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Front Cover: The eggs of an Eastern Narrowmouth Toad *(Gastrophryne carolinensis)* from Cherokee County, Kansas. Photograph by Suzanne L. Collins, CNAH, Lawrence, Kansas.

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KHS 2008 SPRING FIELD TRIP

The 2008 Spring KHS Field Trip will be held at Lake Parsons, a 1,000 acre lake in south-central Neosho County, Kansas. KHS members will gather as early as Friday evening (25 April 2008) at Lake Parsons at the location displaying a large KHS sign.

Restaurants and motels are available in nearby Parsons (just to the south on US Rt. 59 in Labette County). Maps and other information will be available at the campsite each day at 9:00 am.

Facilities at Lake Parsons consist of campsite pads without electricity ($5.00), with electricity ($12.00 per day); showers are available; and there is no charge for camping in the primitive area (opposite side of lake from KHS main campsite).

KHS herpetofaunal counts will officially take place from 9:00 am to 5:00 pm on Saturday (26 April 2008) and on Sunday (27 April 2008) from 9:00 am to noon. Individuals wishing to participate should meet at the KHS sign at Lake Parsons on both dates at 9:00 am.

Herping opportunities abound at Lake Parsons and in the surrounding vicinity. Outside of the Neosho State Fishing Lake, the area is largely unexplored, herpetologically, and offers the chance to produce several significant additions to our understanding of amphibain, reptile, and turtle distributions and natural history in southeast Kansas.

Dan Murrow has several activities planned, and will be directing us to several sites that offer prime herping habitat. Several turtle traps will be set at strategic locations and participants will get to assist in setting them up.

Important Records for Lake Parsons and Vicinity

(area of map on facing page)

FROGS

Cajun Chorus Frog - Not recorded
Crawfish Frog - Always a good find
Fowler's Toad - Not recorded
Great Plains Narrowmouth Toad - Not recorded
Spotted Chorus Frog - Not recorded
Spring Peeper - An unsubstantiated record from near the Neosho River east of Parsons exists, but has not been verified
Woodhouse's Toad - Not recorded

SALAMANDERS

Eastern Tiger Salamander - Not recorded
Hellbender - KU 23283, Labette County, Neosho River, 8 miles west of McCune!? Record is suspect
Red River Mudpuppy - Not recorded
Smallmouth Salamander - Not recorded

TURTLES

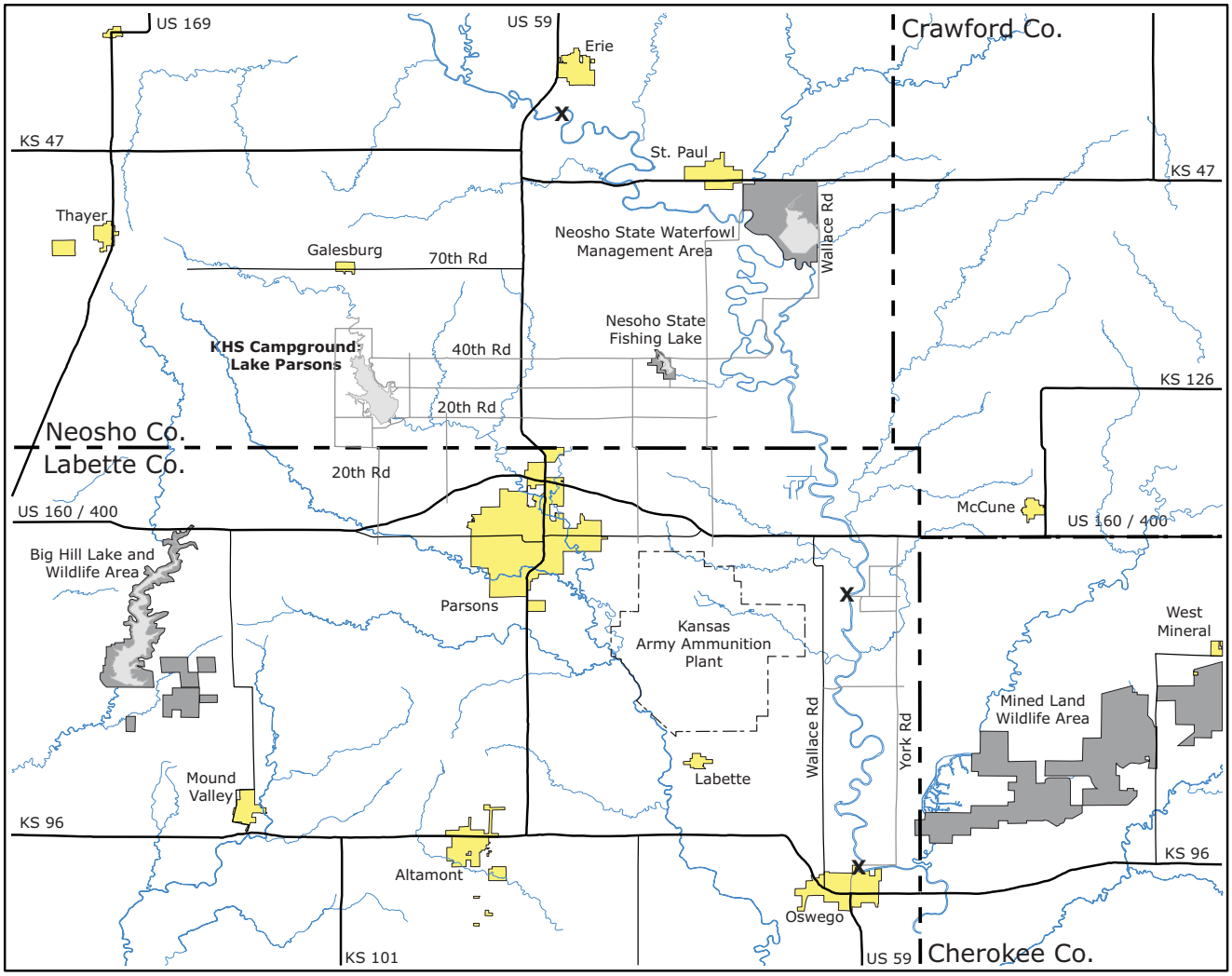
Alligator Snapping Turtle - The area is in the center of several historic records. Known from Labette Creek (which flows from Lake Parsons)
Common Map Turtle - Not recorded
Common Musk Turtle - Not recorded
Northern Painted Turtle - Not recorded
Ornate Box Turtle - Not recorded
Smooth Softshell - Not recorded
Spiny Softshell - Not recorded

LIZARDS

Broadhead Skink - Another isolated record at Neosho State Fishing Lake
Eastern Collared Lizard - Not recorded
Prairie Lizard - Would be an incredible find
Great Plains Rat Snake - Not recorded
Great Plains Skink - No recent records
Ground Skink - Isolated record at Neosho State Fishing Lake Coal Skink - Isolated record at Neosho State Fishing Lake
Northern Prairie Skink - Not recorded
Six-lined Racerunner - Few records
Western Slender Glass Lizard - Not recorded
Texas Horned Lizard - Not recorded

SNAKES

Bullsnake - Not recorded
Brown Snake - Conspicuously absent from much of the Neosho River Drainage. Known from one specimen collected near the Neosho Waterfowl Refuge
Coachwhip - See Prairie Lizard above
Common Kingsnake - Only one specimen (6 mi W McCune; 1954)
Copperhead - Only one specimen recorded (3 mi W St. Paul; collected 1949)
Eastern Hognose Snake - Not recorded
Flathead Snake - Not recorded
Graham's Crayfish Snake - Only recorded from just below the low-flow dam on the Neosho River 2 mi south of US 160/400
Lined Snake - Not recorded
Massasauga - Not recorded
Milk Snake - Only one specimen (1 mi S, 2 mi E Erie) Good Luck
Ringneck Snake - Only known from the vicinity of Neosho State Fishing Lake
Racer - Not recorded
Redbelly Snake - Not recorded. Any discovery of this secretive snake in Kansas should be reported
Timber Rattlesnake - Not recorded (improbable)
Western Worm Snake - Known only from 3.7 mi W St. Paul and Big Hill Lake



Map of Lake Parsons and vicinity, showing US and KS highways, other well-maintained roads with river crossings, county and municipality boundaries, major rivers and streams, and KDWP managed properties in gray. Low-water or low-flow dams on the Neosho River with public access are indicated by three X's.

KHS Field Trips are an excellent opportunity for both students and adults to observe and learn field techniques by watching experienced herpetologists actively search for amphibians, turtles, and reptiles.

Dan Murrow, Mary Kate Baldwin, Dan Johnson, Eric Kessler, Dan Carpenter, Derek Schmidt, Larry L. Miller, Curtis J. Schmidt, Travis W. Taggart, Joseph T. Collins and many others have engaged in herpetological field work in Kansas for decades; most of them will be present at these KHS fields trips to assist people interested in learning how to find salamanders, frogs and toads, turtles, lizards, and snakes. In addition, well-known herpetological photographers such as Andy Durbin, Larry L. Miller, Suzanne L. Collins, and Ginny Weatherman are usually present at KHS field trips; they can supply you with tips and advice on how to photograph many of the creatures collected on a KHS field trip.

If you plan to attend the KHS Spring Field Trip, be prepared. You should minimally have heavy gloves, hiking boots, and a flashlight. In addition, it is useful to have a field notebook and pen or pencil. Field notes are very important and provide much additional information about your field activities, information that you might need to resource in the future. Other field items that will improve your KHS experience are bottled water and snacks; remember, you are often not near any grocery stores or fast-food outlets. Maps, such as the one accompanying this article (above) are an important adjunct to any field trip. If you don't want to bring this issue of the *Journal of Kansas Herpetology* with you, make a copy of this page and don't forget it.

