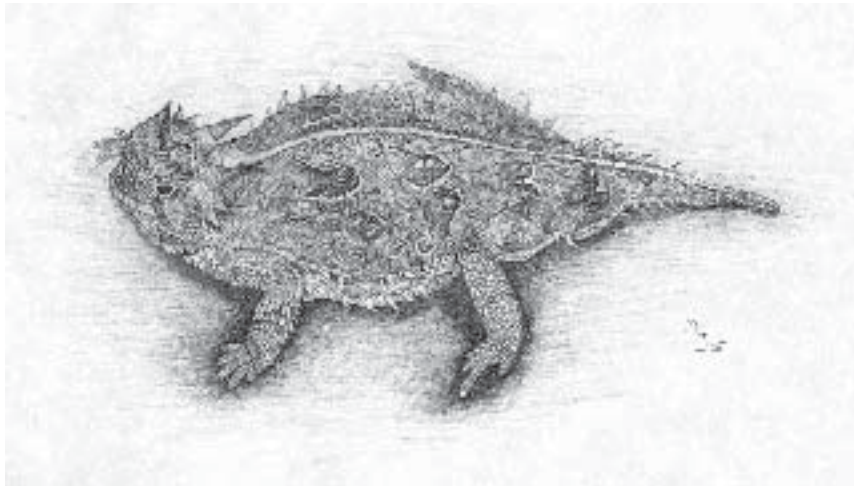


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Front Cover: An pencil illustration of a Texas Horned Lizard (*Phrynosoma cornutum*) by Melissa Johann, Sternberg Museum of Natural History, Hays, Kansas.

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KHS BUSINESS

KHS SPRING 2007 FIELD TRIP RESULTS

A hardy 55 KHS members and their friends, families, and colleagues drove south and west across the burning brow of the treeless southwestern Kansas prairie to spend the weekend of 27–29 April 2007 turning rocks, lifting logs, and searching the heavy undergrowth for snakes, lizards, turtles, and assorted amphibians at lush and watery Arkalon Park and its environs in Seward County, Kansas. And they were successful, as the following list attests:

Species Observed	Number Seen
Plains Spadefoot.....	6
Great Plains Toad.....	137
Woodhouse's Toad.....	91
Spotted Chorus Frog.....	58
Plains Leopard Frog.....	12
Common Snapping Turtle.....	1
Yellow Mud Turtle.....	11
Northern Painted Turtle.....	3
Ornate Box Turtle.....	7
Slider.....	15
Spiny Softshell.....	4
Eastern Collared Lizard.....	31
Texas Horned Lizard.....	13
Prairie Lizard.....	77
Great Plains Skink.....	4
Six-lined Racerunner.....	9
New Mexico Blind Snake.....	2
Prairie Kingsnake.....	3
Milk Snake.....	1
Coachwhip.....	15
Great Plains Rat Snake.....	1
Gopher Snake.....	4
Plains Blackhead Snake.....	5
Ringneck Snake.....	9
Plainbelly Water Snake.....	15
Western Ribbon Snake.....	2
Plains Garter Snake.....	1
Common Garter Snake.....	2
Eastern Hognose Snake.....	2
Prairie Rattlesnake.....	3
30 species.....	544 specimens

Participants: Ted Abel, Cathy Acuff, Laura Acuff, Rob Acuff, Patrick Allgood, Lucia Baldwin, Mary Kate Baldwin, Daniel Baylog, Stasya Berber, Katie Bergman, Matthew Broxson, Dan Carpenter, Nathan Carpenter, Shelbi Carpenter, Richard Cebulski, Joseph T. Collins, Suzanne L. Collins, Mike Dee, Erin Dugan, James Gubanyi, Julian Gubanyi, Lauren Hansen, Spencer Hobson-Gutierrez, Michael Hogan, Emily Hooser, Dan Johnson, Grace Anne Johnson, Eric Kessler, Crystal

Klaichang, Jeremy Lane, Emmy Lieser, Brandon Low, Judy Low, Alejandro Lozano, Larry L. Miller, Suzanne L. Miller, Rick Morrow, Daniel Muccino, Dan Murrow, Arturo Papa, Esther Park, Erica Peterson, Kendra Phelps, Mike Rochford, Curtis Schmidt, Derek Schmidt, Lisa Schmidt, Ryan Shefner, Greg Sievert, Zach Simson, Travis W. Taggart, Anna Tarnowski, Victor Tuttle, Eric Wenzl and Roy Wenzl.

Derek Schmidt, 7741 SE 101st Street, Overbrook, Kansas 66524, and Dan Murrow, 3311 North 44th Terrace, Kansas City, Kansas 66104.



KHS Treasurer Eric Kessler gets close to photograph this Slider during the KHS Spring Field Trip to Seward County, Kansas, on 27-29 April 2007. Photograph by Larry L. Miller.



A chorusing Great Plains Toad in a flooded grassy ditch near Arkalon Park in Seward County. The unusually wet winter and spring made for an increased abundance of calling anurans. Photograph by Travis W. Taggart.



The assembled participants at the KHS Spring Field Trip to Seward County, Kansas, on Sunday morning, 29 April 2007. Fifty-five individuals participated in the annual two day Spring Field trip, and were able to record data on 544 specimens of 30 species in southwest Kansas. Photograph by Larry L. Miller.



KHS Field Trip Co-Chairperson Dan Murrow displays one of the Eastern Hognose Snakes found during the KHS Spring Field Trip to Seward County, Kansas, on 27-29 April 2007. Photograph by Chad Whitney.



