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Front Cover: A map of the state of Kansas, showing the exact localities (dark circles) for members of the turtle complex *Graptemys pseudogeographica*. Head patterns of individuals from the three westernmost drainages in which they occur are shown at left of the map. Prepared by Travis W. Taggart, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601.
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FALL 2004 KHS FIELD TRIP SCHEDULED FOR ROOKS COUNTY

The fall 2004 KHS field trip will be held at Webster Reservoir in Rooks County State County in northcentral Kansas. The dates of the field trip will be 2–3 October 2004. Although many participants will arrive the afternoon and evening of Friday, 1 October (look for the big KHS sign at the reservoir), the first organized count will begin at 9:00 am on Saturday, 2 October. The second organized count will begin at 2:00 pm on Saturday, 2 October. The final organized survey will take place at 9:00 am on Sunday, 3 October. The meeting place for the field trips will be Webster Reservoir, which is located approximately eight miles west and two miles north of Stockton. Please contact Jay Kirk, KHS Field Trip Chairperson (see inside front cover) for information about the availability of motels and restaurants in Stockton, as well as camping, restrooms, showers, and electrical hookups, and whether open campfires are permitted. This information will be posted on the KHS web site as it becomes available.

As with all KHS field trips, FRS channel 4 will be monitored. The Rooks County field trip will be the only official fall KHS field trip for 2004. Start making plans now to attend this exciting Society event.

RESULTS OF THE 2004 KHS SPRING FIELD TRIP TO LOGAN COUNTY

On 30 April 2004, KHS members traveled to Logan County, Kansas, to search for amphibians, turtles, and reptiles found in western Kansas. Many participants gathered and explored Logan Wildlife Area on Friday night (it was cold, but at least it didn’t snow), and at 9:00 am on Saturday morning a stunning 59 participants were present for the herpetofaunal count.

With the help of generous land-owners and residents in the area, KHS members, friends, and guests spent two great days observing many western Kansas species. A special guest at this year’s foray was Dr. Louise Mead, from the University of California at Davis. Dr. Mead (or Weezie, as we affectionately called her), attended the KHS field trip to obtain DNA samples of a large series (up to ten) of as many species as possible. She was successful—the field trip participants were eager to help, and got her a lot of material. Also attending were Travis Taggart and Curtis Schmidt, curators of herpetology at the Sternberg Museum of Natural History, Fort Hays State University, in Hays. Both Taggart and Schmidt are conducting a statewide field survey of the Kansas herpetofauna (sponsored by the Kansas Department of Wildlife & Parks), and they too acquired much valuable data on the distribution and abundance of these creatures in Logan County. KHS members Michael Washburne, Jeremy Washburne, and Austin Triboulet made an extra effort to obtain data and samples for Mead, Taggart, and Schmidt, traveling back east on Saturday to Ellsworth County to acquire additional species for sampling. On Sunday morning, a hardy 29 participants remained to conduct the final herp count. Eric Kessler found a Common Kingsnake, the only example of this beautiful serpent found during the entire field trip. It was a great field trip to a scenic and majestic part of Kansas.

The count for 1–2 May 2004 was as follows:

Kansas: Logan Co: Smith Farm, Sec. 10, T13S, R35W
1 May 2004 (9:30 am–10:00 am)
Milk Snake ............................................................. 1
Bullsnake ............................................................... 1
Total
2 species ............................................. 2 specimens

Kansas: Logan Co: Secs. 21 & 28, T13S, R34W
1 May 2004 (10:30 am–noon)
Ornate Box Turtle .................................................. 1
Lesser Earless Lizard .............................................. 4
Western Hognose Snake ...................................... 1
Plains Blackhead Snake ........................................ 2
Eastern Racer ....................................................... 1
Plains Garter Snake .............................................. 2
Prairie Rattlesnake ................................................ 1
Total
9 species .............................................. 100 specimens
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<th>Count</th>
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<tr>
<td>Kansas: Logan Co: Gunnel's Ranch, Sec. 16, T11S, R37W</td>
<td>1 May 2004</td>
<td>1:00 pm–4:00 pm</td>
<td>Western Chorus Frog</td>
<td>5</td>
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<td></td>
<td></td>
<td></td>
<td>Plains Leopard Frog</td>
<td>3</td>
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<td></td>
<td></td>
<td></td>
<td>Ornate Box Turtle</td>
<td>4</td>
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<td></td>
<td></td>
<td></td>
<td>Lesser Earless Lizard</td>
<td>36</td>
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<td>Prairie Rattlesnake</td>
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<td>Kansas: Logan Co: near Russell Springs</td>
<td>1 May 2004</td>
<td>1:00 pm–4:00 pm</td>
<td>Plains Blackhead Snake</td>
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<td>Wordhouse’s Toad</td>
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<td>Kansas: Logan Co: Sec. 27, T13S, R36W</td>
<td>1 May 2004</td>
<td>3:00 pm–4:00 pm</td>
<td>Prairie Lizard</td>
<td>6</td>
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<td>Ringneck Snake</td>
<td>1</td>
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<td></td>
<td>Great Plains Skink</td>
<td>1</td>
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<td></td>
<td>Plains Blackhead Snake</td>
<td>3</td>
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<td></td>
<td>Common Kingsnake</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Milk Snake</td>
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<tr>
<td>Kansas: Logan Co: Secs. 5 &amp; 8, T15S, R36W</td>
<td>2 May 2004</td>
<td>10:15 am–11:30 am</td>
<td>Lesser Earless Lizard</td>
<td>2</td>
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<td>Prairie Lizard</td>
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<td>Great Plains Skink</td>
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<td>Ringneck Snake</td>
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<td>Plains Blackhead Snake</td>
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<td><strong>Totals</strong></td>
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<td>8</td>
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Some of the 29 hardy participants that stayed for the Sunday morning finale of the KHS spring field trip to Logan County, Kansas, on 2 May 2004. Photograph by Suzanne L. Collins.
Grand Total

