garfield County fills in distributional gap in region with all surrounding counties now with documentation of occurrences (Ballinger et al. 2010, Fogell 2010, this study). The individual was discovered in the Cedar River valley in a mixed-grass prairie at the eastern end of the Sandhill Region of the state. A homestead was nearby with dense trees, although the surrounding areas were nearly treeless.

USA: NEBRASKA: Hall Co.: 5.1 km N, 0.6 km W Cairo (41.04658˚N, 98.61379˚W; NAD1983). 25 May 2013. Anthony E. Bridger. FHSM 16568. First county record. Record fills in distributional gap in south-central Nebraska (Ballinger et al. 2010, Fogell 2010). The species is known from adjacent Adams, Buffalo, Howard, Kearney, Merrick, and Sherman counties (Ballinger et al. 2010, Fogell 2010). Individual was discovered dead along Nebraska Highway 11 in an area with grazed grasslands and agricultural fields dominated by center-pivot irrigation near the junction of the South Loup and Middle Loup rivers.

USA: NEBRASKA: Valley Co.: 0.2 km S, 1.3 km W Ord P.O. (41.60327˚N, 98.94358˚W; WGS84). 8 June 2012. Greg D. Wright. FHSM 16533. First county record. Record fills in distributional gap in

central Nebraska where it is known from all adjacent counties (Ballinger et al. 2010, Fogell 2010, this study). Individual was discovered dead on the edge of Nebraska Highway 70/11 near the city of Ord. The surrounding habitat consisted of mainly rolling grasslands of Sandhills to the west and the city of Ord to the east. A few agricultural fields were in the general area mainly north of town.

*NERODIA SIPEDON (*Northern Water Snake). USA: NEBRASKA: Harlan Co.: 3.2 km S, 1.0 km E Republican City (40.07061˚N, 99.20896˚W; NAD1983). 10 May 2012. Anthony E. Bridger. FHSM 16557. First county record. Record helps to fill in distributional gap along Republican River in southern Nebraska. Northern Water Snakes are known from adjacent Furnas and Kearney counties in south-central parts of the state (Ballinger et al. 2010, Fogell 2010). The individual was observed foraging among submerged vegetation in the Republican River immediately downstream of Harlan County Reservoir.

THAMNOPHIS SIRTALIS (Common Garter Snake). USA: NEBRASKA: Box Butte Co.: 11.5 km N, 19.3 km W Hemingford (42.42738˚N, 103.30855˚W; NAD1983). 25 April 2012. Keith Geluso. FHSM 16525. First county record. Box Butte County was the last remaining county in northwestern Nebraska without a record of this species, and hence, the species was known from all surrounding counties (Ballinger et al. 2010, Fogell 2010). Individual was captured along banks of Niobrara River in herbaceous plant cover.

USA: NEBRASKA: Clay Co.: 1.0 km N, 0.55 km W Saronville (40.61156˚N, 97.94487˚W; NAD1983). 16 October 2012. Greg D. Wright and Keith Geluso. FHSM 16534. First county record. Record fills in distributional gap in southeastern Nebraska (Ballinger et al. 2010, Fogell 2010). Species is known from all adjacent counties (Ballinger et al. 2010, Fogell 2010) including Fillmore County that lies to the east of Clay County (this study, see next account). Individual found killed on roadway in highly agricultural area.

USA: NEBRASKA: Fillmore Co.: 2.3 km N, 4.6 km E Sutton (40.62561˚N, 97.80490˚W; NAD1983). 16 October 2012. Greg D. Wright and Keith Geluso. FHSM 16531. First county record. Specimen fills in distributional gap in southeastern Nebraska where it is now known from all surrounding counties (Ballinger et al. 2010, Fogell 2010, this study). Snake discovered dead on roadway in amongst agricultural fields.