KANSAS HERPETOLOGICAL SOCIETY
Annual Financial Report 2007

Bank Statement 1 January 2007..... $10,522.19

Income
Membership Dues
Regular.....$1,815.00
Contributing.....$640.00
International.....$20.00
Total.....$2,475.00
Annual Meeting
Registration.....$1,275.00
Auction.....$1,306.00
Sponsors..... $1,000.00
Sale of T-Shirts.....$640.00
Total.....$4,221.00
Donations.....$1,030.00
Interest from Endowed Funds.....$319.95

Total Income.....$8,045.95

Expenses
Annual Meeting..... $2,850.94
The Collins Award..... $1,000.00
Second Place Photo Award.....$100.00
Third Place Photo Award.....$50.00
The Kamb Grant.....$150.00
The Gloyd/Taylor Scholarship..... $125.00
Office of the Secretary/Treasurer..... $108.22
Office of the Editor.....$410.00
Journal of Ks Herpetology (4 issues).....$2,294.00
KHS Award Expenses..... $414.57
Additions to The Kamb Grant.....$3,400.00
Additions to The G/T Scholarship..... $3,400.00

Total Expenses.....$14,302.73

Bank Statement 31 December 2007..... $4,265.41

Endowed Funds
Alan H. Kamb Grant..... $7,400.00
Gloyd/Taylor Scholarship.....$7,000.00
Total in Endowed Funds.....$14,400.00

Total Assets..... $18,665.41

Respectfully submitted,
Mary Kate Baldwin, Secretary
Eric Kessler, Treasurer

The KHS Executive Council and Committee Chairpersons met on 10 February 2008 in Wichita, Kansas, to present their reports and prepare the annual budget. Standing L-R: Eric Kessler, Robin Oldham, Daniel G. Murrow, Dan Carpenter, Mary Kate Baldwin, and Dan Johnson. Seated: Suzanne L. Collins and Joseph T. Collins.

KANSAS HERPETOLOGICAL SOCIETY
Minutes of the Executive Council Meeting
Noon, 10 February 2008
River City Brewery, Wichita, Kansas

Present: Mary Kate Baldwin, Joe Collins (proxy for Travis Taggart), Suzanne Collins, Dan Johnson, Eric Kessler, Dan Murrow, Robin Oldham, and Dan Carpenter presiding.

Call to order: KHS President Dan Carpenter called the meeting to order at 12:15 am.

KHS Financial Report for 2007

KHS Treasurer Eric Kessler and KHS Secretary Mary Kate Baldwin submitted a report showing an end of year balance of $18,665.41 (including the Kamb and Gloyd-Taylor trust funds). The balance reflects an increase of $543.22 (after all invoices were paid) over last year. Membership for 2007 was 203. Unallocated funds from the KHS treasury were added to the Kamb Grant and Gloyd-Taylor Scholarship trust funds, increasing their net worth. The trust funds were increased as follows:

Kamb Grant from $4,000.00 to $7,400.00
Gloyd-Taylor from $3,600.00 to $7,000.00

Summary of 2007 Meeting Income & Expense

KHS Secretary Mary Kate Baldwin reported all expenses from the 2007 annual meeting as paid. The cost of the meeting was approximately $1,600.00. More than half of the meeting expenses were paid from private donations raised by 2007 KHS president Ginny Weatherman. Joe Collins raised $1,385.00 at the KHS auction.

Budget Request by JKH Editor

Joe Collins, JKH Associate Editor, requested an allocation of $2,400.00 to cover the cost of publishing and mailing four issues of the Journal of Kansas Herpetology for 2008. It was moved and seconded (S.Collins/Kessler) to authorize the request. Motion was approved.

Budget Request & 2008 Annual Meeting Report

KHS president Dan Carpenter reported that he, Joe Collins, and Suzanne Collins met with Alan Maccarone of Friends University late last year. They did a walk through of the facilities. Alan was very welcoming and offered all the services available for the meeting. The meeting will be held in the auditorium in the science building. Dan Carpenter has already received a pledge from private sponsors of $600.00 toward meeting costs. The Council suggested an additional $1,000.00 from the treasury toward the cost of the 2008 meeting. It was moved and seconded (S. Collins/Baldwin) to authorize the $1,000.00 request. Motion was approved.

Dan Carpenter is working with Joe Collins to identify a keynote speaker for the annual meeting. The year 2008 will be the 35th anniversary of KHS. It was suggested that something special be offered to the members, either as a token gift or as something to purchase. Dan Johnson offered to investigate the cost of producing snake bags and field gloves with the KHS logo. Robin Oldham will produce more Herp Hero cards and will see if she can get amphibian cards from the American Association of Zoos & Aquariums. Other suggestions included field notebooks, stickers, magnetic logos, and pens all with the KHS logo. Suzanne Collins will investigate prices and email the KHS Executive Council. Dan Carpenter will see if the Friends Biology Club would be willing to help with meeting details including staffing a live exhibit room and morning refreshments. Robin Oldham offered to organize the photo competition during 2009 so the voting process is easier and submissions are marked appropriately.

Critique of the 2007 Annual Meeting

It was suggested that it would be nice to have a space for attendees to gather between sessions. It was noted that Eric Kessler must have a dedicated phone line for credit card charges. Dan Carpenter will confirm power point availability and this information will be added to the webpage to help speakers prepare.

Critique of 2007 Field Trips & Budget Request

KHS Field Trip Chairperson Dan Murrow reported that the 2007 field trips had outstanding attendance and everyone seemed to enjoy the events. Eric Kessler offered to publicize future field trips on the Kansas Association of Biology Teachers website. It was suggested that Dan Murrow distribute KHS brochures with the hope that some attendees will join. He will also handle the sign in sheets. Robin Oldham will

continue to write her excellent press releases and Joe Collins will assemble (using data from Dan Murrow) and organize the final field trip herpetofaunal counts for publication in JKH.

It was moved and seconded (S. Collins/ Baldwin) to reimburse Dan Murrow $100.00 for travel expenses incurred in 2007. It was also moved and seconded (J.Collins/Baldwin) to reimburse Dan Murrow $150.00 for travel expenses he anticipates in 2008. Dan will keep receipts to document his expenses.

Report of the KHS Historian

Suzanne Collins continues to collect and organize materials received. She asked that any newspaper articles mentioning KHS be sent to her. She also asked that photos could be sent via email or on CDs provided they are jpegs or tiffs. A general announcement will be made at the annual meeting.

Report of the Nominating Committee

Joe Collins reported that the committee has not yet met but will be in contact soon.

Report of Media and Publicity

Robin Oldham asked for story lines so she can submit articles to newspapers. One suggestion was the recent release of Black-footed Ferrets in western Kansas and how this might impact the herpetofauna of that area.

KHS Budget Commitments for 2008*

Journal of Kansas Herpetology.....$2,400.00
Annual Meeting..... $1,000.00
Field Trip Expenses.....$150.00
Total..... $3,550.00
*Does not include expenses for 35th Anniversary Meeting items to be determined later.

New Business:

The George Toland Award

On behalf of *The Center for North American Herpetology,* Joe Collins informed the KHS Executive Council that The George Toland Award was funded at $100.00 per year for the next four years; he suggested that the award be made at KHS annual meetings. The KHS Executive Council will decide whether and how to do this by the annual meeting in November.

The next KHS Executive Council meeting will be in early October at the KHS Fall Field Trip.

Meeting was adjourned at 2:30 pm.

Respectfully submitted,
Suzanne Collins

KHS WEB SITE

KHS members should avail themselves of the Society web site, the most up-to-date state herpetological web site on the internet, worldwide. Take advantage of these gratis services:

A complete modern checklist of the herpetofauna of Kansas (updated daily)

Gratis downloads of the first 20 issues of the *Journal of Kansas Herpetology*

Watch as the annual meeting program evolves before your very eyes

Field trip information (updated daily)

Complete current contact information on all KHS officers and committee chairpersons. Go to

http://www.cnah.org/khs/

and keep up-to-date.

KHS DONORS

Few tributes are so lasting or honor individuals so well as donations. The Kansas Herpetological Society is privileged to carry on the aims and goals of the Society through its grants and scholarships. This list recognizes donations received through 1 March 2008.

The Alan H. Kamb Grant
for Research on Kansas Snakes

Calvin L. Cink
Baker University

The Howard Kay Gloyd-
Edward Harrison Taylor Scholarship

Janine Walters
Topeka, Kansas

OF INTEREST

KHS MEMBERS DESCRIBE NEW U.S. FROG

Original description (officially published 9 January 2008): A New North American Chorus Frog Species (*Pseudacris:* Hylidae: Amphibia) from the South-Central United States. Authors: Emily M. Lemmon (KHS Member), Alan R. Lemmon, Joseph T. Collins (KHS Member), and David C. Cannatella. Journal where published: Zootaxa 1675: 1-30 (2008).

A new North American chorus frog has been discovered and officially described in the journal Zootaxa. Dubbed the Cajun Chorus Frog by its discoverer's, the small one-inch amphibian is known from western Mississippi, all of Louisiana and Arkansas, eastern Texas and Oklahoma, and extreme southern Missouri (Ripley County). It ranges to within a few miles of the Kansas border in eastern Oklahoma. The new species has a distinct call, distinct appearance, and is distinct genetically based on analysis of DNA evidence. The scientific name of this new chorus frog is *Pseudacris fouquettei* (pronounced *sue-day-kris, foe-kett-tie*), named for Martin J. Fouquette, a retired professor of biology and well-known herpetologist at Arizona State University, whose earlier research on these amphibians paved the way for those that followed.