A Common Garter Snake found during the KHS Spring Field Trip to Seward Co., Kansas, on 27-29 April; the specimen had a red stripe and lacked reddish color laterally, typical of the others from the area. Photograph by Suzanne L. Collins.

MINUTES OF THE KANSAS HERPETOLOGICAL SOCIETY EXECUTIVE COUNCIL MEETING

4 February 2007 at Noon
Collins residence, 1502 Medinah Circle, Lawrence, Kansas.

Present: Mary Kate Baldwin, Dan Carpenter, Joe Collins, Suzanne Collins, Dan Fogell, Eric Kessler, Dan Murrow, Curtis Schmidt, Ginny Weatherman presiding.

Call to order: KHS President Ginny Weatherman called the meeting to order at 12:15 am.

KHS Financial Report for 2006 - Mary Kate Baldwin & Eric Kessler

Eric Kessler and Mary Kate Baldwin submitted a treasurer's report showing an end of year balance of \$18,122.19 (including the Kamb and Gloyd-Taylor funds). The balance reflects an increase of \$1,667.77

(after all invoices were paid) over last year. In 2006, there were 211 members. Mary Kate gave Suzanne a membership list that Suzanne will add to the archival file. It was moved and seconded (S. Collins/Carpenter) to accept the 2006 Financial Report. Motion approved.

Budget request by JKH Editor - Travis W. Taggart
Joe forwarded Travis' request for an allocation of \$2,400 to cover the cost of publishing and mailing four issues of the Journal of Kansas Herpetology for 2007. It was moved and seconded (Schmidt/ S. Collins) to authorize the request. Motion was approved.

Summary of 2006 meeting expenses - Curtis J. Schmidt

Curtis reported that all expenses from the annual meeting in Hays have been paid. The cost of the meeting was approximately \$3,000. More than half of the meeting expenses were paid from private dona-

tions that Curtis raised. Joe Collins raised \$2,325 at the KHS auction. The company that printed the 2006 T-Shirts produced more than ordered. They donated the extras to the KHS. Curtis asked how distribution should be handled. Some suggestions were made but there was no decision.

Budget request for and report on 2007 annual meeting - Ginny Weatherman

Ginny, Joe, and Suzanne met with Mike Coker of the Topeka Zoo. They did a walk through of the facilities. Mike was very welcoming and offered all the services available for the meeting. The meeting and auction will be held in the Gary K. Clarke Educational Center at the Zoo. Two keynote speakers are scheduled, Emily Moriarity and John Campbell. Andy Durbin is designing a T-shirt and Ginny is working with a shirt company for a possible donation. The Council estimated an order of 150 shirts. Curtis agreed to order a plaque for the 2007 KHS Distinguished Life Member-designate from the company that did last year's award. Ginny has received the pledge of \$1,000 toward meeting costs. She will continue to seek other donors. The Council suggested \$1,000 from the treasury toward the cost of the meeting. It was moved and seconded (Schmidt/S. Collins) to authorize the request. Motion was approved.

Report of the 2008 annual meeting - Dan Carpenter

Dan is looking into a number of places to hold the meeting. Possibilities include Friends University, Wichita State University, Great Plains Nature Center and the Sedgwick County Zoo. He will seek a place that does not require fees for use of the facilities.

KHS photo awards for The Collins Award runners-up - Ginny Weatherman

It was moved and seconded (Baldwin/Schmidt) that monetary awards be made from the KHS treasury to recognize second and third places for The Collins Award on years when the photo contest occurs. Second place will receive \$100 and third place will receive \$50. This will in no way impact *The Collins Award* conventions and regulations. Second and third place recipients will be voted on by paid KHS annual meeting registrants, who will receive ballots when they register for the meeting. Awards would be made after *The Collins Award* on Saturday evening before the auction. Motion approved (Ginny will organize the photo display, ballots, and numbering of the photos. Identities of the photographers will be concealed so it does not become a popularity contest).

Other budget requests.

The Council discussed the expenses incurred by the field trip chairpersons. They have costs associated with visiting possible field sites and with making arrangements. It was moved and seconded (Carpenter/Schmidt) that \$100 be budgeted from the KHS treasury for expenses in planning field trips. Chairpersons will submit receipts for payment. Motion approved.

Preparation of KHS Budget for 2007 by KHS Executive Council

It was moved and seconded (Schmidt/Weatherman) that the following expenses for the 2007 fiscal year be allocated from the treasury:

Journal of Kansas Herpetology	\$2400
Annual Meeting	\$1,000
Photo Award.....	\$150
Field Trip Expenses.....	\$100
Total.....	\$3,650

Motion approved.

In addition, it was moved and seconded (Schmidt/S. Collins) that the Secretary and Treasurer invest funds into the Gloyd-Taylor and Kamb funds annually after all expenses for the previous year are paid and contingency funds are set aside. Motion approved.

Report of the KHS Historian - Suzanne L. Collins

Curtis delivered a box of information that John Simmons collected when he was historian. Suzanne continues to collect and maintain material.

Report of the Field Trip Co-Chairperson - Dan Morrow

Dan and Derrick have contacted agencies in Liberal and are making arrangements for the spring field trip. They will visit the site a month in advance to check details.

Report of the Awards Committee Chair - Dan Fogell

Dan reported that there were very few applicants for the Kamb and Gloyd-Taylor Awards. Dan will write some guidelines that will help clarify award requirements. He will make it clear that applicants do not have to be students so that amateurs can apply. Joe will e-mail guidelines and dates to herpetologists. An anonymous donor approached Dan with a proposal to establish a new KHS award. It would recognize volunteers who provide educational outreach in herpetology in Kansas. The Council agreed to proceed with more discussion provided the new award is available only to KHS members and that the outreach is on a volunteer basis. Dan will share this information with the prospective donor.