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Anthony E. Bridger[1], Jennifer D. Frisch [1], Greg D. Wright[2], Brittney N. Adams[1], Brian D. Bird[1], Cooper D. Bollman[1], Daniel S. Brundrett[1], R. Aric Buerer[1], Staci D. Cahis[1], Michelle A. Connelly[1], Jacob D. Fritton[1], Edward J. Harms[1], Jacob D. Kaufman[1], Ashley M. Leitner[1], Andrew T. Poinsette[1], Maria P. Rojas [1], Dillon L. Schroeder[1], Marc A. Stokes[1], Chase T. Svoboda[1], August N. Wilson[1], and Keith Geluso[1]

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Late Season Chorusing by Blanchard's Cricket Frogs

Acris blanchardi (=*crepitans blanchardi*) has been reported active in Kansas as late as 14 November and between air temperatures of 42°-100°F (Burkett 1984, Clarke 1958, Collins *et al*., 2010). However, chorusing has only been reported during more restricted seasons (Clarke 1958). Though chorusing in the species typically is associated with breeding, and in Texas and Louisiana may occur during any month (Bayless 1969, Blair 1961), Collins *et al*. (2010) note that in Kansas "chorusing does not always indicate breeding activity." They do not mention observed calling dates outside the normal Kansas breeding season.

On Monday 4 November 2013 at 11AM CST, PAP heard a small (5-7 males) chorus of *Acris blanchardi* calling from a steel culvert beneath a rural driveway (Lat 38.796853, long -95.332731, elev 1070ft). Water accumulation in the culvert was <2cm. The site is approximately 50m from a pond used by the species. Air temperature at the site was 14.5°C (58°F). Humidity was 71%, dew point 49°F, barometer 29.91 and rising (Weather Underground http://www.wunderground.com/weatherstation/WXDailyHistory.asp?ID=KKSBALDW5&month=11&day=4&year=2013) through late morning. The preceding two days were sunny with high temperatures of 60°-62°F. Saenz *et al*. (2006) found that *Acris crepitans* calling associated with breeding was more influenced by temperature than by precipitation. No breeding activity was evident during the calling reported here, and chorusing ceased within 3 hours.

Acris blanchardi is a typical *r*-selected species with short adult life span (essentially annual population turnover), high fecundity, and rapid development to maturity (Burkett 1984). Selection for plasticity in chorusing and breeding season(s) has survival value to such species (see discussion in O'Donnell and Rayburn 2009).

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Lined Snake (*Tropidoclonion lineatum*) predated by Eastern Racer (*Coluber constrictor*) in Central Nebraska

Eastern Racers (*Coluber constrictor*) consume a variety of vertebrates as food resources. Prey items are known to include amphibians, mammals, reptiles, and invertebrates (Fitch 1999, Halstead et al. 2008). Adult *C. constrictors* also have been shown to consume juveniles of their own species (Jackson 1971). In northeastern Kansas, Fitch (1999) observed *C. constrictor* to feed occasionally on small snakes. Of 184 prey items, snakes only accounted for 6% of observations including 4 Common Garter Snakes (*Thamnophis sirtalis*), 3 Brown Snakes(*Storeria dekayi*), 1 Eastern Racer (*C. constrictor*), 1 Ringneck Snake (*Diadophis punctatus*), 1 unspecified snake, and 1 Lined Snake (*Tropidoclonion lineatum*).

On 29 August 2013, we observed a regurgitated *T. lineatum* inside a funnel trap with two *C. constrictor*. The regurgitated *T. lineatum* was partially digested. The *T. lineatum* apparently was consumed by one of the *C. constrictors* prior to their capture, as no other species of vertebrates were present in the trap. Habitat surrounding the funnel trap consisted of a disturbed, sandy pasture near a slough in the floodplain of Platte River in Hall County, Nebraska (40.79526°N, 98.45672°W; NAD 1983). The primary vegetation of the location is Kentucky bluegrass (*Poa pratensis*), buffalo bur (*Solanum rastratum*), and prairie cordgrass (*Spartina pectinata*). According to a survey of herpetofauna at the Crane Trust by Geluso and Harner (2013), *C. constrictor* is not common. Only two individuals were captured during their study, and both were subadults. During the same study, *T. lineatum* represented the fifth most common species captured (Geluso and Harner 2013). Our observation represents the first observation of *C. constrictor* preying on *T. lineatum* in Nebraska and only the second reported observation

of this predator-prey relationship throughout the distributions of these two snake species. As noted above, the previous observation was reported by Fitch (1999) in northeastern Kansas. Specimens were deposited and verified by Curtis Schmidt, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas (FHSM 16564 and 16582).