17 species ....................................... 179 specimens


Ross McNearney of Leawood, Kansas, hones his photography skills on a young Prairie Rattlesnake during the KHS spring field trip to Logan County, Kansas, on 1–2 May 2004. This is the only species of venomous snake known from the county, and the participants attending the two-day event tallied six examples of this serpent. Photograph by Ginny Weatherman of Image Works, Lawrence.

Rugged topography characterized the habitat of amphibians, turtles, and reptiles typically encountered during this KHS spring field trip to Logan County, Kansas, on 1–2 May 2004. Over a two-day period, nearly 180 specimens of 17 species were counted by the fifty-nine participants. Photograph by Suzanne L. Collins.
Prairie Rattlesnakes always focus the attention of everyone near them. This example posed just fine for the cameras of many of the field trip participants. Photograph by Suzanne L. Collins.

Logan Babst of Winona, Kansas, proudly displays his Eastern Racer during the KHS spring field trip. Photograph by Suzanne L. Collins.

Eric Kessler, his daughter, and his students always bring vigor and enthusiasm to KHS field trips. Photograph by Suzanne L. Collins.

Joe Collins, Mike Washburne, Jeremy Washburne and Austin Triboulet record data taken during the count. Photograph by Suzanne L. Collins.

Dr. Louise Mead, University of California at Davis, needed samples of DNA from a large series of specimens of as many species as possible. KHS members didn’t let her down; a constant stream of creatures showed up at the laboratory on the tailgate of her vehicle. Photograph by Suzanne L. Collins.

Prairie Rattlesnakes always focus the attention of everyone near them. This example posed just fine for the cameras of many of the field trip participants. Photograph by Suzanne L. Collins.
Ginny Weatherman of Lawrence, Kansas, videotapes a Western Hognose Snake during the KHS spring field trip. Photograph by Suzanne L. Collins.

Mary Kate Baldwin of Topeka, Kansas, displays a Prairie Lizard, one of 98 found during the KHS spring field trip. Photograph by Suzanne L. Collins.

Jay Kirk was the field trip chairperson. Here he gazes majestically across the plains from his peak as others beneath him search for herp treasures. Photograph by Suzanne L. Collins.

Eric Wenzl of Wichita, Kansas, worked the rocks for herpetological nuggets. Photograph by Suzanne L. Collins.

Ringneck Snakes were not nearly as abundant in Logan County as they are in eastern Kansas. Photograph by Suzanne L. Collins.
NEW MEMBERS WANTED
If you know of someone interested in herpetology, urge that they join the KHS by sending their calendar 2004 membership dues ($15.00 regular, $20.00 contributing) to:

Mary Kate Baldwin
KHS Secretary
5438 SW 12th Terrace Apt. 4
Topeka, Kansas 66604

Membership in the KHS has many benefits, and supports the KHS and its many fine programs. Also, members are eligible for KHS grants and scholarships. If you have received this issue, you have already paid your dues for 2004; please encourage a friend or colleague to join. The KHS is the strongest state herpetological society in the nation; keep us that way by promoting membership growth.
KENTUCKY TURTLE POSTER

Kentucky’s Touchstone Energy Cooperatives have published a new poster illustrating in color the turtles of their state.

Designed by Randy Buckham, the poster covers the following taxa (common names as they appear on the poster):


The excellent photography is by KHS member and past president Suzanne L. Collins and John R. MacGregor, illustrations are by Dan Dourson and Brian Gasdorff, and maps are by John R. MacGregor and Joy O'Keefe.

To obtain copies, contact Touchstone Energy at joesett@ekpc.com

MAINE HERP POSTERS

The Maine Department of Inland Fisheries and Wildlife has published three new posters illustrating in color the amphibians, turtles, and reptiles of their state.