Report of the Nominating Committee Chair - Joe Collins

The Nominating Committee is seeking a candidate. The Council suggested several names that Joe will take to the Committee.

Other business

It was noted that paid memberships are down from previous years. The Council discussed ways to encourage new members. Joe will send an e-mail solicitation to herpetologists.

A gift membership option will be added to the annual membership card giving members an opportunity to give a membership.

Since many of the people who attend field trips are not members it was decided to put information on a picnic table in the camping area to give them the opportunity to join. New members would receive a back issue of the Journal and a 2006 T-shirt.

As the KHS liaison, Curtis will make a presentation about KHS at the Kansas Wildlife Society at their next meeting.

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

Meeting was adjourned at 2:30pm.

Respectfully submitted,

Suzanne L. Collins, KHS Historian

ANNOUNCEMENTS

CALL FOR PAPERS 34TH ANNUAL MEETING OF THE KANSAS HERPETOLOGICAL SOCIETY

The 34th annual meeting of the Kansas Herpetological Society will be held 3-4 November 2007 in the Gary Clarke Education Center at the Topeka Zoo in Topeka, Kansas. KHS President Ginny Weatherman will preside over the two-day meeting, which will feature scientific presentations, three awards, and a fund-raising auction to support the Society.

The KHS annual meeting provides a opportunity for herpetologists and other individuals who have an intellectual interest in amphibians, turtles, and reptiles to come together for scientific lectures and friendly discussion. There will be ample opportunity for socializing in a collegial and supportive atmosphere. Keynote speakers for the meeting are Dr. Emily Moriarty Lemmon (University of Texas at Austin) and Dr. Jonathan Campbell (University of Texas at Arlington).

Individuals wishing to present a paper at the KHS meeting should submit their title and abstract as an e-mail no later than 1 October 2007 to Joe Collins (jcollins@ku.edu) for posting on the KHS web site.

For more information about the 2007 KHS annual meeting, visit the web site at

<http://www.cnah.org/khs/AnnualMeetingInfo.html>

KHS 2007 PHOTOGRAPHY COMPETITION

The tenth *Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology* will be given during the KHS 34th Annual Meeting on 2-4 November 2007 at the Topeka Zoo in Topeka, Kansas, to the KHS member judged to have taken the best photograph of a native species of Kansas amphibian, reptile, or turtle.

The KHS Awards Committee, composed of Daniel D. Fogell (University of Nebraska at Omaha), Travis W. Taggart (Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas) and Walter E. Meshaka, Jr. (State Museum of Pennsylvania, Harrisburg), will select the recipient from photographic prints on display in the Gary K. Clarke Education Center, Topeka Zoo, from 10:00 am to 2:00 pm on Saturday, 3 November; only KHS members are eligible.

Meeting registrants participating in the KHS Photography competition for *The Collins Award* should set up their images no later than 10:00 am on Saturday (3 November) in the Gary K. Clarke Education Center, Topeka Zoo.

Limber up your cameras. *The Collins Award* for 2007 for the best Kansas herpetofaunal image will be \$1000.00. The KHS Executive Council recently voted to make modest monetary awards of \$100.00 for sec-

ond place and \$50.00 for third place. All three awards will be presented by KHS President Ginny Weatherman or her designate.

The three winners must be present at the KHS auction on Saturday evening to receive their awards.

For more information about the KHS 2007 Annual Meeting in Topeka, go to

<http://www.cnah.org/khs/AnnualMeetingInfo.html>

KANSAS HERPETOLOGY COURSE AT WASHBURN UNIVERSITY FALL SEMESTER 2007

For the tenth straight year, KHS member Joseph T. Collins will teach *Kansas Amphibians, Turtles, and Reptiles*, at Washburn University in Topeka during the fall semester of 2007.

The course covers the classification, distribution and natural history of the nearly 100 kinds of amphibians, reptiles, and turtles 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.

Offered for traditional and non-traditional students. (With permission of superintendent or teacher certification officer, can be used toward renewal of Kansas teaching certificate.)

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 the Department of Biology, Washburn University, 1700 College Avenue, Topeka, Kansas, or call (785) 670-2077.

Pay Your 2007 Dues

If you have not already done so, send your calendar 2007 dues (\$15.00 regular, \$20.00 contributing) to:

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

Your attention to this matter will ensure that delivery of the *Journal of Kansas Herpetology* will be uninterrupted.

FALL FIELD TRIP PIGEON LAKE, MIAMI COUNTY

The 2007 Annual Fall KHS Field Trip will be held in Miami County, Kansas. KHS members will gather as early as Friday evening, 5 October 2007, at Linn County Park at La Cygne Lake. The camping and facilities are modern, so plan accordingly. Most members typically want to camp, however lodging is available in Osawatomie and Paola.

Look for the large KHS sign off the main road to the Lake off US 69. Herpetofaunal counts begin at 9:00 am at the campsite on Saturday and Sunday, 6-7 October 2007. The field trip adjourns at noon on Sunday, 7 October 2007.

More information is available on the KHS web site.

KHS MEMBER HAS HERP-RELATED COLLECTION ON EXHIBIT

From dancing frogs to menacing mutants, depictions of reptiles and amphibians in motion pictures are rarely realistic. A portion of KHS member Travis W. Taggart's movie poster collection is featured at the Sternberg Museum of Natural History.

This exhibition looks at Hollywood characterizations of these animals as reflected in the posters used to market movies. The collection consists of over 250 US and international movie posters that each depict an amphibian, crocodylian, reptilian, or chelonian image. The collection covers the early 1930s to the present.