The last new species of frog discovered in the United States was the Florida Bog Frog *(Rana okaloosae),* officially described as new to science in 1985 by Paul E. Moler, and recognized today as distinct. [Editor's Note: Arizona's Ramsey Canyon Leopard Frog *(Lithobates subaquavocalis)* was described as new in 1993 by James Platz, but has since been synonymized (using DNA evidence) with the Chiricahua Leopard Frog *(Lithobates chiricahuensis)*.]

A color image by Suzanne L. Collins of the new Cajun Chorus Frog may be viewed on the CNAH web site at

http://www.cnah.org/

A gratis PDF of the article is posted on the CNAH PDF Library at

http://www.cnah.org/cnah_pdf.asp

ROSY BOAS RE-ARRANGED

Novel Patterns of Historical Isolation, Dispersal, and Secondary Contact Across Baja California in the Rosy Boa *(Lichanura trivirgata).* 2008. Molecular Phylogenetics and Evolution 46: 484-502, by Dustin A. Wood, Robert N. Fisher and Tod W. Reeder.

Editorial Note: Lichanura trivirgata (Cope, 1861) retains the standard common name Mexican Rosy Boa (most of its range is in Mexico); the newly resurrected *Lichanura orcutti* (Stejneger, 1889), found in both the Sonoran Desert and Mojave Desert of the southwestern United States, becomes the Desert Rosy Boa. Recognition of the taxa *gracia, roseofusca, myriolepis,* and *saslowi* (all formerly recognized as subspecies of *L. trivirgata* in Mexico and/or the United States) is not supported and they are relegated to the synonymy of *Lichanura trivirgata.*

A gratis PDF of this article is available from the CNAH PDF Library at

http://www.cnah.org/cnah_pdf.asp

KHS MEMBER RECEIVES DOCTORATE

KHS member Keith Coleman, well known to fellow members of the Kansas Herpetological Society for his anuran recordings on the cassette tape, *The Calls of Kansas Frogs and Toads,* successfully defended his doctoral dissertation. Dr. Coleman's thesis topic was *The Logical Problem of Identity.* He will formally receive his PhD in graduation ceremonies at the University of Kansas in Lawrence this coming May 2008. Currently, he teaches at Johnson County Community College and works at the Lawrence Prairie Park Nature Center.

Keith is also well known for his work on amphibian distributions in eastern Kansas, particularly the range of the Spring Peeper, *Pseudacris crucifer,* a threatened species in the state. He continues in his attempts to discover this anuran in southern Johnson County, Kansas, a long-standing goal. The type locality for this frog is Leavenworth County, Kansas, just to the north.

CANE TOAD CHANGE

A New Species of Arboreal *Rhinella* (Anura: Bufonidae) from Cloud Forest of Southeastern Peru. 2007. Herpetologica 63(2): 203-212, by Juan Carlos Chaparro, Jennifer B. Pramuk & Andrew G. Gluesenkamp.

Abstract: A new arboreal species of *Rhinella* is described from the humid montane forest of Manu National Park in the Cordillera Oriental of southern Peru. The new species can be distinguished from all known *Rhinella* by a unique combination of external and osteological characters as well as by molecular data. The new toad is compared to *R. arborescandens* and *R. veraguensis* with respect to external characters. On the basis of morphological and molecular data, the new taxon is closely related to *R. chavin, R. nesiotes,* and *R. festae.* Although DNA data indicate that a member of the *R. veraguensis* group *(R. nesiotes)* is its sister taxon, the new species is not closely related to other members of this species group (e.g., *R. veraguensis*). In addition, DNA data indicate that the *R. veraguensis* group as it currently is defined is paraphyletic. Until additional studies are completed on the phylogeny of these South American toads, we refrain from assigning the new taxon to a species group.

A gratis PDF of this article is available from the CNAH PDF Library at

http://www.cnah.org/cnah_pdf.asp

Editorial Note: Buried within this excellent paper is a taxonomic change of broader importance to herpetologists in North America (and worldwide). The wide-ranging Cane Toad, formerly placed in the genus *Chaunus* Wagler, 1828, is now placed in the genus *Rhinella* Fitzinger, 1826. Standard common name for *Rhinella marina* (note the new emendation for the specific name) remains the Cane Toad.

ENDANGERED FROG ENDED

Conservation Implications of a Morphometric Comparison Between the Illinois Chorus Frog *(Pseudacris streckeri illinoensis)* and Strecker's Chorus Frog *(P. s. streckeri)* (Anura: Hylidae) from Arkansas, Illinois, Missouri, Oklahoma, and Texas. 2007. Zootaxa 1589: 23–32, by J. B. Trauth, R. L. Johnson & S. E. Trauth.

Abstract: Much uncertainty exists regarding the taxonomic status of the Illinois Chorus Frog (*Pseudacris streckeri illinoensis* Smith; ICF) relative to Strecker's Chorus Frog (*P. s. streckeri,* Wright & Wright; SCF) of the south-central United States (US). Molecular analyses have been inconsistent in providing taxonomic insight, and no formal morphological comparisons have been previously performed. Each taxon possesses a wide range of background colors. We undertook morphometric analyses to help clarify their taxonomic relationship. Tibia length and mass were compared for live Arkansas (AR) specimens and snout-vent, head and tibia lengths were measured from preserved vouchered specimens. Tibia length and mass were significantly greater for living ICFs versus SCFs in AR. Among preserved specimens, tibia, snoutvent and head lengths were significantly greatly for AR ICFs relative to most intraspecific groups, and Texas (TX) SCFs were significantly smaller than most other groups. Principal components analysis was largely consistent with univariate analyses, although Missouri (MO) ICFs also partitioned distinctly from other sample groups. These data provide morphological evidence of geographic (clinal) variation within a species, but do not provide support for the taxonomic elevation of the ICF to species status. Our data do provide evidence of distinct population segments of P. streckeri. As ICF habitat suitable for reproduction has dramatically declined in Arkansas as have population numbers, we recommend the listing of AR ICFs as a distinct population segment under the Endangered Species Act.

A gratis PDF of this article is available from the CNAH PDF Library at

http://www.cnah.org/cnah_pdf.asp

Editorial Note: The above analysis, along with those of Moriarty and Cannatella (2004) and Lemmon et al. (2007), convincingly demonstrate that *Pseudacris streckeri illinoensis* is not a distinct taxon (either as a subspecies or species), confirming the earlier contention of Collins (1991. Herpetol. Review 22: 42-43) that this taxon was either a distinct species or (by implication) should not be recognized at all. The allopatric populations of this frog in S Illinois, SE Missouri, and NE Arkansas are simply isolated colonies of the monotypic species *Pseudacris streckeri.*

NOTES

NEW RECORDS OF AMPHIBIANS, REPTILES, AND TURTLES IN KANSAS FOR 2007

Joseph T. Collins

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The five new county records and two maximum size records listed below are those accumulated or brought to my attention since the publication of records for 2006 (Collins, 2007). Publication of these new records permits me to give credit and express my appreciation to the many individuals who collected or obtained specimens and donated them to me for deposition in an institutional collection. Further, recipients of this list are permitted an opportunity to update the range maps and size maxima sections in Amphibians and Reptiles in Kansas Third Edition (Collins and Collins, 1993). Finally, these new records represent information that greatly increases our knowledge of the distribution and physical proportions of these creatures in Kansas, and thus gives us a better understanding of their biology. This report is my 33rd in a series that has appeared annually since 1976, and the data contained herein eventually will be incorporated into my new forthcoming book, *Amphibians, Reptiles, and Turtles in Kansas.*

The Kansas specimens listed below represent the first records for the given county based on a preserved, cataloged voucher specimen in an institutional collection, or represent size maxima larger than those listed in Collins and Collins (1993). Any information of this nature not backed by a voucher specimen is an unverifiable observation. All new records listed here are presented in the following standardized format: standard common and current scientific name, county, specific locality, date of collection, collector(s), and place of deposition and catalog number. New size maxima are presented with the size limits expressed in both metric and English units. Common names are those now standardized for North America, as compiled by Collins & Taggart (2002), and are given at the species level only.

The records listed below are deposited in the herpetological collection of the Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas (MHP) and the Museum of Natural History, University of Kansas (KU). I am most grateful to the members of the Kansas Herpetological Society, and to the staff of the Kansas Department of Wildlife and Parks and the Kansas Biological Survey, who spent many hours in search of some of the specimens reported herein. Some of the records contained herein resulted from field studies sponsored by funds from the Kansas Department of Wildlife and Parks' Chickadee Checkoff Program. Travis W. Taggart and Curtis Schmidt, Sternberg Museum of Natural History, Fort Hays State University, diligently assigned catalog numbers to most of the specimens listed below, and to them I am most indebted.

NEW COUNTY RECORDS

BULLFROG *(Lithobates catesbeianus)*
Osborne Co: N39.24951, W98.87107. 13 August 2006. Collector: Curtis J. Schmidt. MHP 12485. Verified by Travis W. Taggart. Reported by Schmidt (2007).

SLIDER *(Trachemys scripta)*
Pottawatomie Co: N39.22786, W96.52864. 7 October 2006. Collector: Jeremiah Teller. MHP 13477. Verified by Joseph T. Collins. Reported by Teller (2007).

SLIDER *(Trachemys scripta)*
Wallace Co: N38.96842, W102.01799. 9 July 2007. Collectors: Suzanne L. Collins, Joseph T. Collins, Curtis J. Schmidt & Travis W. Taggart. MHP 13688. Verified by Joseph T. Collins. Reported by Suzanne L. Collins (2007).

PRAIRIE KINGSNAKE *(Lampropeltis calligaster)*
Rush Co: N38.53805, W99.05465. 15 April 2006. Collector: Brian C. Bartels. MHP 13640. Verified by Curtis J. Schmidt. Reported by Bartels (2007).