Designed by Ethan Nedeau of BioDrawVersity, the posters cover the following taxa (common names as they appear on the posters):

Poster 1—Bullfrog, Gray Treefrog, Pickerel Frog, Mink Frog, American Toad, Wood Frog, Spring Peeper, Green Frog, Northern Leopard Frog, Spring Salamander, Spotted Salamander, Blue-spotted Salamander, Eastern Newt, Common Mudpuppy, Northern Two-lined Salamander, Northern Redback Salamander, Four-toed Salamander, and Northern Dusky Salamander.

Poster 2—Blanding’s Turtle, Eastern Box Turtle, Wood Turtle, Spotted Turtle, Common Musk Turtle, Common Snapping Turtle, and Painted Turtle.


The photography is exquisite, and the text is by Mark McCollough, Phillip deMaynadier, and Ethan Nedeau

To obtain copies, contact the Maine Department of Inland Fisheries and Wildlife at (207) 287-8000

SOUTH DAKOTA HERP GRANT

KHS member Joseph T. Collins, adjunct curator of herpetology at the Sternberg Museum of Natural History, Fort Hays State University, and adjunct herpetologist with the Kansas Biological Survey at the University of Kansas, has been awarded a $10,500 grant from the South Dakota Department of Game, Fish, & Parks to conduct a diversity survey of amphibians, reptiles, and turtles found in Custer State Park in the Black Hills of southwestern South Dakota. According to Collins, amphibians, turtles, and reptiles are an significant part of the Black Hills ecosystem, and their distribution, habitat, and abundance are not fully understood in this region. One of the goals of the field work is to investigate the diversity of these animals in order to better protect them and their environment in the future. Amphibians, turtles, and reptiles can be sensitive indicators of environmental health. By learning about the habitat needs of the Black Hills herpetofauna, any future environmental damage in that region can be monitored and minimized.

Collins and his wife, Suzanne L. Collins, a noted professional wildlife photographer, will be joined by Joe’s brother, Jerry D. Collins (an experienced field herpetologist from Ohio) as well as some colleagues and former students on the project in South Dakota. They are Travis W. Taggart and Curtis J. Schmidt, and Richard Hayes (Sternberg Museum of Natural History, Fort Hays State University), Jay Kirk (Friends University, Wichita), Errol D. Hooper, Jr. (Greentop, Missouri), John Stoklosa and Ginny Weatherman (University of Kansas), Andrew Sindorf (Eudora High School), Mark Ellis (Topeka), and Ross McNearney (Blue Valley North High School).
The project is funded in part by a State Wildlife Grant from the Fish and Wildlife Service of the U.S. Department of the Interior and the South Dakota Department of Game, Fish, & Parks. Custer State Park contains many interesting species, particularly the Redbelly Snake and Smooth Green Snake.

Collins, who is also director of The Center for North American Herpetology in Lawrence, pointed out that this grant represents a significant effort by the South Dakota Department of Game, Fish, & Parks to focus on the biodiversity of these creatures in their state. He went on to say that selected specimens taken during the field work will be deposited in the research collection at the Sternberg Museum and will become a very important component of future studies on these creatures, not only in South Dakota, but throughout the Great Plains. The DNA material will provide researchers across the nation with much needed information for their studies, and will enhance our understanding of these animals not only in South Dakota, but across their range.

PENNSYLVANIA SCIENTIST ON CNAH BOARD

KHS member Walter E. Meshaka, Jr., Senior Curator, Section of Zoology and Botany, and State Herpetologist, Pennsylvania State Museum of Natural History, Harrisburg, was recently elected to the Board of Directors of The Center for North American Herpetology, Lawrence, Kansas. Dr. Meshaka becomes the seventh member of the CNAH Board, which operates the most frequently accessed academic herpetological web site on the internet.

Dr. Meshaka received his Bachelor of Science in Zoology from the University of South Florida in 1985, his Master’s Degree in Biology from Arkansas State University in 1988, and his Doctorate from Florida International University in 1994. From January to April 1995 he held a post-doctoral position at the Archbold Biological Station, Lake Placid, Florida, and from April 1995 to May 2000 he was curator at the Everglades National Park. He is the author of three books and over 70 papers on amphibians, turtles, reptiles, and crocodilians.

CNAH is the largest academic herpetological foundation in the world, and currently makes two prestigious awards annually to scientists that publish outstanding research on amphibians, turtles, reptiles or crocodilians.

Other members of the CNAH Board of Directors are Joseph T. Collins (Lawrence, Kansas), Suzanne L. Collins (Lawrence, Kansas), Kelly J. Irwin (Benton, Arkansas), James L. Knight (Columbia, South Carolina), Robert Powell (Kansas City, Missouri), and Travis W. Taggart (Hays, Kansas).

HERPETOLOGY COURSE AT WASHBURN
FALL SEMESTER 2004

For the seventh straight year, KHS member Joseph T. Collins will teach his course, Kansas Amphibians, Turtles, and Reptiles, at Washburn University in Topeka in the fall semester of 2004.