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 awards, grants, and scholarships. This list recognizes donations received since the last issue of the Journal of Kansas Herpetology.

*The Alan H. Kamb Grant
for Research on Kansas Snakes*

Calvin L. Cink
Franklyn F. Finks
R. Gayan Stanley

*The Howard K. Gloyd-Edward H. Taylor
Scholarship*

R. Gayan Stanley

BRIEF HERPETOLOGICAL HISTORY OF PIGEON LAKE

"Since so much of the formerly heavily wooded areas of eastern Kansas has been cleared for crop raising during the last fifty or sixty years, any section of this territory, even though small, in which primitive conditions have been disturbed relatively little, has many points of interest for a student of the natural history and distribution of animals. Such a region is found in southern Miami County..."

Howard K. Gloyd. 1932. The Herpetological Fauna of the Pigeon Lake Region, Miami County, Kansas. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. XV: 389-409.

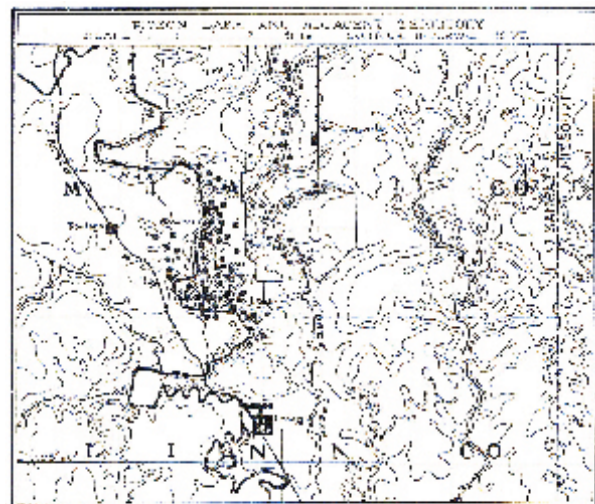
On 15 May 1926, Howard K. Gloyd made his initial visit to the region of southcentral Miami County known as Pigeon Lake, then owned by Alfred J. Black. Several additional visits over the following three years revealed the biological richness of the area.

It was during these visits that the first record of the Eastern Newt (*Notophthalmus viridescens*) was observed and collected in Kansas. Additionally, the first specimens from the state (other than the dubious holotype) of the Spring Peeper (*Pseudacris crucifer*) were secured.

Other notable finds, were nine Coal Skinks (*Plestiodon anthracinus*), one Redbelly Snake (*Storeria occipitomaculata*) and one gravid Eastern Hognose Snake (*Heterodon platirhinos*). In all, the field parties led by Gloyd collected 37 species of amphibians, reptiles, and turtles in the vicinity of Pigeon Lake.

Several attempts over the past thirty years, to find Pigeon Lake or its remnants have either failed or been inconclusive. The 2007 KHS Fall Field Trip is an opportunity to better determine the fate of this site, and to comparatively survey its herpetofauna.

- Travis W. Taggart



Map 8. Map of Pigeon Lake and vicinity showing extent of area covered by collections and the approximate site of swamp woods. Traced, with modifications, from U. S. Geol. Surv. Geomorphologic Map, Missouri-Kansas. Natural City also, edition of 1926, reprinted 1924.

Map of the Pigeon Lake region from Gloyd, 1932.

VIEWPOINT

Rarity as an Ecological Paradigm

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In the March viewpoint, "The Fallacy of Perceptions" Richard Hoyer makes a strong case for the need to manage snakes based on actual data rather than anecdotal evidence. A principle thesis is that snakes are not likely to be rare or occur in low numerical abundance, "If one accepts the basic principles of wildlife biology, the notion of numerical rarity is not very rational".

This statement, although applicable to Mr. Hoyer's experience with *Charina* and *Contia*, is inaccurate. It is true that many snake species once presumed rare were in fact found to be abundant when sampled adequately under the proper conditions (Werler and Dixon, 2000; Hubbs, 2004; McDonald, 2004; Winne *et al.*, 2005; Hoyer, 2007). The growing field of occupancy estimation centers primarily around separating actual abundance from perceived abundance, i.e. is a species rare or simply difficult to detect (MacKenzie *et al.*, 2006).

In practice, rarity, (presumably equivalent to low numerical abundance) is a universal, fundamental biological concept, a very general property of living organisms, applicable to plants, microbes, animals, and snakes. While the concept of rarity is complex, it is also so general that it exhibits many scale independent properties, a rare trait for an ecological paradigm. In fact Charles Darwin in *On the Origin of Species* observed, "rarity is the attribute of a vast number of species in all classes, in all countries" (p. 460). In this response I will discuss the concept of rarity as a biological paradigm and its applicability to snake communities.

A rare species can be defined in at least seven ways depending on the breadth of its abundance, geographic range and habitat requirements (Meffe and Carroll, 1994). Rarity is often defined in relative terms, "if some species are common, then others by definition must be rare" (Magurran, 2004) but may also be defined in terms of absolute abundance or density, with some minimum threshold of number or biomass per unit area defining a species as rare. It should be understood that there is no accepted absolute threshold defining a species as rare and that given the difficulty of measuring absolute abundance, rarity is usually defined in relative terms (e.g. relative abundance).

In absolute terms, density is inversely proportional to body size, with smaller species found at higher densities than larger species. However small species are less mobile than larger species, and to maintain a viable population small species must also maintain higher densities. Thus while it is true that small species are more abundant than larger species, smaller

species are considered rare at threshold densities much higher than larger species (Brown, 1995).