COMMON GARTER SNAKE *(Thamnophis sirtalis)*
Cheyenne Co: N39.99622, W101.74483. 4 October 2007. Collectors: Curtis J. Schmidt & Kendra L. Phelps. MHP 13686. Verified by Brian C. Bartels. Reported by Schmidt and Phelps (2007).

NEW MAXIMUM SIZE RECORDS

WESTERN WORM SNAKE *(Carphophis vermis)*
Jefferson Co: SE corner Sec. 32, T11S, R20E. 19 March 2007. Collector: George R. Pisani. MHP Color Slide 13479. Verified by Travis W. Taggart. Total length = 374 mm (14 3/4 inches). Female. Reported by Pisani (2007).

SMOOTH EARTH SNAKE *(Virginia valeriae)*
Jefferson Co: SE corner Sec. 32, T11S, R20E. 29 March 2007. Collector: George R. Pisani. MHP Color Slide 13478. Verified by Curtis J. Schmidt. Total length = 358 mm (14 3/16 inches). Female. Reported by Pisani (2007).

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✳

GREEN IGUANA *(IGUANA IGUANA)* COLONY BURROW DENSITY IN FLORIDA. South Florida's subtropical climate has allowed colonization by a remarkable suite of exotic species (Simberloff et al. [eds.], Strangers in Paradise, Island Press, Washington, D.C.), and exotic as well as native vertebrate deteriogens frequently reach astounding densities here (Smith et al. 2007a. Jour. Kansas Herpetol. 21: 19-20; Smith and Engeman 2002. Canadian Field-Nat. 116: 636-639). *Iguana iguana* is a very well established exotic species in Florida (Meshaka et al. 2004. The Exotic Amphibians and Reptiles of Florida. Krieger Publishing Co., Malabar, Florida. 155 pp.; Meshaka et al. 2004b. Iguana 11: 154-161; Smith et al. 2006. Journ. Kansas Herpetol. 20: 7-8; Smith et al. 2007a. Journ. Kansas Herpetol. 21: 19-20; Smith et al. 2007b. Journ. Kansas Herpetol. 22: 14-16).

Very high *Iguana iguana* colony densities have recently been reported for Florida, reaching as high as 626.6 lizards/km^2 (Smith et al. 2006 op. cit.; Smith et al. 2007a op. cit.). However, accompanying Green Iguana burrow densities in Florida have not yet been calculated/reported. Concomitantly, strong concerns have been expressed that invasive Green Iguanas at high densities burrowing along canals and levees in and around the Florida Everglades present a very real and serious hazard to surface water control earthen infrastructure, especially during hurricanes (Sementelli et al. *in press.* Public Works Management and Policy). These same authors likewise evaluated the economics of Green Iguana burrow repairs, infrastructure maintenance, and made policy recommendations (Sementelli et al. op. cit.).

A high density Green Iguana colony was recently discovered on a canal levee in Sunrise, Broward County, Florida and a thorough field survey of the colony for burrows was conducted on 6 July 2007. A total of 60 burrows were discovered within the 16 ft. (4.9 m) by 225 ft. (68.6 m) levee area. This equates to an astounding density of 1,794 burrows per hectare. Sixteen of the burrows were 14 to 18 inches (35.6 to 45.7 cm) in diameter.

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ARTICLES

Amphibians and Reptiles of Powdermill Nature Reserve in Western Pennsylvania

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Abstract: A combination of museum specimens and field observations was used to provide a list of, and evaluate the status of, the herpetofauana on Powdermill Nature Reserve (PNR), a field station of Carnegie Museum of Natural History located in the Allegheny Mountains of western Pennsylvania. Thirty-nine species of amphibians and reptiles occur on the station, and nine additional species are known from surrounding areas of Westmoreland County, exclusive of PNR. Reasons for these differences in occurrence are noted and apparent changes in abundance commensurate with vegetational succession since the acquisition of the station in 1956 are discussed.

Introduction

Powdermill Nature Reserve (PNR) is an 890.3 ha field station located in the Laurel Ridge of the Allegheny Mountains in Westmoreland County of western Pennsylvania. PNR was founded in 1956 by Dr. M. Graham Netting, herpetologist and Director of the Carnegie Museum of Natural History, Pittsburgh. The initial gift of 469.4 ha (1160 acres) that year brought Netting's dream of a protected long-term research field station into reality. The Reserve now encompasses 890.3 ha (2200 acres) of mixed forests, fields, ponds, and streams located in the Ligonier Valley southeast of Pittsburgh. Netting's goal in establishing the Reserve was to provide Museum scientists and researchers from other institutions a permanent area for long-term studies of ecosystems and the flora and fauna comprising them. In addition to being a wild area for natural history research the Reserve was to provide a venue for natural history education.

In 1961, PNR initiated what is now one of the longest continuous running bird banding programs in the country. Herpetologically, a demographic study of the Wood Turtle (*Glyptemys insculpta*) and Eastern Box Turtle (*Terrapene carolina*) has been in progress since 1960. The single greatest change to the landscape of PNR since its founding has been a gradual succession from farmland to mixed deciduous forest. Using the Museum collection records dating back to 1956, we present a list of amphibian and reptile species from PNR and relate their presence or absence to that of the surrounding county and to observed shifts over time on the Reserve.

Materials and Methods

Records represent species presence based upon vouchered specimens from the collections of Carnegie Museum of Natural History or the State Museum of Pennsylvania, Harrisburg. Reports represent species presence based upon in the field sightings only. The Species Account is presented in the order of frogs and toads, salamanders, lizards, snakes, and turtles. Within each taxonomic group, spe-

Figure 1. Crisp Pond located on the Powdermill Nature Reserve in western Pennsylvania. Photograph by Hope Carpenter.

cies are listed in alphabetical order. Scientific names follow the most recent taxonomic revisions, and common names follow Collins and Taggart (2001).

Results

Frogs and Toads

1. American Toad *Anaxyrus americanus* (Holbrook, 1836). Museum records for the American Toad exist for 1956, 1957, 1959, 1962, 1965, 1981, 1982, 1983, 1984, and 2006. This species was reported on the Reserve in 2002 (Colt, 2004). Common on the Reserve (RCL, pers. obs), it is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

2. Mountain Chorus Frog *Pseudacris brachyphona* (Cope, 1889). Museum records for the Mountain Chorus Frog exist for 1956-1958 and 1963. The Powdermill population is apparently now extirpated. It is known from the surrounding Westmoreland County area (Hulse et al., 2001).

3. Spring Peeper *Pseudacris crucifer* (Wied-Neuwied, 1838). Museum records for the Spring Peeper exist for 1957, 1958, 1961, and 1982-1984. This species was reported on the Reserve in 2002 (Colt, 2004). The Spring Peeper is abundant in wet areas throughout the Reserve. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

4. Bullfrog *Lithobates catesbeianus* Shaw, 1802. Museum records for the Bullfrog exist for 1983, 1985, and 2007. This species was reported on the Reserve in 2002 (Colt, 2004). A large and common species at PNR, males have been heard calling from Crisp Pond (Figure 1) during June-August (WEM, pers. obs.), and the species is common in other small ponds on the reserve. The Green Frog was the subject of a several year toe-clipping study by Dr. Steve Roble during the mid-1980s in the Crisp Pond complex. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

5. Green Frog *Lithobates clamitans* Latreille, 1801. Museum records for the Green Frog exist for 1956, 1960, 1962, 1982-1984, and 2007. This species was reported on the Reserve in 2002 (Colt, 2004). Males have been heard calling from Crisp Pond during June-August (WEM, pers. obs.). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

6. Pickerel Frog *Lithobates palustris* LeConte, 1825. Museum records for the Pickerel Frog exist for 1956-1959, 1982-1984, 2006. This species was reported on the Reserve in 2002 (Colt, 2004). Individuals were seen foraging during the day in July 2007 (WEM, pers. obs.). The Pickerel Frog was the subject of a multi-year toe-clipping study by Dr. Steve Roble during the mid-1980s in the Crisp Pond complex. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

7. Wood Frog *Lithobates sylvaticus* LeConte, 1825. Museum records for the Wood Frog exist for 1957, 1961, 1964, 1968, 1982-1985, and 2002. This species was reported on the Reserve in 2002 (Colt, 2004). Individuals can be found near several small ponds on the Reserve (RCL). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

Salamanders

8. Spotted Salamander *Ambystoma maculatum* (Shaw, 1982). Museum records for the Spotted Salamander exist for 1983, 1984, and 2003. This species was reported on the Reserve in 2002 (Colt, 2004). This species is an uncommon resident and found at a few vernal ponds on the Reserve. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

9. Eastern Hellbender *Cryptobranchus alleganiensis* (Daudin, 1803). No museum records of the Eastern Hellbender exist for PNR; however, a report exists by M.G. Netting regarding a large individual that was seen routinely under a large stone slab in Powdermill Run during the 1960s. This species has been seen several times in recent years, including a recent report of it by T.G. Rohall and by Roger Conant in Powdermill Run behind the Nature Center. The former sighting occurred on 22 May 1994 under a large flat stone in the stream channel behind Cabin #3. A single individual was seen and measured 43.2 cm in total length. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

10. Northern Dusky Salamander *Desmognathus fuscus* (Rafinesque, 1820). Museum records for the Northern Dusky Salamander exist for 1957, 1962, 1978, 1979, 1981-1984, 2002, 2006, and 2007. This species was reported on the Reserve in 2002 (Colt, 2004). This species is easily encountered close to the water of streams on the Reserve. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

11. Seal Salamander *Desmognathus monticola* Dunn, 1916. Museum records for the Seal Salamander exist for 1956, 1966, 1978, 1979, 1982, 1984, and 2006. This species was reported on the Reserve in 2002 (Colt, 2004). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