The course covers the classification, distribution and natural history of the nearly 100 kinds of amphibians, turtles, and reptiles found in Kansas. The lectures will integrate the instructor’s personal observations with the known natural history of these fascinating animals. Special subjects include herpetoculture, herpetofauna in the classroom, and endangered and threatened species. Three field trips are planned. With permission of superintendent or teacher certification officer, can be used toward renewal of Kansas teaching certificate. Offered for traditional and non-traditional students.

Collins is co-author of the Peterson Field Guide to Reptiles and Amphibians of Eastern and Central North America, which has the widest distribution of any book ever written on herpetology.

For more information about the course, contact Jeannie Cornelius, Department of Biology, Washburn University, 1700 College Avenue, Topeka, Kansas, or call (785) 231-1010 ext. 1343.

An adult example of a Kisatchie Slimy Salamander (Plethodon kisatchie) from Grant Parish, Louisiana; one of the few photographs ever taken of this rare amphibian. Photograph by Suzanne L. Collins; specimen compliments of Jeff Boundy.
GEOGRAPHIC DISTRIBUTION


Submitted by NATE DAVIS, Kansas Department of Wildlife & Parks, R. R. 2, Box 54-A, Pratt, Kansas 67124, and TRAVIS W. TAGGART and CURTIS J. SCHMIDT, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601.


Submitted by CURTIS J. SCHMIDT, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601.


Submitted by CURTIS J. SCHMIDT, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601.


Submitted by TRAVIS W. TAGGART, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601.
LIFE HISTORY NOTES


Submitted by TRAVIS W. TAGGART, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601.

PODARCIS SICULA (Italian Wall Lizard). Winter Activity. At about 2:00 pm on 19 February 2004, an adult Italian Wall Lizard was observed sunning itself on one of the logs in the lizard habitat area located on the south side of the biology lab (Room 122) at Northern Hills Junior High School, Shawnee County, Kansas. The surface temperature by the log was about 68 degrees F and air temperature was 39 degrees F. There was still a lot of ice and snow on the ground a few meters to the south of the log near the art room door. The lizard appeared to be quite healthy, having survived the cold winter season of 2003–2004. The reptile remained on the log for several minutes until a shadow moved over the location. At that time, it quickly moved under a large rock near the side of the building. This was the first sighting of this species in Shawnee County, Kansas, for 2004.

Submitted by LARRY L. MILLER, Northern Hills Junior High School, 620 NW Topeka Boulevard, Topeka, Kansas 66617.


Submitted by KEITH COLEMAN, 1727 West 24th Street, Apt. 1, Lawrence, Kansas 66046.

Above: An adult Northern Water Snake (Nerodia sipedon) consuming a Sunfish (Lepomis sp.) at Ottawa State Lake, Kansas. Photograph by Russell W. LaForce.

DIADEPHUS PUNCTATUS (Ringneck Snake). Albino. I discovered an albino adult Ringneck Snake at a site 3 mi W jct. I-435 & Ks. Rt. 10 in Johnson County, Kansas, on 27 April 2004 (see image below). The specimen was white dorsally with pink eyes and a typically yellow but weakly spotted venter.

Submitted by ROSS MCNEARNEY, 11300 Canterbury Court, Leawood, Kansas 66211.

NERODIA SIPEDON (Northern Water Snake). Diet. An adult Northern Water Snake was observed eating a Sunfish (Lepomis sp.) at Ottawa State Fishing Lake (north of Bennington, Sec. 8, T11S, R2W), Ottawa County, Kansas, during June 1998 (see image below).

Submitted by RUSSELL W. LAFORCE, Kansas Department of Wildlife and Parks, 1020 South Kansas Avenue, Topeka, Kansas 66612.
Lizards fall prey to a wide variety of organisms. By far the most common predators that regularly prey on lizards are larger vertebrates, primarily birds, mammals, and snakes (Pianka and Vitt, 2003). Many of these predators rely on lizards to fulfill their energy needs and often have adapted specific behavioral strategies that allow for specialization on lizards. However, lizards, particularly juveniles, often fall victim to more opportunistic predators. Juvenile lizards have fallen prey to such unlikely predators as spiders, mantids, and scorpions (Pianka and Vitt, 2003). Little information exists regarding amphibians as potential predators on lizards, although they are among the most opportunistic of feeders.

From May through October 2003, I conducted a herpetofaunal survey of the Smoky Hill Air National Guard Weapons Range in Saline County, Kansas for the Kansas Biological Survey. On 3 September 2003, while searching a Dakota sandstone outcropping, I witnessed an attempted predation on a hatchling Texas Horned Lizard (Phrynosoma cornutum) by an adult Plains Leopard Frog (Rana blairi). Texas Horned Lizards were extremely common throughout the range, with large populations in this particular habitat type. During late August and early September, hatchling horned lizards were by far the most easily observed cohort. Individuals were easily observed at nearly all areas with sparse vegetation, including maintained roads, frequently traveled trails, and rock outcrops.