The concept of rarity is ecologically well supported. For example, absolute abundance or density varies over a species' geographic range. In portions of its range a species may be numerically abundant while in other portions that same species may be rare (numerically not abundant). Species at the edge of their ranges are generally rare relative to their abundance at the center of their ranges. Given that species have discrete ranges, all species are rare within areas of their geographic distribution (Brown, 1995). Additionally, rarity is inherent to most datasets. Looking at the number of individuals collected per sample unit as a function of the number of samples, rarity is observed far more often than abundance (Turner, 1961; Brown, 1995). Thus rarity or low numerical abundance is exhibited within any given species and is in fact observed more frequently than abundance.

In terms of community ecology, most communities sampled empirically have abundant species, common species, and rare species (but see Silva and Sites, 1995). This pattern is very general and observed in most snake communities. Relative abundance data for snake communities in Utah, Kansas, Maryland, New Hampshire, Indiana, Florida, Arizona, California, Texas, Mexico, Costa Rica and the Philippines show a similar pattern: abundant, common, and rare species (Dunson and Minton, 1978; Sullivan, 1981; Brown and Parker, 1982; Reynolds, 1982; Guyer and Donnelly, 1990; Dalrymple *et al.*, 1991; Ford *et al.*, 1991; Mendelson and Jennings, 1992; Fitch, 1993; Busby and Parmelee, 1996; McLeod and Gates, 1998; Kjoss and Litvaitis, 2001; Brodman *et al.*, 2002). Mr. Hoyer's own data on a southern California snake community exhibit a similar pattern suggesting that in this snake community some species are relatively abundant while others are relatively rare.

Why do snake communities exhibit such similar structuring of species across such a range of habitats? In a given habitat species niches are limited by environmental constraints as well as competing species. These factors taken together, limit the survival and reproduction of a given species. A potential mechanism for the existence of rare species is that species whose niches are more constrained by their abiotic and biotic environments are rare, while species whose niches are less constrained are abundant.

While I do take issue with Mr. Hoyer's statement regarding rarity and low numerical abundance, several excellent points are postulated in the article. In order to make informed conservation decisions about snake

communities, it is important to adequately sample snake communities, using proper methods, under proper conditions and at the proper time of year. Mr. Hoyer's demonstration of the abundance of two species perceived as rare is commendable. However, given the generality of the concept of rarity as an ecological paradigm, this demonstration does not invalidate the applicability of rarity to snake communities.

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FIELD NOTES

A Checklist of the Amphibians, Turtles, and Reptiles of the Flint Hills Tallgrass Prairie Preserve in Butler and Greenwood Counties, Kansas

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INTRODUCTION

An herpetological survey of the Flint Hills Tallgrass Prairie Preserve (FHTPP), located in Butler and Greenwood counties, Kansas, was undertaken during 1999 and 2000 by me to determine the diversity and observable abundance of amphibians (salamanders, frogs and toads), turtles, and reptiles (lizards and snakes). Six field trips were carried out (three each in 1999 and 2000) to observe and record these animals using standard searching, observing and collecting techniques. These techniques were road-cruising (day and night), listening for choruses at night, and lifting rocks and other flat debris during the day.

RESULTS

A total of 30 species of amphibians, turtles, and reptiles were recorded from FHTPP during this survey. Eleven days were spent in the field and 112 field assistants participated in recording an estimated 2,982 observations of individual specimens (Appendix 1). Included in that total were all specimens found dead on the road (DOR) or alive on the road (AOR) on the nearest section roads that formed a border around the survey area. In addition, choruses were monitored and noted during the field work (both day and night), and were estimated.

Based on observable abundance, the following ten species are considered typical and representative of the herpetological habitat found on FHTPP: Boreal Chorus Frog, Northern Cricket Frog, Plains Leopard Frog, Ornate Box Turtle, Great Plains Skink, Eastern Collared Lizard, Northern Prairie Skink, Lined Snake, Common Garter Snake, and Common Kingsnake.

ACKNOWLEDGEMENTS

Many individuals accompanied me on one or more field trips to the Flint Hills Tallgrass Prairie Preserve. I am particularly indebted to Mary Kate Baldwin (Topeka Collegiate School), Keith Coleman (Lawrence), Suzanne L. Collins (The Center for North American Herpetology), Mark Ellis (Kansas Herpetological Society), Kelly J. Irwin (The Center for North American Herpetology), and Larry L. Miller (Topeka Collegiate School).