12. Allegheny Dusky Salamander *Desmognathus ochrophaeus* Cope, 1859. Museum records for the Allegheny Dusky Salamander exist for 1956-1958, 1978, 1979, 1981-1984, 2002, 2006, and 2007. This species was reported on the Reserve in 2002 (Colt, 2004). This species is the amphibian most often encountered in the forest during the daytime (WEM, pers. obs.). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

13. Northern Two-lined Salamander *Eurycea bislineata* (Green, 1818). Museum records for the Northern Two-lined Salamander exist for 1960, 1963, 1978, 1979, 1981-1983, 2006, and 2007. This species was reported on the Reserve in 2002 (Colt, 2004). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

14. Longtail Salamander *Eurycea longicauda* (Green, 1818). Museum records for the Longtail Salamander exist for 1965, 1979, and 1982. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

15. Spring Salamander *Gyronophilus porphyriticus* (Green, 1827). Museum records for the Spring Salamander exist for 1956, 1957, 1959, 1963, and 1982-1984. This species was reported on the Reserve in 2002 (Colt, 2004). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

16. Four-toed Salamander *Hemidactylium scutatum* (Temminck & Schlegel, 1838). Museum records for the Four-toed Salamander exist for 1957, 1963, 1965, 1982, and 1983. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

17. Eastern Newt *Notophthalmus viridescens* (Rafinesque, 1820). Museum records for the Eastern Newt exist for 1963, 1978, 1979, 1981-1984. This species was reported on the Reserve in 2002 (Colt, 2004). On sunny days during May-June, individuals often bask just under the surface of the water of shallow ponds near Crisp Pond (WEM, pers. obs.), where it is abundant. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

18. Northern Redback Salamander *Plethodon cinereus* (Green, 1818). Museum records for the Northern Redback Salamander exist for 1950, 1956, 1957, 1959, 1962, 1963, 1978, 1979, 1981, 1982-1984, 2002, and 2006. This species was reported on the Reserve in 2002 (Colt, 2004). This species is regularly seen under cover in the forest of the Reserve and is the Plethodon species most often encountered on the Reserve (WEM, pers. obs.). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

19. Northern Slimy Salamander *Plethodon glutinosus* (Green, 1818). Museum records for the Northern Slimy Salamander exist for 1956, 1957, 1959, 1978, 1979, 1981-1984, and 2005-2007. This species was reported on the Reserve in 2002 (Colt, 2004). Among the Plethodon species on the Reserve, the Northern Slimy Salamander is less frequently seen in the forest than is the Northern Redback Salamander (WEM, pers. obs.). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

20. Wehrle's Salamander *Plethodon wehrlei* Fowler and Dunn, 1917. Museum records for Wehrle's Salamander exist for 1956, 1982, 1983, 2006, and 2007. This is the least frequently encountered Plethodon species on the Reserve (WEM, pers. obs.). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

21. Red Salamander *Pseudotrton ruber* (Latreille, 1801). Museum records for the Red Salamander exist for 1956, 1957, 1959, 1966, 1982, 1984, and 2007. This species was reported on the Reserve in 2002 (Colt, 2004). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

Lizards

22. Five-lined Skink *Plestiodon fasciatus* (Linnaeus, 1758). Museum records for the Five-lined Skink exist for 1956 and 1957. RCL has reports of this species from the Calverly Lodge area for the early 1960s. This lizard appears to be actually rare rather than apparently rare at PNR. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

Snakes

23. Copperhead *Agkistrodon contortrix* (Linnaeus, 1766). Museum records for the Copperhead exist for 1956, 1960, 1961, 1963, 1968, 1970, 1984, and 2007. This snake appears to be less common now than in the past, perhaps because of shading of traditional den sites (RCL, pers. obs.). Contemporary sightings are infrequent enough to consider this species actually rare on PNR. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

24. Eastern Racer *Coluber constrictor* Linnaeus, 1758. Museum records for the Eastern Racer exist for 1956, 1966, and 1983. This species was reported on the Reserve in 2002 (Colt, 2004). This snake appears to be much less common now than in the past, perhaps in response to the encroaching forest (RCL, pers. obs.). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

25. Timber Rattlesnake *Crotalus horridus* Linnaeus, 1758. A museum record for the Timber Rattlesnake exists for 1958. Irregular sightings of this species have been reported over the years from the Reserve and from adjacent Powdermill Village. This species was reported on the Reserve in 2002 (Colt, 2004). During 2006-2007, individuals were seen on PNR, one of which spent extended time in Crisp meadow during summer 2007. This snake does not ever appear to have been common, such that the spate of recent reports of individuals is considered noteworthy. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

26. Ringneck Snake *Diadophis punctatus* (Linnaeus, 1766). Museum records of the Ringneck Snake exist for 1956, 1963, 1965, 1966, 1982, and 1984. This species was reported on the Reserve in 2002 (Colt, 2004). Among the most common snake species on the Reserve, this snake has been captured during 2004-2007 in a mark-recapture study of snakes on PNR (WEM, unpubl. data). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

27. Milk Snake *Lampropeltis triangulum* (Lacépède, 1788). Museum records for the Milk Snake exist for 1957 and 1958. This snake has been captured during 2004-2007 in a mark-recapture study of snakes on PNR, although it is not common (WEM, unpubl. data). Numbers of this species have been decreasing as forest succession continues, and derelict buildings have been razed. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

28. Smooth Green Snake *Liochlorophis vernalis* (Harlan, 17827). Museum records for the Smooth Green Snake exist for 1958, 1961, 1964, and 1983. This species was reported on the Reserve in 2002 (Colt, 2004). This snake has been captured during 2003-2006 in a mark-recapture study of snakes on PNR (WEM, unpubl. data). Each year, several individuals are found dead in the Crisp Pond area, unfortunate victims of lawn mowing (RCL). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

29. Northern Water Snake *Nerodia sipedon* (Linnaeus, 1758). Museum records for the Northern Water Snake exist for 1957, 1964, 1984, and 2006. This species was reported on the Reserve in 2002 (Colt, 2004). This snake has been captured during 2003-2007 in a mark-recapture study of snakes on PNR (WEM, unpubl. data). This species is especially common in the Crisp Pond complex in the Reserve's bird banding area. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

30. Eastern Rat Snake *Pantherophis alleghaniensis* Holbrook, 1836. Museum records of the Eastern Rat Snake exist for 1957, 1958, 1961, and 1974. This species was reported on the Reserve in 2002 (Colt, 2004) and has been captured during 2003-2007 in a mark-recapture study of snakes on PNR (WEM, unpubl. data). The Eastern Rat Snake appears to be less common now than in the past, perhaps because of the loss of open area through succession (RCL, pers. obs.). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

31. Queen Snake *Regina septemvittata* (Say, 1825). Museum records for the Queen Snake exist for 1957 and 1960. This snake appears to be actually rare if not extirpated on PNR. It is known from the surrounding Westmoreland County area (Hulse et al., 2001).

32. Brown Snake *Storeria dekayi* (Holbrook, 1836). The Brown Snake is known from PNR through occasional reports by RCL from the headquarters area, especially from the Spring Swamp area. Dead individuals have been found by RCL after heavy rains have flooded the PARC area. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

33. Redbelly Snake *Storeria occipitomaculata* (Storer, 1839). A museum record for the Redbelly Snake exists for 2004. This species was reported on the Reserve in 2002 (Colt, 2004). This snake has been captured during 2002-2007 in a mark-recapture study of snakes on PNR and is among the more common snake species on the Reserve (WEM, unpubl. data). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

34. Common Garter Snake *Thamnophis sirtalis* (Linnaeus, 1758). Museum records for the Common Garter Snake exist for 1972, 1985, and 2006. This species was reported on the Reserve in 2002 (Colt, 2004). This snake has been captured during 2002-2007 in a mark-recapture study of snakes on PNR and is the most abundant snake species on the Reserve (WEM, unpubl. data). It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

35. Smooth Earth Snake *Virginia valeriae* Baird and Girard, 1853. A museum record for the Smooth Earth Snake exists for 1969. This species has not been seen since the single specimen was collected from a garden on the Marshall property by M.G. Netting. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

Turtles

36. Common Snapping Turtle *Chelydra serpentina* (Linnaeus, 1759). Museum records for the Common Snapping Turtle exist for 1956, 1964, 1974, and 1984. This species was reported on the Reserve in 2002 (Colt, 2004). Mark-recapture records exist for the Common Snapping Turtle from Crisp Pond by WEM and PNR personnel during 2005-2007. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

37. Northern Painted Turtle *Chrysemys picta* (Schneider, 1783). A museum record for the Northern Painted Turtle exists for PNR without date. This species was reported on the Reserve in 2002 (Colt, 2004). This turtle is routinely seen in Crisp Pond to which it recruited after

the pond was dug in the early 1960s. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

38. Wood Turtle *Glyptemys insculpta* (LeConte, 1829). Museum records for the Wood Turtle exist for 1957, 1960, 1962, and 1965. This species was reported on the Reserve in 2002 (Colt, 2004). This species has been the subject of a long-term demographic study since 1960. The relative abundance of this species has changed over the years. In the 1960s, the Wood Turtle outnumbered the Box Turtle, which is presently the more common of the two turtle species on the Reserve. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

39. Eastern Box Turtle *Terrapene carolina* (Linnaeus, 1758). A museum record for the Eastern Box Turtle exists for 1964. This species has been the subject of a long-term demographic study since 1960. It was most recently reported on the Reserve in 2002 (Colt, 2004). The relative abundance of this species has changed over the years. In the 1960s, the Eastern Box Turtle was outnumbered by the Wood Turtle but is presently the more common of the two turtle species on the Reserve. It is also known from the surrounding Westmoreland County area (Hulse et al., 2001).