At approximately 13:30 hrs at an air temperature of 85–90°F, I observed an adult Plains Leopard Frog active among the sandstone rocks. No water sources were in the immediate area; however, the ground and vegetation were still wet from an overnight thunderstorm and the relative humidity was high. This species often wanders far from water during mild, wet conditions (Hammerson, 1999; Collins, 1993). While attempting a photograph, I caused the frog to make an attempted escape, which apparently startled a nearby horned lizard. The movement of the small lizard caused an immediate feeding response by the frog which then attempted to eat the lizard. The attempt failed, and was soon followed by three more attempts, each apparently triggered by the lizard’s movements. All attempts at grasping the lizard failed, probably due to the unpalatability of the spiny scales of the lizard and not because of the lizard’s size.

Initially, no specific escape tactics were taken, except for fleeing, which in this case proved unsuccessful. Texas Horned Lizards exhibit several other responses to predatory events, including hissing, gaping, charging, biting, flattening the body, inflating the lungs, thrusting the occipital horns, and, occasionally, squirting blood from the eyes (Sherbrooke, 2003; Hammerson, 1999). One of the most effective defenses against predation in horned lizards is cryptic coloration (Pianka and Vitt, 2003; Sherbrooke, 2003). Often, if any or all of the above tactics fail to dissuade the predator, the lizards will remain motionless and rely on their cryptic coloration and pattern. In this case, after the frog’s fourth attempt at capturing the lizard, the haching ceased all movement and the frog soon lost interest, as if it lost track of the lizard. The frog soon hopped away. Although this particular attempt failed, this episode provides anecdotal evidence that Plains Leopard Frogs will eat small lizards.

Literature Cited

On the afternoon of 22 April 2004, a group of Northern Hills Junior High School biology students and teachers visited southcentral Kansas and drove the sandy roads of southwestern Harper and southeastern Barber counties in search of amphibians, reptiles, and turtles. The weather was cloudy with occasional light mist. There had been heavy rain in the area the night before and water was standing in most ditches. The temperature was around 56°F. About a dozen Strecker’s Chorus Frogs (Pseudacris streckeri) were heard calling from a small shallow pond near a road in Harper County around 7:30 pm (Figure 1).

The group proceeded on to Kiowa, Kansas, in Barber County for an evening meal. After the stop in Kiowa, they retraced the roads back to Harper County. The temperature had dropped to around 50°F at 9:30 pm. There was occasional light rain. During the trip back, the field crew heard hundreds (possibly thousands) of Strecker’s Chorus Frogs calling from roadside ditches, shallow pasture pools, and agricultural fields in both extreme southeastern Barber County and much of southwestern Harper County. A single frog was caught for photography. Dozens of these frogs would call as we walked near them along the roadside ditches. Often they could be heard calling in all directions for as far as their choruses would carry.

Interestingly, no other species of amphibian, reptile, or turtle were discovered during more than four hours of driving sandy roads and walking along roadside ditches.

Field crew participants making the observations were: Phil Esau, Larry L. Miller, Christi Heston, Kori Drane (all staff members from Northern Hills Junior High School in Topeka, Kansas); Brandon Appelhanz, Rose Armstrong, Debra Bush, Jessica Crowder, Michelle Dessens, Heather Hendrix, Jennifer Knudson, Michelle Kozubek, Kayla Price, Vicki Rea, Liz Smith, Matt Thiessen, Jeffrey Whorton, Gavin Williams (all freshman biology students from Northern Hills Junior High School).
FOOD SURPLUS AND BODY SIZE IN LOCAL POPULATIONS OF SNAKES

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In anyone’s snake story the snake tends to grow larger with each retelling. I know of no case where it has become smaller. In herpetological literature, maximum recorded length is emphasized. Actually, we don’t know much about size in snakes: what is normal, how the sexes differ, and how they vary geographically. Snakes, along with other reptiles, are generally considered to have indeterminate growth. Unusually large size may result from unusual longevity. I have suggested (Fitch, 1999) that in some kinds of snakes snout-vent length (SVL) may provide an index of age. On the contrary, information accumulated for several species shows that size is drastically affected by food supply and that local populations separated by distances no greater than one kilometer may be very different in adult size (mean and maximum) if there are differences in availability of prey.

Methods and Materials

Over the past 55 years, measurements and weights have been accumulated for 17 species of snakes on the Fitch Natural History Reservation. A surfeit of records has become available for comparing individuals and local populations. Michael V. Plummer, while pursuing his doctoral research in the 1970s, discovered a group of Eastern Rat Snakes (Elaphe obsoleta) living in a bank swallow colony at the Kansas River (Plummer, 1977). All ten of these snakes (6 males, 4 females) were markedly larger than the average size for the species on the Fitch Natural History Reservation (6.8 km north of Plummer’s study site). Subsequently, similar size differences were found between neighboring populations of four other species (Agkistrodon contortrix, Coluber constrictor, Diadophis punctatus, and Thamnophis sirtalis).