In addition, I wish to thank the following individuals

for their participation in this effort: Caleb F. Acree, Laura Acuff, Robert Acuff, Robert Acuff, Jr., Steven L. Adams, Shawn Ames, Jeannette Aranda, Chelsea Armstrong, Aislynn Barnett, David Beaver, Tyler Beaver, Jesse E. Bell, Sarah Bellows-Blakely, Aaron Bennett, Mitch Bennett, Matt Bonebrake, Alex Bork, Ryan W. Bradbury, Aisha M. Butt, Dan Carpenter, Park W. Carter, Chris Cigich, Jamie Crehan, Jeremiah Cripps, Cynthia A. Cummings, Tom Cummings, Stephanie Cunningham, Emily S. Eastman, Lisa N. Ediger, G. R. Elder, Brandon Eugster, Robert Eugster, Adam Faircloth, Shirley Faircloth, Frank Finks, Georgia Finks, Jason Gager, Summer Gauger, Karen Graham (Sedgwick County Zoo), James Gubanyi, Henry Hall, Terry Hall, Trey Harrison, Jordan Haven, Kaity Heflin, Emily Heronemus, Betty Horn, John Horn, Ryan M. Huske, Amanda Hutton, Dan Johnson, Dustin Johnson, Grace Anne Johnson, Caleb Karch, Olin Karch, Eric Kessler, Maura Kessler, Michael A. Kirby, Josie L. Kirk, Susan S. Labrador, Julie Levings, Cami Liggett (Sternberg Museum of Natural History), John F. Lokke, Lori A. Meador, Evan Mielke, James Mielke, Suzanne L. Miller, David Oldham, Jackson Oldham, Robert Oldham, Tag Oldham, Stuart Perez, Jacob Porak, Chad J. Puff, Evelyn Regier, Bernard Regier, Emily Reimer, James Reimer, Jill Reimer, Curtis Schmidt, Kathy Sheidler, Stephanie Sherraden, Gregory Sievert (Emporia State University), Melissa Skillman, Melissa Snickles, Jonathan Storm, Don Stout, Gibran M. Suleiman, Dan Thompson, Sheridan Thompson, T. J. Topf, Tony Topf, John Torline, Barbara Tucker, Breana Tutuska, Jenny Upchurch (Wichita Eagle), Richard Upshaw, Steven R. Wahle, Janeen Walters, Jonathan Wasson, David Wickell, Donovan M. Wilson, Tim Wray, Bob Zerwekh, and Mike Zerwekh.

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Appendix 1. The observed abundance of the thirty species of amphibians, turtles, and reptiles found during this survey on the Flint Hills Tallgrass Prairie Preserve in Greenwood and Butler counties, Kansas, based on observations of individual specimens (plus tadpoles and egg clutches), and including DOR and AOR specimens. Larger choruses of Boreal Chorus Frogs and Plains Leopard Frogs heard during March–April 2000 were arbitrarily (and conservatively) estimated at ± 100 specimens per chorus.

Amphibians	total amphibians observed/heard (estimated) 2,445
Woodhouse's Toad (<i>Anaxyrus woodhousii</i>)	(estimated) 35
Northern Cricket Frog (<i>Acris crepitans</i>)	(estimated) 844
Boreal Chorus Frog (<i>Pseudacris maculata</i>)	(estimated) 1,306
Plains Leopard Frog (<i>Lithobates blairi</i>)	(estimated) 191
Bullfrog (<i>Lithobates catesbeianus</i>)	(estimated) 64
Great Plains Narrowmouth Toad (<i>Gastrophryne olivacea</i>)	5
Turtles	total turtles observed 71
Common Snapping Turtle (<i>Chelydra serpentina</i>)	3
Northern Painted Turtle (<i>Chrysemys picta</i>)	6
Ornate Box Turtle (<i>Terrapene ornata</i>)	55
Slider (<i>Trachemys scripta</i>)	7
Reptiles	total reptiles observed 466
Eastern Collared Lizard (<i>Crotaphytus collaris</i>)	32
Texas Horned Lizard (<i>Phrynosoma cornutum</i>)	2
Great Plains Skink (<i>Plestiodon obsoletus</i>)	222
Northern Prairie Skink (<i>Plestiodon septentrionalis</i>)	17
Ringneck Snake (<i>Diadophis punctatus</i>)	18
Eastern Racer (<i>Coluber constrictor</i>)	11
Great Plains Rat Snake (<i>Pantherophis emoryi</i>)	3
Prairie Kingsnake (<i>Lampropeltis calligaster</i>)	2
Common Kingsnake (<i>Lampropeltis getula</i>)	21
Milk Snake (<i>Lampropeltis triangulum</i>)	10
Bullsnake (<i>Pituophis catenifer</i>)	6
Plainbelly Water Snake (<i>Nerodia erythrogaster</i>)	6
Northern Water Snake (<i>Nerodia sipedon</i>)	12
Graham's Crayfish Snake (<i>Regina grahamii</i>)	2
Brown Snake (<i>Storeria dekayi</i>)	1
Western Ribbon Snake (<i>Thamnophis proximus</i>)	5
Plains Garter Snake (<i>Thamnophis radix</i>)	5
Common Garter Snake (<i>Thamnophis sirtalis</i>)	35
Lined Snake (<i>Tropidoclonion lineatum</i>)	42
Massasauga (<i>Sistrurus catenatus</i>)	14
Total species observed	30
Total specimens observed	(estimated) 2,982

RECORD SLIDER FROM POTTAWATOMIE COUNTY, KANSAS.

Trachemys scripta (Slider). KANSAS: POTTAWATOMIE Co: N39.22786, W96.52864 (MHP 13477). 7 October 2006. Jeremiah Teller. Verified by Joseph T. Collins. Shell only of a partially melanistic adult (below). New county record (Collins & Collins, 1993, Amphibians and Reptiles in Kansas. Third edition. University Press of Kansas, Lawrence. xx + 397 pp.).

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Shell of Slider (MHP 13477) found 7 October 2006 in Pottawatomie County, Kansas. Photograph by Suzanne L. Collins.

NEW KANSAS MAXIMUM SIZES FOR *VIRGINIA VALERIAE* AND *CARPHOPHIS VERMIS*

During March 2007, snakes of two species were collected that exceeded the maximum total length for Kansas specimens reported in Collins and Collins (1993).

Snakes were collected on the Jefferson County tract described by Pisani (2005). The snakes were marked and released at sites of capture as part of ongoing studies of *Virginia* and sympatric species. Photographs of the snakes positioned on a meter ruler were taken for reference. The *Carphophis* remained resident beneath the same shelter for several weeks, and was photo referenced when it became apparent she was a new record.