We thank the Crane Trust for permission to conduct research on their land and for providing us with support for constructing, maintaining, and checking our traps.

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Fort Leavenworth Herpetofaunal Survey for 2013

The fourth annual Fort Leavenworth Herpetofaunal Survey was conducted on Saturday, 20 April 2013, with 12 participants. Over the following several weeks, survey sites were rechecked, augmenting the number of both species and specimens observed. A combined total of 98 specimens representing 16 species were observed. This marked the second consecutive year the project was conducted in fulfillment of Eagle Scout requirements, with Logan Burkey earning that rank this year.

Materials used as artificial cover objects include existing boards, carpet, and tin as well as additional tin placed since previous surveys. Two new sites were created; one in bottomland along the Missouri River (which proved unproductive this year) and one in the southeast corner of the installation.

Participants were divided into groups with at least one experienced herper in each group for the formal survey. Chris McMartin conducted subsequent surveys both solo and with Matt Jeppson. A coworker also submitted observations which Chris verified. The total person-hours spent deliberately searching (both during the formal survey and additional survey periods; not counting incidental observations) was 31:06.

The Leavenworth area experienced unusually low temperatures, when compared to historical averages, during spring 2013. The general trend for the week prior to the formal survey was much cooler conditions, and higher rainfall, than historical averages. Precipitation during the week leading up to the survey was higher than average, and year-to-date precipitation as of the survey date was also slightly above the historical average—7.64 inches compared to 7.13 inches. Month-to-date precipitation was 2.80 inches, slightly higher than the historical average of 2.23 inches.

The survey date started with a low temperature of 32.0 degrees Fahrenheit occurring at 4:00 am and persisting through 7:00 am. A temperature and relative humidity spot reading was taken on-site using a commercially available digital thermometer/hygrometer at 10:40 a.m., registering 51 degrees Fahrenheit and 31% humidity with partly cloudy skies. At the conclusion of the survey at 3:10 p.m. another spot reading was taken, registering 59 degrees Fahrenheit and 30% humidity with scattered clouds. The moon phase at this time was a waning gibbous, with last quarter officially on 24 April.

A total of 98 animals were observed during the official survey on 20 April 2013 as well as during informal surveys in the following weeks. Significant finds this year were the discovery of two Great Plains Narrowmouth Toads (not documented from the installation since 1940) and two Three-toed Box Turtles (never documented from the installation). Other animals notedwere the American Toad (3), Blanchard's Cricket Frog (1), American Bullfrog (1), Cope's Gray Treefrog (6), Western Narrowmouth Toad (2), Five-lined Skink (22*)*, Common Gartersnake (3), Copperhead (1), North American Racer (2), Western Milksnake (7), Western Ratsnake (1), Western Ribbonsnake (1), Western Worm Snake (2), Ring-necked Snake (43*)*, Painted Turtle (1), Three-toed Box Turtle (2)

The continued success of this survey is due in large part to the efforts of local citizen-scientist volunteers. Participants this year were Anemone Burkey, Chloe Burkey, Brigham Burkey, Drew Burkey, Logan Burkey, Salix Burkey, Chris Heatherly, Kristin Hopper, Matt Jeppson, Chris McMartin, Cameron Peebles, Julio Rodriguez, Brandon Wolfsohn, and Jim Wolfsohn.

Special thanks to Matt Nowak, for his extensive coordination with various installation agencies to enable the survey to be conducted, and the provision of placards for marking the cover items. George Pisani, for his provision of additional tin to augment the transect sites.

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An undercover hellbender: Unique artificial shelter use by an endangered and threatened amphibian, the Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*)

The Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*) is one of the largest salamanders in North America, where it occurs in rivers and streams in much of the eastern United States (Conant and Collins, 1998). These large amphibians, listed as endangered, threatened, species of special concern, or otherwise protected in most states throughout their range (Levell, 1995; Mayasich et al., 2003; Phillips and Humprhies, 2005), have been shown to have undergone steep population declines over a considerable portion of their range (Nickerson and Mays, 1973). This species requires perennial streams and rivers of cool, swift flowing water with abundant cover, principally large rocks which serve as shelter for the salamanders and their predominant prey, crayfish (Netting, 1929; Nickerson and Mays, 1973). Hellbenders have also been reported to utilize bedrock cracks and crevices, and submerged logs and tree root wads as cover (Burgmeier et al., 2011).