Discussion

Thirty-nine species of amphibians and reptiles are known to occur or have formerly occurred on PNR: six frogs, one toad, 14 salamanders, one lizard, 13 snakes, and four turtles. The species list of PNR does not include four amphibian and four reptile species found elsewhere in Westmoreland County (Table 1). Among those eight species, only three of them, the Eastern Worm Snake, Kirtland's Snake, and the Spotted Turtle, would be rare if even present on PNR. All three species are noted in Westmoreland County; each by one historical record and not thought to be extant (Hulse et al., 2001). In the case of the Eastern Worm Snake, the Westmoreland County record is well outside of its geographic range. The historical record for Kirtland's Snake is well apart from small disparate colonies that are represented by multiple records. The Spotted Turtle in Pennsylvania, apart from the Westmoreland County record, avoids the Appalachian Mountains and the northern tier of Pennsylvania. Thus, although not impossible, the existence of these three species is highly improbable for both the County and PNR, future findings of which would be extremely noteworthy.

For the other species not detected on PNR, only the Northern Leopard Frog and Eastern Fence Lizard could have a tenuous if present existence on the Reserve. Extensive wet meadows are lacking for the former species, and extensive open rocky habitat are lacking for the latter species. The remaining three species, Marbled Salamander, Common Mudpuppy, and Valley and Ridge Salamander, seem most likely to have escaped detection although we are not sure of the extent to which water quality that is associated with past strip mining activities has affected the Common Mudpuppy on the Reserve's streams and in Powdermill Run itself.

Among the species found on the station, six species (Eastern Hellbender, Eastern Five-lined Skink, Copperhead, Eastern Racer, and Timber Rattlesnake) appear to be generally rare, and two species (Mountain Chorus Frog and Queen Snake) appear to have been extirpated from the Reserve. The rarity of the Copperhead is a phenomenon that has occurred since the acquisition of the property. The Copperhead was once predictably seen near exposed rocky structures that have since grown over. Once common, the Eastern Racer is now rarely seen,

Table 1. List of amphibian and reptile species reported by Hulse et al. (2001) from Westmoreland County, Pennsylvania, exclusive of Powdermill Nature Reserve.

Common Name	Scientific Name and Author
Northern Leopard Frog	*Lithobates pipiens* (Schreber, 1782)
Marbled Salamander	*Ambystoma opacum* (Gravenhorst, 1807)
Common Mudpuppy	*Necturus maculosus* (Rafinesque, 1818)
Valley and Ridge Salamander	*Plethodon hoffmani* Highton, 1971
Eastern Fence Lizard	*Sceloporus undulatus* (Bosc and Daudin, 1801)
Eastern Worm Snake	*Carphophis amoenus* (Say, 1825)
Kirtland's Snake	*Clonophis kirtlandii* (Kennicott, 1836)
Spotted Turtle	*Clemmys guttata* (Schneider, 1792)

a response that we suspect is associated with the loss of open space during succession over the past 50 years.

Two species, the Milk Snake and Eastern Rat Snake, appear to have declined in abundance since the acquisition of the property, for the same reasons as the Copperhead. However, unlike the Copperhead, these species are not rare on the station.

One species, the Northern Painted Turtle, had been known from the station based upon one specimen of unknown date. However, this species became routinely observed a few years following the creation of Crisp Pond and adjoining smaller ponds in the early 1960s and is seen nowhere else on the property. Unlike the Northern Painted Turtle that has benefited over time at the station, we are unsure if the same is true of the Timber Rattlesnake. Although infrequently encountered in the past, this snake has been seen more commonly in the last two years by resident and visiting researchers. The reasons for the recent increase in sightings of Timber Rattlesnakes, all of which were adult in body size, remain an unresolved and interesting topic.

The herpetofauna of PNR closely overlaps what one would expect to see elsewhere in Westmoreland County in the Allegheny Mountains section. Species absent from PNR puts to test the status of species of uncertain status in Westmoreland County Continued long-term field work at this old and protected station will provide more data necessary to apply to testable predictions concerning faunal changes associated with both ongoing water quality improvement and grassland-forest land management programs.

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Foraging by Northern Prairie Skinks and Five-lined Skinks May Include Simultaneous Search and Prey Handling

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Theoretical models of foraging often depend on the assumption that handling a prey item and searching for another are mutually exclusive activities (Stephens and Krebs, 1986), but this assumption has been relaxed in some models (McNair, 1983; Lucas and Grafen, 1985; Juliano, 1989). As predators of small invertebrates that typically consume multiple prey during the course of the day, skinks of the genus *Eumeces* may provide an example of a group for which this issue is relevant. I have observed simultaneous handling and search by captive specimens of two species of *Eumeces*. A Northern Prairie Skink (*E. septentrionalis*), originally collected in Hennepin County, Minnesota (Cochran,1983; Cochran, 1986), captured a small moth, then noticed and captured a larger moth without dropping the first. A Five-lined Skink *E. fasciatus*, originally collected in Marinette County, Wisconsin (Cochran, 1989) captured a mealworm (Tenebrio sp.) and, after I dropped a second mealworm into its cage, moved over to capture the second with the first prey still protruding from its mouth. It then proceeded to swallow both mealworms. Because I typically fed the captive skinks sequentially one prey at a time until they were satiated, I am unable to estimate how often multiple prey captures occur when multiple prey are available, but my observations indicate that at least two species of *Eumeces* are capable of searching for and capturing a second prey item before they are done consuming their first. The cases described here are more similar to the scenario modeled by McNair (1983) than that treated by Lucas and Grafen (1985) in that the first prey were not lost during capture of the second.

Predators for which the ability to handle one prey and simultaneously search for another is most relevant should meet several criteria. Obviously, they should be able to consume multiple prey within a feeding bout. At least some of the prey that they capture should require more than a trivial period of handling before being subdued and swallowed, but these prey must not be so demanding that they require the predator's undivided attention. One implication of these expectations is that the prey in question are likely to be of an intermediate size range. The prey may also be patchily distributed, so that they sometimes occur in high enough concentrations that the predator will encounter more than one at the same time. Finally, the prey may be relatively mobile, so that they are likely to escape if the predator does not pursue them soon after they are encountered. How well do Five-lined Skinks and Northern Prairie Skinks match these criteria?

The diet and foraging behavior of Five-lined Skinks have been relatively well studied. Field collections have shown that they feed on a variety of invertebrates, some of which are relatively mobile (Fitch, 1954; Hecnar et al., 2002). Burghardt (1964) showed experimentally that vision was important in detecting and choosing prey, although not necessarily to the exclusion of olfaction; this result would seem especially relevant in the case of a skink detecting a second prey while occupied with handling another. Fitch (1954) found an average 1.44 items per stomach in skinks that contained food but suggested that many had had time to digest food prior to being processed. He found an average of 1.67 prey items per fecal pellet, whereas Hecnar et al. (2002) found 3.2 items per scat. Captive adults ate from one to nine 26-mm mealworms in a single meal (Fitch, 1954). Some prey, notably those with long appendages such as crickets and harvestmen, require more extensive handling, including shaking, battering against the substrate, and the removal of legs prior to consumption (Webb, 1949; Fitch 1954).

Fewer studies have addressed the diet and feeding behavior of the Northern Prairie Skink. However, like the Five-lined Skink, the Northern Prairie Skink has been reported to feed primarily on invertebrates, especially crickets, grasshoppers, and spiders (Breckenridge 1943). I have observed captive adults feed regularly on mealworms, moths, spiders, harvestmen,

caterpillars, crickets, centipedes, winged ants, and pillbugs. They fed less readily on adult beetles and small earthworms, ignored millipedes (presumably because of their chemical defense), and attacked slugs but were unable to grasp them because of their copious mucus. Adults fed on mealworms as small as 4 mm in length and approximately 1 mm in diameter, although they had difficulty picking them up from smooth surfaces. At the other extreme, a dragonfly with a wingspan of 10 cm was consumed except for the head capsule and wings. Crickets were sometimes subdued by grasping them by each hindleg in turn and shaking them until the appendage was separated from the body, resulting in handling times as long as four minutes, and a large caterpillar 31 mm in length took almost 30 minutes to swallow. As many as seven large mealworms (15-20 mm) were eaten in succession by one skink.

Because they consume prey of a wide range of sizes and a wide range of handling times and they often consume multiple prey during the course of a feeding bout, the Five-lined Skink and Northern Prairie Skink may be good examples of predators for which the ability to simultaneously handle and search for prey might be especially beneficial. To explore this phenomenon in depth, however, might require animals fully acclimated to captive conditions.

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Human-Mediated Dispersal of the Mediterranean Gecko *(Hemidactylus turcicus)* in Texas

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Exotic species are rapidly becoming an important consideration for conservation. Geographic range expansion of exotic species continues to draw attention as should the dispersal agents and life history stages of the dispersed organisms. Here, we report a human-mediated dispersal event (anthropochore) involving the Mediterranean Gecko (*Hemidactylus turcicus*) in Texas.

Hemidactylus turcicus, a geographically widespread exotic species in the United States (Conant and Collins. 1998. Reptiles and Amphibians of Eastern and Central North America. 3rd ed., Houghton Mifflin Co., Boston. 450 pp.; Meshaka et al. 2006. Herpetol. Conserv. Biol. 1:45-50) that is typically associated with buildings and other human structures (Rose and Barbour 1968. American Midl. Nat. 79:159-168; Dundee and Rosman 1989. Amphibians and Reptiles of Louisiana. Louisiana State University Press, Baton Rouge. 295 pp.). The geographic range expansion since its introduction into the United States has been well discussed (Meshaka et al. 2006). However, little information is available that quantifies dispersal of this species. Some researchers have noted the connection between the distribution of this species along trucking routes and the role trucks play in its dispersal (Davis 1974. Journ. Herpetol. 8: 77-80; Meshaka 1995. Florida Scientist 58: 10-15), and other researchers have underscored the importance of eggs as the most common and successful life history stage in the dispersal of this species (Selcer 1986. Copeia 1986: 956-962). Herein, we report a case of human-mediated dispersal of this species by the U.S. Postal Service to a new site within its geographic range and comment on its implications.