On 9 March 2007, a female *Carphophis vermis* was collected from beneath a plywood cover board in woodland edge habitat that exceeded by 8mm the maximum total length for Kansas specimens cited in Collins 1993. Data for the *Carphophis* are:

SVL 332 mm
Tail 42 mm
Mass 12.5 grams
Coloration typical of the species
Collected by George Pisani
Photographed 19 March 2007

On 29 March 2007 (ca 70m NE of the *Carphophis* site), a large female *Virginia valeriae elegans* was collected from beneath a plywood cover board in tall CRP grass; she exceeded by 68mm the published Kansas total length record. Data for the specimen are:

SVL 320 mm
Tail 53 mm
Mass 21 grams
Coloration typical of the species
Collected by George Pisani and William Busby
Photographed 29 March 2007

Additionally, on 14 March 2007 I captured a different large female *Virginia v. elegans* ca 80m N of the *Carphophis* site, also beneath a plywood cover board at the extreme eastern edge of lightly-wooded habitat. At that time, it was noted that this animal exceeded by 53mm the published Kansas record, since surpassed further by the 29 March specimen. This animal has remained resident beneath the same cover board through 29 March 2007. Data for that *Virginia* are:

SVL 315 mm
Tail 43 mm
Mass 12.5 grams
Scutellation/coloration typical of the species
Collected by George Pisani

Voucher photographs of the record specimens have been deposited in the Fort Hays State University/Sternberg Museum Collection (*Virginia*: MHP 13478 and *Carphophis*: MHP 13479).

For ongoing support and access to KBS/KSR lands and facilities, I thank Ed Martinko (Director) and Jerry Denoyelles (Assistant Director) of KBS/KSR. Ga-

len Pittman, Manager KSR Field Station, assisted by photographing the *Carphophis* during measurement. Funding from Kansas Department of Wildlife and Parks (KDWP) Non-Game Program (Ken Brunson, Coordinator) is gratefully acknowledged as is support from a State Wildlife Grant to Travis W. Taggart, Sternberg Museum of Natural History, Fort Hays State University, from KDWP and the US Fish & Wildlife Service.

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Pisani, G.R. 2005. A new Kansas locality for *Virginia valeriae* Journal of Kansas Herpetology Number 16: 25 (December 2005).

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Figure 1. An adult *Virginia valeriae* (GRP 620) from Jefferson County, Kansas. Photograph by George R. Pisani.

FIRST RECORD OF THE BULLFROG FROM OSBORNE COUNTY, KANSAS

Lithobates catesbeianus (Bullfrog). KANSAS: OSBORNE CO: 39.24951°N, 98.87107°W. 13 August 2006. Curtis J. Schmidt. MHP 12485. Verified by Travis W. Taggart. New county record (Collins & Collins, 1993, Amphibians and Reptiles in Kansas. Third Edition. Univ. Press Kansas, Lawrence. xx + 397 pp.).

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WELDA SPRING FIELD TRIP

On 21 April 2004, the Kansas Biological Survey and the Kansas Herpetological Society cooperated to conduct a field trip to the Anderson County Prairie Preserve (Welda Prairie) in Anderson County, Kansas. The site comprises 1,370 acres, and is managed by the Biological Survey for The Nature Conservancy.

Participants were: Kenneth Bader, Holden Bennett, Mitch Bennett, Gerard Brungardt, John Brungardt, Luke Brungardt, Margaret Brungardt, Mary Ann Brungardt, Anna Busby, William H. Busby, Ian Campbell, Scott Campbell, Joseph T. Collins, Suzanne L. Collins,

Dean Kettle, April Marcangeli, Ruth Palmer, George R. Pisani, Stan Roth, Curtis Schmidt, Greg Sievert, Charlie Stieben, Lynn Swafford, Travis W. Taggart, and Mark Van Doren.

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Species	Number collected
AMPHIBIANS	
Smallmouth Salamander	1 larva
American Toad	4
Bullfrog	9
Cope's Gray Treefrog	1
Northern Cricket Frog	too many to list
Great Plains Narrowmouth Toad	1
Plains Leopard Frog	5
Southern Leopard Frog	1
Boreal Chorus Frog	1
Unidentified anuran egg mass	1

TURTLES	
Ornate Box Turtle	7
Painted Turtle	3, + 1 DOR
Slider	15
Common Snapping Turtle	1
Three-toed Box Turtle	1

LIZARDS	
Eastern Collared Lizard	110
Five-lined Skink	4
Great Plains Skink	135
Northern Prairie Skink	1
Six-lined Racerunner	11