Due to their cutaneous respiration it is often inferred that *Cryptobranchus* are indicative of healthy stream or river systems with high-levels of dissolved oxygen (Hillis and Bellis, 1971; Guimond and Hutchison, 1973). As such, humans can have a drastic impact on the quality of a water system and the habitat of this salamander. Hellbender population declines have been linked to anthropogenic activities, such as overutilization (sometimes in the process of collecting) and habitat alteration, in the form of siltation, chemical pollutants, impoundment, channelization, eutrophication, etc. (Dundee, 1971; Nickerson and Mays, 1973; Mayasich et al., 2003, Bodinof et al., 2012). Many of these activities also lead to human garbage and trash being left in the habitats of hellbenders. This garbage can commonly lead to problems and have detrimental effects on hellbender populations.

On 27 August 2011, at ca. 1030 h, a dead adult Eastern Hellbender was found in Laurel Fork Creek below Laurel Falls in Cherokee National Forest, Carter County, Tennessee adjacent to the Appalachian Trail. Just upstream from where the this individual was found, a piece approximately 0.7-1.0 square meters of thick, black plastic sheeting laying on the bottom of a gentler flowing section of stream with an approximate depth of 10.0-15.0 cm (Figure 1). An Eastern Hellbender approximately 50 cm TL was uncovered beneath the sheeting and captured. Upon release approximately 3.0 m downstream, the Hellbender headed back upstream and returned to the plastic cover within 2-3 minutes (Figure 2). This individual appeared to have been using the large plastic sheet for cover, as the species would use large rocks. The presence of multiple individuals implies that the creek contains a small population. In September 2013, the piece of plastic was still present at the same location (Fig. 3). Seven live and two partially eaten crayfish were found beneath it.

Use of artificial covers of wood and tin by amphibians and reptiles (Hampton, 2007) and black plastic sheeting by snakes (Kjoss and Litvaitis, 2001a; 2001b) are exploited as sources of shelter. Although based on this single observation, our finding opens for consideration the use of this type of artificial cover in refuge-limited situations, and perhaps the feasibility of its use for long-term monitoring of populations.

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We would like to thank Blaine Schubert and Jim Mead for giving us opportunities to study herpetology

Figure 1. Nathan Noll lifting the black plastic sheeting in Laural Fork Creek that the *Cryptobranchus alleganiensis alleganiensis* was found beneath on 27 August 2011.

Figure 2. The *Cryptobranchus alleganiensis alleganiensis* individual making its way upstream to the piece of plastic sheeting immediately after its release.

Figure 3. Relocation of the black plastic sheeting in Laurel Fork Creek at the same location two years after its initial discovery in September 2013.

in Tennessee. We also thank Nathan Noll for locating the specimen. Mark Hutchison provided the photograph used in Figure 1. Walter Meshaka provided helpful comments and suggestions on an earlier draft of this manuscript. Kelly Irwin provided a helpful review of this manuscript as well.

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ARTICLES

Adult body size and reproductive characteristics of the Green Frog, *Lithobates clamitans melanotus* (Rafinesque, 1820), from a single site in the northern Allegheny Mountains

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INTRODUCTION

The Green Frog, *Lithobates clamitans melanotus* (Rafinesque, 1820), is one of two recognized forms of the Bronze Frog, *L. clamitans* (Latreille, 1801) of eastern North America. The geographic range of the Green Frog extends across southeastern Canada and much of the eastern United States, where it is replaced by, and, to some extent, intergrades with the Bronze Frog, *L. c. clamitans* (Latreille, 1801) in the Southeast (Conant and Collins, 1998; Pauley and Lannoo, 2005). Morphologically, the two subspecies are differentiated in adult body size (Wright and Wright, 1949; Mecham, 1954) and color pattern (Mecham, 1954). Immaculate bronze or tan in dorsal color, the Bronze Frog of the South is smaller in adult body size than its northern counterpart whose dorsum is darker and often spotted in black. Examination of geographic variation in selected life history traits of the two forms have corroborated findings of larger body size in the Green Frog, with the largest forms found in northern latitudes (e.g., Meshaka et al., 2009a,b,c).