We discovered a live juvenile female *H. turcicus* (1.327 g, Total Length = 84 mm, SVL = 40 mm, Tail Length = 44 mm) among a shipment of boxes as they were delivered by the U.S. Postal Service to the Texas A&M University-Texarkana mailroom on 14 May 2007. The outside temperature was 28–30 C. *Hemidactylus turcicus* had not been reported on the A&M-Texarkana campus before this incident. This observation supports the assertion that juveniles and adults can be spread via shipments inside the cargo area of trucks.

Mail truck activity and human-associated vagility by species such as *H. turcicus*, provide repeated rapid and long distance dispersal that is otherwise naturally uncommon or absent. The availability of mail trucks as dispersal agents for *H. turcicus* provides ample opportunity for exchange of genetic material to improve heterozygosity among populations, especially those founded by only a few individuals. It could also serve to disperse diseased individuals, which might negatively impact native species. Mail truck dispersal could also provide opportunities for dispersal to new locations, such as Texas A&M University–Texarkana, which in this case involved the dispersal of a presumably single individual of a young female. In this situation, the frequent stops made by mail trucks increase the likelihood of a shorter wait for a potential mate for this female than at buildings with less reliable dispersal opportunities. In light of the negative ecological consequences associated with incidental dispersal of organisms, such as *H. turcicus* by mail trucks, we suggest another layer of attention to be paid to parcels delivered by U.S. Postal Service.

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Use of Gopher Tortoise Burrows *(Gopherus polyphemus)* by the Exotic Green Iguana *(Iguana iguana)* in Southern Florida

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The Green Iguana (*Iguana iguana*) is a neotropical species that was reported breeding in Florida as an exotic species by the1980s (see reviews and citations in Meshaka et al. 2004a). This successful species has since expanded its range both south and north with well-established breeding colonies now known from the lower Florida Keys up through Palm Beach County (Meshaka et al. 2004a,b; Engeman et al., 2005; Smith et al., 2006, 2007a).

Population density in a managed natural area has been estimated to be 626 individuals/km2 (Smith et al. 2007a), and a preference exists for colonizing disturbed habitats (Meshaka et al. 2004a,b; Engeman et al. 2005) such that Green Iguanas have become a problem species in several Florida state parks (Meshaka et al. 2004b; Smith et al. 2006; Meshaka et al., 2007; Smith et al., 2007a,b).

The Gopher Tortoise (*Gopherus polyphemus*) is a "threatened species" and is fully protected in Florida (39 F.A.C. - Florida Wildlife Code). Herein, we report the use and modification of a Gopher Tortoise burrow in a colony that includes the state listed Florida Burrowing Owl (*Speotyto cunicularia floridana*). At this same site, this owl was shown to be a predator of young Green Iguanas and its burrows were shown to be used by Green Iguanas (McKie et al., 2005).

Figure 1. A female Green Iguana (*Iguana iguana*) modifying an active Gopher Tortoise burrow in Boca Raton, Palm Beach Co., Florida, on 21 April 2004.

Figure 2. The same burrow of Figure 1 revisited 29 min. after the Green Iguana was first seen in the burrow.

Figure 3. A female Green Iguana *(iguana iguana)* exiting the Gopher Tortoise *(Gopherus polyphemus)* burrow in Boca Raton, Palm Beach Co., Florida, on 31 May 2006.

The colony is located in Boca Raton, Palm Beach County, Florida, on the main campus of Florida Atlantic University (FAU). The presence of a nearby canal with many tree branches overhanging water provides optimum Green Iguana habitat and enables them to colonize near tortoise and owl burrows at this location. The field is open, with vegetative cover dominated by low grasses and forbs.

While conducting Gopher Tortoise and Burrowing Owl surveys at a 0.61 ha section of the colony at FAU, MRT observed Green Iguanas inhabiting burrows on several occasions. On the first occasion, 21 April 2004, 1105 hrs., 75°F, RH 61%, with mostly cloudy skies and variable 5 MPH winds, MRT was in the SE corner of campus in a field adjacent to student apartments (N26°21.8130', W80°5.8563') surveying tortoises (11 burrows) and owls (6 burrows). Three additional burrows were of uncertain origin. MRT observed and photographed a Green Iguana enter a clearly marked Gopher Tortoise burrow (Figure 1). At 1134 hrs, she returned to the site to photograph the damage to the burrow caused by the iguana (Figure 2), but did not see the animal (believed to still be in the burrow). On the second occasion, 31 May 2006, 1230 hrs, 87°F, RH 62%, MRT was in the same location surveying tortoises (13 burrows) and owls (6 burrows). Five additional burrows were of unknown origin. MRT was within a few meters of the first observation site, where she observed a Green Iguana exiting an unmarked Gopher Tortoise burrow (Figure 3). We suspect that the nature of the 2004 Green Iguana activities was related to nesting behavior in light of the sex of the animal, digging behavior, and because April is the peak nesting month for southern Florida Green Iguanas (Meshaka et al., 2007). The observations reported here are particularly noteworthy because they demonstrate the extent to which this locally common exotic species can physically alter the refuge structure of sensitive species for its own benefit and, perhaps, in so doing, negatively impact the residents of those burrows.

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Observations on the Diet of the Shorthead Garter Snake, *Thamnophis brachystoma*

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The Shorthead Garter Snake, *Thamnophis brachystoma* has a very restricted range; occurring only in southwestern New York and northwestern Pennsylvania, primarily on the Allegheny High Plateau (Price, 1978). In a previous paper (Gray, 2005), I suggested that the restricted range of *T. brachystoma* to unglaciated regions was the result of the distribution of native earthworms. I further suggested that the Shorthead Garter Snake would have been excluded from north of the southern limit of the Quaternary glaciation due to the lack of earthworms, as described by Reynolds (1994). It has been assumed by several authors (Conant, 1975; Price, 1978; McCoy, 1982; Hulse et al 2003) that most of the urban Erie County populations of this species were introductions. For example, Price (1978) wrote in regard to urban populations in Erie, Butler and Allegheny counties: "in the absence of intervening populations, {these populations} must be attributed to human introduction." However, since the publication of Price's paper, several more localities of *T. brachystoma* in the glaciated regions of Erie and Crawford counties have been found. Furthermore, as reported in this paper, new information on the diet of captive *T. brachystoma* suggests that this species may consume more than just earthworms in the wild. In light of the new localities and data on diet, it may be necessary to consider an alternative explanation (other than human introduction) for the presence of this species, not only in rural glaciated areas, but also in urban ones.

In this paper, I wish to expand and modify some ideas put forth in my previous note (op. cit.), and to suggest that a possibility set forth by Price (1978), that the species has expanded —or may be expanding—its range, may explain the presence of the Shorthead Garter Snake in glaciated regions.

Earthworms are the only documented prey in wild *T. brachystoma* (Ernst and Ernst 2003). Several authors (Sweeny, 1992; Rossi, 1993; Tennant and Bartlett, 2000) have suggested potential food items other than earthworms for Shorthead Garter Snakes. These include fish, insects, leeches, frogs, and salamanders. I decided to determine if these items would be taken by two captive *T. brachystoma* (1 male: 1 female). The male (305 mm TL) was captive-born in August 2004; the female (430 mm) was wild-caught as an adult in May 2006. Prior to the feeding trials described below, these snakes had only been fed earthworms (mainly *Lumbricus terrestris*). Food items were offered as follows: if a live food item was offered, it was place in the cage opposite the snake and allowed to move around; and when nonliving items were offered, forceps were used to hold the item when presenting it to the snake.

On 2 July 2007, a leech (*Placobdella* sp.) was obtained from a Common Map Turtle (*Graptemys geographica*), and offered to an adult female *T. brachystoma.* The snake immediately

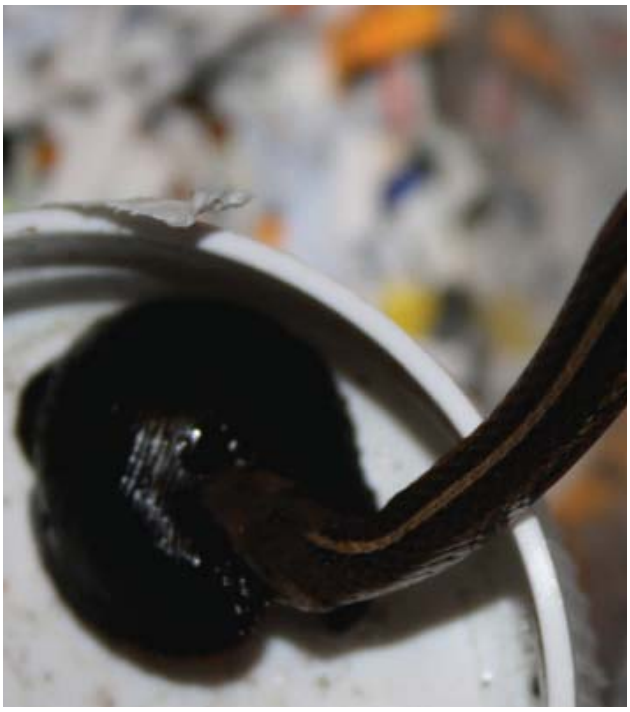

Figure 1. Female *Thamnophis brachystoma* attempting to consume a leech (*Placobdella* sp.).

grasped the leech, which was attached to a container lid by its caudal sucker (Figure 1). The snake attempted to pull the leech from the lid, but was unable to do so. After several minutes, the snake released its grip, and I removed the leech from the enclosure. I cut the leech (lengthwise) into two pieces, and offered these to the snake, which managed to consume both halves.