Results

Tables 1 and 2 show differences in size in local populations of five species. Eastern Rat Snakes provided the best example of the benefits of food surplus. Lengths and weights averaged 1121.5 mm and 258 grams for males, and 1065.5 mm and 310 grams for females, on the Fitch Reservation, but population samples from areas of food surplus were strikingly larger. Female to male ratios were 91% in SVL and 78% in weight. Plummer’s (1977) snakes from a bank swallow colony at the Kansas River were the largest. To compare sizes of snakes from different areas, the means for each sex were added together. The Eastern Rat Snakes from private land, where there were domestic and commensal birds (chickens, pigeons, house sparrows, barn swallows) and mammals (house mice) for prey, grew larger than those that had only their natural prey on the Reservation. Compared with snakes at the bank swallow colony, other local groups of Eastern Rat Snakes showed the following percentages of their weight: Fitch Reservation in 1990s, 35%; KU Nelson Tract Northwest pens area, 44%; KU Biotic Succession Area, 45.5%; John Morgan farm, 58%; Chester Fitch property, 60%; Christie and Brock chicken yards, 79%.

For Eastern Racers, seven local population samples were checked. The smallest were those from the Road Field-High Field area of upland fields, formerly cultivated and heavily eroded with steep barren banks and sparse vegetation. The largest Eastern Racers found locally were those on the Chester Fitch property, and other local populations nearby averaged the following percentages of their weight: Road Field-High Field: 53%; House Field in the 1990s: 62%; House Field in the 1970s: 68%; Nelson Experimental Tract, northwest pens area: 74%; Quarry Field 84%; Biotic Succession Area: 92%.

On the Biotic Succession Area, prairie voles (Microtus ochrogaster) were abundant and made up the main food of Copperheads, which thrived there and grew larger than those on the adjacent Reservation. The latter subsisted on a more varied diet with relatively few voles. The Reservation snakes averaged 58.5% of the weight of their better fed relatives on the Biotic Succession Area.

For Common Garter Snakes, three samples were taken: one from the House Field-Quarry Field area, one from the Biotic Succession Area and one from the NESA northwest pens area. The smallest snakes, living in...
the House Field-Quarry Field area, were 70% of the weight of those in the NESA northwest pens area and 84% of the weight of those from NESA. The local population of Ringneck Snakes feeds almost entirely on earthworms, and there was relatively little size difference between those from different areas, but the quantity and availability of earthworm food changed somewhat from one area to another. The snakes were smallest in a House Field sample of 1973, with males averaging 5.0 grams and females 6.1 grams. The largest were from the Chester Fitch property and the Yelton Tract, with males averaging 6.6 grams and females 9.3 grams. Those from House Field averaged 73% of their weight. House Field in the 1990s averaged 87.9% and those from Quarry Field 89%.

Conclusions

Twenty-five local populations of five common snake species were compared for size (snout-vent length and weight) and most of them were significantly different from their nearest neighboring conspecifics. The most favored local populations averaged more than five times the weight of the smallest of their species. Food surplus may benefit only one sex, resulting in increased sexual size difference (e.g., small mammals such as *Microtus* may create an abundant food supply for female garter snakes, but are too large to be eaten by the males). In all cases, the local populations differing in size lived within 2 km of each other, except in the case of the Eastern Rat Snakes in a bank swallow colony (6.8 km removed from those at the Fitch Reservation).

Literature Cited


Table 1. Mean sizes (SVL in mm, weight in grams) of Eastern Rat Snakes from various areas in and near the Fitch Natural History Reservation, northeastern Kansas. SVL = snout-vent length; \( n \) = number of specimens sampled; M = male; F = female.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Sex</th>
<th>SVL</th>
<th>Weight</th>
<th>( n )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitch Natural History</td>
<td>M</td>
<td>1122±040.8</td>
<td>356.0±051.2</td>
<td>26</td>
</tr>
<tr>
<td>History Reserve</td>
<td>F</td>
<td>1066±031.1</td>
<td>312.0±017.9</td>
<td>36</td>
</tr>
<tr>
<td>NESA Yelton Tract</td>
<td>M</td>
<td>1216±075.7</td>
<td>509.0±016.4</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>1158±033.0</td>
<td>455.0±053.6</td>
<td>13</td>
</tr>
<tr>
<td>KU Nelson Tract</td>
<td>M</td>
<td>1108±050.8</td>
<td>373.0±060.6</td>
<td>21</td>
</tr>
<tr>
<td>NW Pens</td>
<td>F</td>
<td>1080±052.3</td>
<td>325.0±045.4</td>
<td>11</td>
</tr>
<tr>
<td>John Morgan Farm</td>
<td>M</td>
<td>1324±028.0</td>
<td>687.0±095.8</td>
<td>06</td>
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<tr>
<td></td>
<td>F</td>
<td>1086±050.5</td>
<td>434.0±059.0</td>
<td>05</td>
</tr>
<tr>
<td>KU Biotic Succession</td>
<td>M</td>
<td>1113±041.3</td>
<td>440.0±053.0</td>
<td>32</td>
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<tr>
<td>Area</td>
<td>F</td>
<td>1054±167.1</td>
<td>431.0±024.3</td>
<td>44</td>
</tr>
<tr>
<td>Chester Fitch Property</td>
<td>M</td>
<td>1262±067.5</td>
<td>640.0±108.0</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>1151±083.2</td>
<td>505.1±048.0</td>
<td>11</td>
</tr>
<tr>
<td>Brock-Ch Christie Pens</td>
<td>M</td>
<td>1430±037.1</td>
<td>884.0±061.5</td>
<td>08</td>
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<tr>
<td>Chicken Pens</td>
<td>F</td>
<td>1277±049.3</td>
<td>640.0±061.8</td>
<td>17</td>
</tr>
<tr>
<td>Kaw River Bank Swallow</td>
<td>M</td>
<td>1541±010.8</td>
<td>1164</td>
<td>06</td>
</tr>
<tr>
<td>Colony</td>
<td>F</td>
<td>1409</td>
<td>750</td>
<td>04</td>
</tr>
</tbody>
</table>