The geographic range of this species is statewide in Pennsylvania, where it can be found in association with water in a wide range of habitats (Hulse et al., 2001; Meshaka and Collins, 2010). In a south-central Pennsylvania population of the Green Frog, males were more similar to southern counterparts with respect to having an early age and small body size at sexual maturity, but were intermediate between northern and southern populations in their mean adult body size of 68.2 mm SVL (Meshaka, 2013). Females, on the other hand, typified those of northern populations with respect to age and body size at sexual maturity and mean adult body size (Meshaka, 2013). Approximately 200 km (124 mi) almost due west from Meshaka's (2013) site in the Cumberland Valley is the Powdermill Nature Reserve (PNR) in the Ligonier Valley of the Allegheny Mountains. We examined a series of Green Frogs from the PNR to determine the extent to which selected geographically variable life history traits varied in a climatically different region from that of the Cumberland Valley. We also provide data on reproductive characteristics from PNR, including clutch characteristics, infrequently reported (Martof, 1956a; Trauth et al., 2004; Meshaka, 2013; Meshaka et al., 2009a,b) from this otherwise ubiquitous North American species.

STUDY SITE AND METHODS

The Powdermill Nature Reserve (PNR) is an 856.2 ha preserve that is located in Rector, Westmoreland County, in the Ligonier Valley of southwestern Pennsylvania. The reserve, established in 1956, is owned and operated by the Carnegie Museum of Natural History. Much of the previously farmed tracts of the PNR have since succeeded to mixed forest, such that <5% of the property is primary or secondary grassland. Natural water features of the PNR include the Powdermill Run. Artificial ponds of various sizes and depths were created in the 1960s in association with a long-term bird banding program. Two of the ponds, Heron Pond (0.100 ha) and Plover Pond (0.104 ha), were cleared of extensive emergent aquatic vegetation and shrubs in spring 2013 to restore them as acceptable shorebird habitat; open shoreline, extensive littoral zone, and uneven shallow depths. Both of these ponds were adjacent to three other permanent ponds, all of which were inhabited by the Green Frog.

Green Frogs were captured by hand at both restored ponds at night on 23 June and 2 July 2013. Individuals were immediately euthanized, fixed in formalin, and later transferred into ETOH. The following methods, excepting those of clutch size estimation, follow those of comparable studies of the Green Frog in Pennsylvania (Meshaka, 2013) and the Green Frog and Bronze Frog elsewhere (Meshaka, 2013; Meshaka et al. 2009a,b,c; Meshaka and Marshall, 2012).

Sexual maturity was determined in males using a slightly modified version of the technique by Martof (1956b), whereby the ratio of tympanum diameter: body size corresponded to enlarged testis, which signified sexual maturity. Martof (1956b) noted that the tympana generally were "nearly or quite round". For most frogs Martof (1956b) measured the antero-posterior diameter of the left tympanum. If irregular in shape, the right tympanum was measured. If both were misshapen, Martof (1956b) took the average of the antero-posterior and dorso-ventral measurements. Irregularly shaped tympana from our sample were greater in length than in height. For consistency, we measured the dorso-ventral diameter of the left tympanum and used the right tympanum only if the left one appeared to have been damaged in some way. As per Martof (1956b), sex index = body length/ tympanum diameter. The sex index was generally below 10 for sexually mature males (Martof, 1956b).

The secondary sexual characteristic of enlarged thumbs was not easily ascertained in small males. The yellow throat of mature males, which easily fades to varying degrees in preservative, was not apparent. The length and width of the left testis as a percent of the body size in snout-vent length (SVL) was used to measure monthly differences in testis dimensions.