On 3 August 2007, I purchased four feeder guppies (*Poecilia reticulata*) (two ca. 2.0 cm, and two ca. 3.0 cm) from a local pet store. I offered these to two adult Shorthead Garter Snakes, with the following results. I placed all four guppies in a small container lid, with enough water to allow them to swim, yet have the dorsum break the surface of the water. When offered to the female *T. brachystoma*, she showed interest by tongue-flicking and following the motion of the swimming guppies, but initially didn't attempt to consume any. After a period of several minutes, I decided to offer her one of the larger guppies with forceps. I placed the fish close enough for her to tongue flick-it, and after doing so, she seized it in her mouth, and proceeded to swallow it. After consuming the initial guppy, she approached the feeding pan. As she approached, the guppies swam around frantically. Upon noticing the motion, the female Shorthead Garter Snake tongue flicked the surface of the water, submerged her head, gaped and swayed back and forth. This "fishing" behavior is basically the same as observed in *T. sirtalis* when attempting to consume fish in water. When the snake's head was touched by a guppy, the snake would attempt to grasp it in her jaws, which after a minute or so, she managed to do. After she had consumed the second guppy (a smaller one) I removed the feeding pan. I then placed the pan in the male snake's enclosure. The male was tongue - flicking in the direction of the pan as I lowered it. As soon as he noticed the motion, or perhaps detected the scent of the fish, he quickly approached the pan. The above described "fishing" behavior commenced almost immediately. The male succeeded in capturing and consuming the other small guppy. The remaining guppy was offered with forceps to the female Shorthead Garter Snake, which consumed it.

On 6 August 2007, I offered the male Shorthead Garter Snake a slug, which the snake grasped in its jaws almost immediately. The snake "handled" the slug only for a few seconds, and then released it. The slug secreted copious amounts of mucus while in the snake's mouth and these seemed to deter the snake. The snake attempted to rid itself of the secretions by wiping its gaping mouth on the substrate. I then offered the female a slug, and ended up with the same results, an attempt to consume the slug, followed by release of the slug, and an attempt to wipe off secretions.

On 8 August 2007, both Shorthead Garter Snakes were offered small strips of Yellow Perch (*Perca flavescens*) fillets. When offered to the snakes, each tongue-flicked the strip of fillet before grasping and consuming it (Figure 2). This is significant as it suggests that *T. brachystoma* may consume dead fish or carrion.

On 9 September 2007, I offered both Shorthead Garter Snakes a juvenile American Toad (*Anaxyrus americanus*). The toad's movement drew each snake's attention, and elicited a few tongue flicks, but no attempt at consumption was made by either snake. Despite *A. americanus* being a food item in the diet of *T. sirtalis*, toad's skin toxins may make them unpalatable to *T. brachystoma*.

On 8 October 2007, I offered the female *T. brachystoma* a previously frozen juvenile Green Frog, *Lithobates clamitans melanotus*. The snake tongue-flicked the frog several times, and then moved away from it. I maneuvered the frog so that it was near the snake's head. This time she grasped one the

Figure 2. Female *Thamnophis brachystoma* consuming a portion of Yellow Perch *(Perca flavescens)* fillet.

frog's front limbs, and attempted to swallow the frog. However, the frog was much too large for the snake to consume, and she eventually released it. I next used dissecting scissors to snip off one of the hind limbs from the thawed frog, and offered it to the snake with forceps. The snake gripped the proximal end of the limb, and in approximately five minutes, consumed it. This feeding episode suggests that *T. brachystoma* may feed on small frogs, both as carrion and also live.

On 10 September 2007, each of the Shorthead Garter Snakes was offered a Northern Redback Salamander (*Plethodon cinereus*). The male approached the salamander and tongue-flicked it, which made the salamander attempt to flee. The male followed the salamander and grasped it at midbody. The salamander rolled and twisted while releasing copious amounts of skin secretions. After several seconds of struggling, the male *T. brachystoma* released the salamander. The snake then tried to wipe the now sticky secretions off by rubbing the sides of its head on the substrate. On 8 October 2007, I offered the male Shorthead Garter Snake another Northern Redback Salamander, which he managed to subdue and consume.

When the female was offered a *P. cinereus*, she initially approached and tongue-flicked it, while the salamander remained motionless. As the snake continued to investigate the salamander, the *P. cinereus* attempted to flee. The snake followed the salamander and grasped it by the head. A brief struggle ensued and the salamander broke loose and fled again. The snake followed and grasped the *P. cinereus* by the tail, which the salamander autotomized. The *P. cinereus* then crawled away while the snake consumed the salamander's tail (Figure 3). After consuming the tail, the female *T. brachystoma* eventually captured and consumed the salamander. Another *P. cinereus* was offered on 12 September 2007. This time the female Shorthead Garter Snake initially showed interest, but subsequently made no attempt to capture or consume the salamander.

Mark Lethaby (2007, personal communication) offered a Dusky Salamander (*Desmognathus*) to a captive *T. brachystoma* without success.

A 12 mm cricket was offered to each *T. brachystoma* on 15 September 2007. While each snake showed interest by tongue-flicking, neither made any attempted to consume the cricket.

Discussion

Several factors influence the distribution of species. Asplund (1963) thought it seemed unlikely that a strictly earthworm diet would restrict the range of *T. brachystoma*. However, there is no indication that he was aware that effects of past glaciation have resulted in native earthworms having a distribution similar to that presently displayed by *T. brachystoma*. Asplund (1963) also noted that the distribution of the Shorthead Garter Snake may have resulted from competition from other worm-eating snakes, such as *Storeria dekayi* and *Thamnophis sirtalis*. He reported that both these species were rare or uncommon in areas where *T. brachystoma* occurred. Finally, Asplund (1963) concluded that thermal activity may have had the greatest bearing on the distribution of *T. brachystoma*. If this proves to be correct, the Shorthead Garter Snake may be a species adversely affected by climate change. Wozniak and Bothner (1966) observed a preference in *T. brachystoma* for low, herbaceous cover, such as occurs in meadows and old fields. Succession of these habitats may cause local declines.

My observations regarding the diet of *T. brachystoma* suggest that this species may more closely resemble that of its closest living relative, the Butler's Garter Snake (*T. butleri*), which has been known to consume amphibians and fish, in addition to earthworms. The range of Butler's Garter Snake is largely in glaciated areas of the Midwest. Catling and Freedman

Figure 3. Female *Thamnophis brachystoma* consuming autotomized tail of Northern Redback Salamander (*Plethodon cinereus*).

Table 1. Food items offered to two captive *Thamnophis brachystoma*, a male and a female. A "yes" means that an attempt was made by the snake to consume the item; a (-) means the attempt failed, a (+) the attempt succeeded; a "no" represents no attempt to consume the item.

Food items offered	Male *T. brachystoma*	Female *T. brachystoma*
leech	n/a	Yes (+)
live fish (guppies)	Yes (+)	Yes (+)
yellow perch fillet	Yes (+)	Yes (+)
slug	Yes(-)	Yes (-)
crickets	No	No
salamander	Yes (+)	Yes (+)
toad	No	No
frog	n/a	Yes (+)

(1980) speculated that Butler's Garter Snake in glaciated Ontario may have fed on leeches prior to the introduction of European earthworms. Could this also be a possibility with *T. brachystoma*? Because leeches are primarily aquatic, it is unlikely that they would be a major part of the diet; however, if wild *T. brachystoma* also consumed amphibians and or fish, as did captive specimens, this may have provided them with enough variation in the diet to colonize glaciated regions much sooner, and penetrate further than they would have been able to do so, had they had to wait for the introduction of non-native earthworms. It also is possible that the diet of *T. brachystoma* has changed from a more varied diet of earthworms, leeches, amphibians and fish, to feeding almost exclusively on earthworms. Non-native earthworms appear to be widespread, abundant and more easily obtained than leeches, small amphibians or fish. Therefore, a preference for earthworms might be expected to be selected for. With non-native earthworms being so ubiquitous, it seems likely that the range of *T. brachystoma* should expand further into glaciated regions - assuming of course, that competition with *Storeria dekayi* and *Thamnophis sirtalis* is minimal. In Erie County, it does appear that *T. brachystoma* is more abundant in areas where these other two species are less abundant.

Since Price's paper on the distribution of the Shorthead Garter Snake (Price 1978), several additional localities have been found in Erie and Crawford counties. All the new localities are located in glaciated portions of both counties, with the Erie sites (n=4) being from 30–72 km west of the glacial boundary, and the Crawford site 12 km west of the boundary. These sites are located between the supposed introductions and the "natural" populations as described in Price (1978). In addition, all but one (an Erie County site) of the localities is located in a rural area, and they are unlikely to represent released captives. It appears that since the last glaciation, *T. brachystoma* has extended its range from within the Allegheny High Plateau, westward to at least 80° longitude. This expansion may have been aided by a more varied diet than previously believed, and the introduction of non-native earthworms. Alternatively, the recently discovered sites may be relicts of a previously more extensive range (D. A. Rossman, 2007 pers. comm.).

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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 in 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, 5438 SW 12th Terrace Apt. 4, Topeka, Kansas 66604, USA.

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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.

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

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The Journal of Kansas Herpetology, issued quarterly (March, June, September, and December), publishes all society business.

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As space allows, *JKH* 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 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. In the interest of consistency and clarity, the common names used in *JKH* will follow the latest edition of standardized common names as organized by CNAH (www.cnah.org), which are also used in the prior, current and subsequent editions of *Amphibians and Reptiles in Kansas* (currently Collins and Collins, 1993).

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