*Journal of Kansas Herpetology* Number 10 (June 2004)
Table 2. Sizes (SVL in mm, weight in grams) of populations of four species of snakes in and near the Fitch Natural History Reservation, northeastern Kansas. SVL = snout-vent length; \( n \) = number of specimens sampled; M = male; F = female.

<table>
<thead>
<tr>
<th>Species</th>
<th>Locality</th>
<th>Sex</th>
<th>SVL</th>
<th>Weight</th>
<th>( n )</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Agkistrodon contortrix</em></td>
<td>Fitch Nat Hist Rsvtn</td>
<td>M</td>
<td>629.4±12.0</td>
<td>148.6±16.4</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>592.1±10.8</td>
<td>137.2±13.1</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Biotic Succession Area</td>
<td>M</td>
<td>629.9±17.7</td>
<td>239.1±17.7</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>638.7±10.7</td>
<td>246.7±16.6</td>
<td>34</td>
</tr>
<tr>
<td><em>Coluber constrictor</em></td>
<td>House Field 1950s</td>
<td>M</td>
<td>762.0±14.6</td>
<td>088.9±04.9</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>844.1±26.0</td>
<td>134.9±10.8</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>NESA NW Pens 1990s</td>
<td>M</td>
<td>717.5±13.8</td>
<td>144.6±07.3</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>791.1±22.2</td>
<td>146.1±16.8</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Quarry Field</td>
<td>M</td>
<td>708.2±14.6</td>
<td>139.7±15.7</td>
<td>49</td>
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<tr>
<td></td>
<td></td>
<td>F</td>
<td>816.2±20.1</td>
<td>195.1±16.2</td>
<td>47</td>
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<tr>
<td></td>
<td>House Field 1977–84</td>
<td>M</td>
<td>691.6±11.8</td>
<td>111.9±05.2</td>
<td>58</td>
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<td></td>
<td></td>
<td>F</td>
<td>772.5±15.9</td>
<td>158.0±09.9</td>
<td>54</td>
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<tr>
<td></td>
<td>Road &amp; High Fields</td>
<td>M</td>
<td>698.1±24.2</td>
<td>085.6±08.6</td>
<td>18</td>
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<tr>
<td></td>
<td></td>
<td>F</td>
<td>732.9±22.7</td>
<td>125.6±12.9</td>
<td>19</td>
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<td></td>
<td>Chester Fitch Property</td>
<td>M</td>
<td>755.9±24.3</td>
<td>169.8±17.4</td>
<td>19</td>
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<td></td>
<td></td>
<td>F</td>
<td>856.8±35.2</td>
<td>227.0±25.1</td>
<td>16</td>
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<tr>
<td><em>Diadophis punctatus</em></td>
<td>House Fields 1990s</td>
<td>M</td>
<td>253.0±02.8</td>
<td>005.9±0.18</td>
<td>58</td>
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<tr>
<td></td>
<td></td>
<td>F</td>
<td>283.9±05.1</td>
<td>008.0±0.50</td>
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</tr>
<tr>
<td></td>
<td>NESA Yelton Tract</td>
<td>M</td>
<td>259.7±02.9</td>
<td>006.6±0.27</td>
<td>55</td>
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<tr>
<td></td>
<td></td>
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<td>301.3±02.2</td>
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<tr>
<td></td>
<td>Quarry Field</td>
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<td></td>
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<td>F</td>
<td>296.3±06.8</td>
<td>007.5±0.33</td>
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<td>House Field 1973</td>
<td>M</td>
<td>236.0±02.1</td>
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<td></td>
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<td>F</td>
<td>266.9±04.0</td>
<td>006.4±0.30</td>
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<tr>
<td></td>
<td>Chester Fitch Property</td>
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<td>006.4±0.30</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>281.3±04.9</td>
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<tr>
<td><em>Thamnophis sirtalis</em></td>
<td>House &amp; Quarry Fields</td>
<td>M</td>
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<td>037.1±01.9</td>
<td>41</td>
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<tr>
<td></td>
<td></td>
<td>F</td>
<td>599.9±06.4</td>
<td>105.0±07.8</td>
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<tr>
<td></td>
<td>NESA Northwest Pen Area</td>
<td>M</td>
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<td>056.0±06.6</td>
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<tr>
<td></td>
<td></td>
<td>F</td>
<td>627.0±15.3</td>
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<td>42</td>
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<td></td>
<td>NESA Biotic Succession Area</td>
<td>M</td>
<td>493.3±08.4</td>
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<td></td>
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<td>F</td>
<td>645.8±09.4</td>
<td>126.9±09.1</td>
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</table>
The Kansas Herpetological Society