Sexual maturity in females was determined through dissection, and was classified in one of four ovarian stages. In the first ovarian stage oviducts were thin and relatively straight, and the ovaries are somewhat opaque. In the second ovarian stage, the oviducts were larger and more coiled, and the ovaries contained some pigmented oocytes. In the third ovarian stage, oviducts were thick and heavily coiled, and the ovaries were in various stages of clutch development. In the fourth ovarian stage, oviducts were thick and heavily coiled, and the ovaries were full of polarized ova with few primary oocytes, signifying a female ready for oviposition. Fat body development was scored as absent, intermediate in volume in the body cavity, to extensive development that reached upwards in the body cavity. The latter amount was used as an estimation incidence of extensive fat relative to all females of a particular category. Food was noted as being present or absent upon examination of the stomach and intestines. Clutch size was estimated by counts of entire egg compliments of gravid females. Diameters of ten randomly chosen ova from each clutch were measured under an ocular microscope to the nearest 0.1 mm.

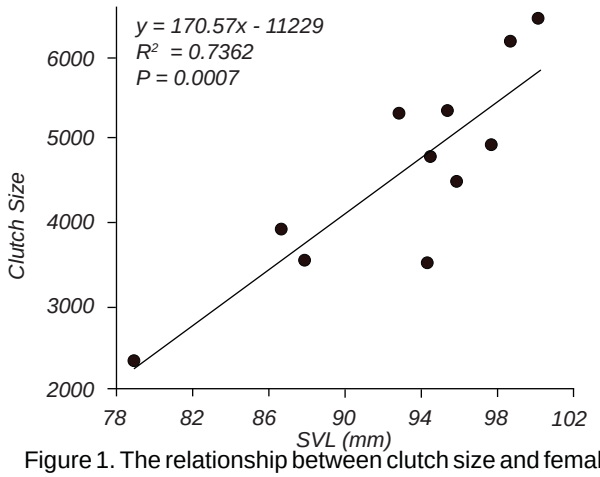

Figure 1. The relationship between clutch size and female body size in 11 female Green Frogs (*Lithobates clamitans melanotus*) from the Powdermill Nature Reserve, Rector, Westmoreland County, Pennsylvania.

All specimens were stored in the Section of Zoology and Botany of the State Museum of Pennsylvania, Harrisburg. Means were followed by ± 1 standard deviations (SD). Two sample T-tests were used to compare mean values, and F-tests were used to compare variances, between samples. Statistical differences were deemed significant at $p < 0.05$.

RESULTS

Body size of adults- Mean body size of adult males (mean = 83.0 ± 6.1 mm SVL; range = 72.5-90.9; n = 13) was significantly smaller (t-Test = -4.554; df = 24; p = 0.00013) than that of adult females (mean = 93.9 ± 6.2 mm SVL; range = 79.0-101.4; n = 13). Body size dimorphism as expressed as the ratio of mean body sizes of males: females was 0.884:1.000

Fertility and male condition- The mean sex index (body length/ tympanum diameter) for the 2013 sample was 6.6 (SD = 0.32; range = 5.9-7.0). Enlarged thumbs were evident on all males. Only one of the 13 males contained extensive fat; however, the stomachs orintestines of all males contained food.

Clutch size and female condition- Mean values for clutch size (mean = 4,630.8 ± 1,229.8 eggs; range = 2334.0-6467.0) and ovum diameter (mean = 1.8 ± 0.1 mm; range = 1.5-2.1) was estimated from 11 gravid females (mean = 93.0 ± 6.2 mm SVL; range = 79.0-100.1). Female body size explained 74% of the variance in clutch size (Figure 1). Although the relationships were positive, neither mean nor maximum ovum diameter co-varied significantly with female body size or clutch size. Among the 11 gravid females, only two (18.2%) individuals contained extensive fat, whereas nine (81.8%) of those females contained food.

DISCUSSION

Our sample of adults represents an actively breeding segment of the population, which was comprised of large adults. A consequence of this sampling was that among males, the mean body size of our sample could have been larger than the entire adult population at large rather than just the ones at the breeding site.

For example, three smaller but sexually mature males were collected from nearby ponds in April 2009 (65.8 mm SVL) and 2010 (55.8, 61.2 mm SVL). Males of this species can also be territorial and will physically wrestle with one another in defense of that territory (Wells, 1978), a phenomenon which also occurs in Pennsylvania (WEM, pers. obs.). Thus, the aggregation of large males could reflect reluctance by younger, smaller males to be at that breeding site or to be easily seen, thereby providing us with an accurate measurement of the segment of the adult male population that was both sexually mature and socially dominant. To that end, large, presumably territorial, males with yellow throats were observationally much more abundant than females during the nightly searches.

The high number of gravid females (11/13) could also have skewed the value of mean body size of adult females. Notwithstanding the large body sizes of the two non-gravid females in our sample (96.5, 101.4 mm SVL), gravid females of this species have been found to be significantly larger than non-gravid females elsewhere (Meshaka et al., 2009a,b,c; Meshaka et al., 2011; Meshaka and Marshall, 2012; Meshaka, 2013). Therefore, female body size of our sample is best compared to gravid females of other sites. Gravid females from our study adhered to larger body size among northern gravid females: 76.3 mm SVL in south-central Pennsylvania (Meshaka, 2013), 88.1 mm SVL in West Virginia (Meshaka et al., 2009b), 69.9 mm SVL in southern Louisiana (Meshaka et al., 2009c), 71.7 mm SVL in Texas (Meshaka et al., 2011), 70.8 mm SVL in Florida (Meshaka and Marshall, 2012). Interestingly, a mean body size of 77.4 mm SVL was derived from a sample of gravid females from northern Louisiana (Meshaka et al., 2009a). Females from the south-central Pennsylvania site (Meshaka, 2013) were collected from a county park, where up until recently ranids were not protected from harvesting by local residents. Thus, it remains speculative as to whether gravid females from the park would have been even larger in the absence of local harvesting activities.

The large mean body sizes of breeding males and females at PNR, even if larger than those of all mature individuals of the population, adhered to findings of larger adult body sizes in northern populations of this species. The PNR adults likewise followed the general pattern of diminished degree of body size dimorphism associated with male combat in this species (Wells, 1978). The male: female body size ratio, 0.88:1.00 at PNR, was similar to that measured in other studies: 1.06:1.00 in Connecticut (Klemens, 1993), 0.99:1.00 in Michigan (Martof, 1956b), 0.94:1.00 in Indiana (Minton, 2001), 1.01:1.00 in Pennsylvania (Hulse et al., 2001), 0.88:1.00 in southwestern Pennsylvania (this study), 0.89:1.00 in south-central Pennsylvania (Meshaka, 2013), 0.86:1.00 in West Virginia (Meshaka et al., 2009b), 0.92:1.00 in northern Louisiana (Meshaka et al., 2009a), 0.95:1.00 in southern Louisiana (Meshaka et al., 2009c), 0.92:1.00 in Texas (Meshaka et al.,), 0.92:1.00 in Florida (Meshaka and Marshall, 2012). As with calculation of mean adult body size, we draw attention to the potential effect that a segment of the adult population can have on the degree of body size dimorphism calculated for this species.

Results from comparisons of clutch characteristics from PNR with those of other sites were not uniform. Variation in clutch size among sites was not unexpected in light of variation in female body size or female condition among sites. Although clutch size and female body size typically co-vary among anurans within a given reproductive mode (Salthe and Duellman, 1973) as it did in our sample and in northern Louisiana (Meshaka et al., 2009a), small mean female body size did not equate with small mean clutch size among all sites: 80.7 mm SVL and 5,830 eggs, respectively, in West Virginia (Meshaka et al., 2009b), 93.0 mm SVL and 3,70 eggs, respectively, in south-central Pennsylvania (Meshaka, 2013), and 76.0 mm SVL and 2,550 eggs, respectively, in northern Louisiana (Meshaka et al., 2009a). This variation as well as opposite results in northern Louisiana and PNR as compared to West Virginia with respect to relationships in clutch characteristics, highlights the importance of other factors associated with these sorts of life history variables and the influence of geography upon them. For example, production of two clutches annually has been confirmed in this species from Ithaca, New York, whereby a second smaller clutch was produced by all females having laid a first clutch before 21 July (Wells, 1976). If this phenomenon occurs at PNR, than the late June-early July concentration of females from our sample would have resulted in larger clutch size estimate than if estimates included subsequent smaller clutches taken later in the season. Consequently, attention to timing of samples is warranted (early, late, combined) when evaluating effects of geography and local effects on these sorts of life history traits and their relationships with one another.

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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.

Kansas Herpetological Society
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