The Kansas Herpetological Society 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 amphibians, turtles and reptiles in Kansas in particular; and to achieve closer cooperation and understanding between herpetologists, so that they may work together in common cause.

Membership

All interested persons are invited to become members in the Society. Membership dues per calendar year are $15.00 (U.S., Regular), $20.00 (Contributing) payable to the KHS. Send all dues to: KHS Treasurer (see inside front cover). All members are entitled to participate in Society functions, have voting privileges, and are eligible for Society grants and scholarships. They receive copies of the Journal of Kansas Herpetology, as well as other publications co-sponsored by the Society, either gratis or at a discount.

Editorial Policy

The Journal of Kansas Herpetology, issued quarterly, publishes peer-reviewed manuscripts and notes dealing with the biology of amphibians, turtles and reptiles. Manuscripts should be submitted to the Editor no later than the 10th 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. Pen and ink illustrations and photographs are also welcomed. Illustrations and photographs will be returned to the author only upon request. The Journal of Kansas Herpetology uses the common names standardized nationwide by Collins & Taggart (2002).

The Howard G. Gloyd-Edward H. Taylor Scholarship

The Gloyd-Taylor Scholarship is presented annually by the Kansas Herpetological Society to an outstanding herpetology student. Nominations for this award are open to any KHS member enrolled in an accredited educational institution in Kansas or any KHS member enrolled in an accredited educational institution outside of Kansas. The scholarship is $100.00 and is awarded on the basis of potential for contributing to the science of herpetology. Students from grade school through university are eligible.

Nominations should include typewritten details of the nominee’s qualifications, plus name and address of the nominee and nominator. Self-nomination is encouraged. If self-nominated, a letter of reference from an academician is required. Nominations should include, but are not limited to, academic record, herpetological activities, and future plans in herpetology. Academic record should address schools attended and an indication of academic performance in each (e.g., grade point average, teacher evaluations, courses completed). Herpetological activities should include a brief narrative that details experiences and activities that demonstrate a long-term interest in herpetology, and documents accomplishments in herpetological study. Future plans in herpetology should include a statement, not to exceed one-page, written by the student about his/her future interests and plans.

Applicants may include an optional appendix with photographs, awards, newspaper articles, reports written by the student, or other documents relevant to herpetological activities.

Nominations should be sent to the KHS Awards Committee Chair, and must be postmarked by 15 September. The scholarship winner will be announced at the annual meeting in November. New applications will be accepted after 1 January of the following year.

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. The recipient of the grant (minimally $100.00) will be selected by the KHS Awards Committee. If no qualified proposals are submitted, no award will be made for that year.

The KHS Awards Committee will entertain proposals for research on Kansas snakes. The proposal must be limited to ten typed pages, and should include, but not be limited to the following: title, name of researcher, contact information, abstract, introduction and justification, objectives or hypotheses, materials and methods, significance of research and possible results, literature cited, timetable, and proposed budget. The research must be conducted on one or more native Kansas snake species. Additionally, a majority of the field work or observations must be proposed to occur in Kansas, or the data must be proposed to be collected, at least in part, on Kansas specimens.

Proposals should be sent to the KHS Awards Committee Chair, and must be postmarked by 15 September. The grant recipient will be announced at the annual meeting in November. New applications will be accepted after 1 January of the following year.

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

The Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology and/or presented a lecture of academic excellence on the systematics, ecology, or conservation of a native species of Kansas amphibian, turtle, and/or reptile in the Journal of Herpetology, and/or presented a lecture of excellence on the systematics, ecology, or conservation of a native species of Kansas amphibian, turtle, and/or reptile at the KHS Annual Meeting. To qualify for the Award, the art work must portray a species native to Kansas.

The Collins Award is minimally $1000.00, and is neither a grant nor a scholarship. No nominations or applications can be made for it.