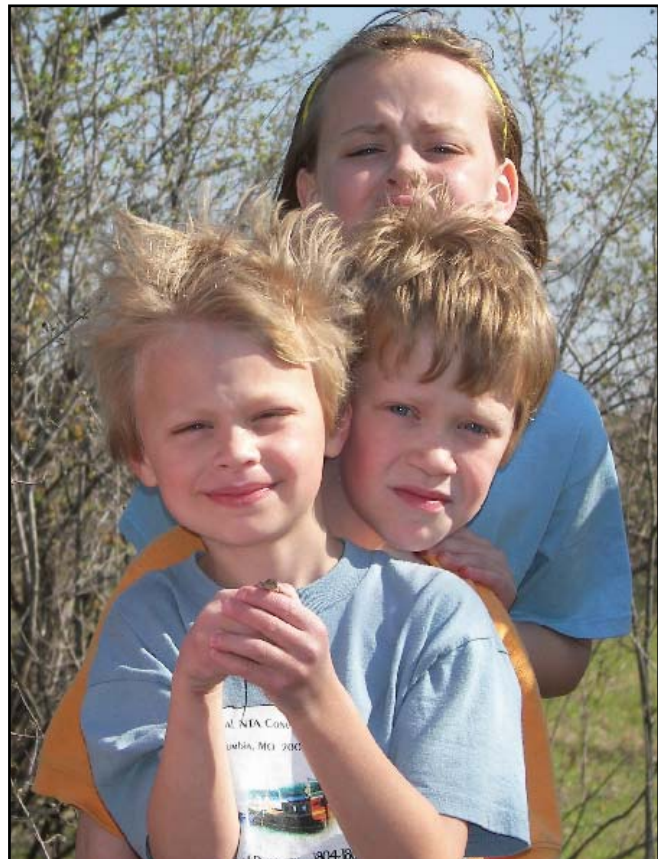
SNAKES	
Common Garter Snake	4
Common Kingsnake	7
Copperhead	3
Flathead Snake	5
Gopher Snake	1
Graham's Crayfish Snake	1
Lined Snake	1
Massasauga	2, + 2 DOR
Plainbelly Water Snake	6
Prairie Kingsnake	1
Eastern Racer	8, + 2 DOR
Ringneck Snake	64
Western Rat Snake	1
Western Ribbon Snake	2
Western Worm Snake	5

Total species: 34
 Total specimens: *426+

*Northern Cricket Frogs in the hundreds are counted as just one.



Bill Busby planned the Welda survey and directed the volunteers. Photograph by Scott Campbell.



The Brungardt clan admires the lizard they caught at Welda. Photograph by John Brungardt.

OPHISAURUS VENTRALIS (EASTERN GLASS LIZARD): A REVIEW OF ROAD-KILL MORTALITIES AND OCCURRENCE IN FLORIDA WITH NOTES ON AN UNUSUAL EVENT.

Ophisaurus ventralis is a common, but frequently cryptic reptile of southeast Florida pine flatwoods interspersed with wet prairies and moist herbaceous areas. Although the species has been documented from most areas with this type of natural community managed by the Florida Park Service (FPS) in southeast Florida (FPS unpubl. data); it is infrequently encountered because of its secretive and semi-fossorial habits.

Road-kill of vertebrate wildlife resources in FPS state parks is a major problem and has been well-reported (Smith *et al.* 1994. Fla. Field. Nat. 22: 81–83; Bard *et al.* 2002. Wildlife Soc. Bull. 30: 603–605; Smith *et al.* 2003. Fla. Field Nat. 31: 53–58). Yet, road-killed *Ophisaurus ventralis* in state parks are rarely encountered (Smith *et al.* 2003, *op cit.*; H. T. Smith unpubl. data), even though Ashton and Ashton (1985. Handbook of Reptiles and Amphibians of Florida, Vol. Two. Windward Publ. Inc. Miami, Florida. 191 pp.) reported the species is frequently found on roadways during mid-morning and early evening. For example, a four year, daily (7 days/week), road-kill survey of 4,642 ha (11,471 acre) Jonathan Dickinson State Park in Martin County, Florida, conducted during 1995–1998, discovered 256 road-killed herpetofauna; however, only 5 of these were *O. ventralis* (H. T. Smith unpubl. data). An identical study conducted 1997 - 2000 at 126 ha (312 acre) urban John U. Lloyd State Park in Broward County resulted in the finding of 16 road-killed herpetofauna none of which were *O. ventralis* (Smith *et al.* 2003, *op. cit.*). During a 44-month survey of herpetofauna species around Lake Jackson in Leon County, Florida from 2000 – 2003, only 14 of the 10,229 species (0.13%) found were *O. ventralis* (Aresco 2005. Jour. Wildlife Mgmt. 69:549-560). In a 2 year survey of Paynes Prairie State Preserve in Alachua County, Florida, only 1 (0.05%) *O. ventralis* was discovered out of the 1,891 road-killed species encountered (Dodd *et al.* 2004. Biol. Conserv. 118:619-631). In this regard, our opportunistic concurrent finding of two road-killed *O. ventralis* individuals is very uncommon.

On 10 August 2006 at 1650 h, a muggy, partly sunny early evening with an air temperature ca. 80 - 85° F (27 - 29° C), HTS found two freshly road-killed *Ophisaurus ventralis* ca. 1 m apart on an unimproved dirt road in Savannas Preserve State Park (2,115 ha) (5,227 acres) located in St. Lucie County, Florida. Both lizards were about the same size (50 – 60 cm), and had apparently been hit at the same time on the east side of the road by the same vehicle. CAG and HTS had just previously been at this exact location at

1430 h conducting herpetofauna coverboard sampling and the dead lizards were not then present. Immediately adjacent habitat to the road consisted of roller-chopped pine flatwoods interspersed with wet prairies and extensive grassy areas to the east, and rough pine flatwoods with wet prairies to the west. The dirt road surface was slightly damp from earlier rainfall.

It is very unlikely that these two individual Eastern Glass Lizards were engaged with each as a mating pair, as copulation for these lizards in our region occurs in the spring season from March to May (The Georgia Museum of Natural History and Georgia Department of Natural Resources. Glass Lizards. [Internet] 2000 Jun 1 [Cited 2006 Sep 6]). Available from:

<http://museum.nhm.uga.edu/gawildlife/reptiles/squamata/lacertilia/anguidae/ophisaurus.html>

Due to the similarity in size and the close distance between the two, we conjecture that one individual was scent-trailing the other or that they were exhibiting territorial behavior, although we could not find corroborating descriptions of these phenomena in the literature.

Other documented sources of mortality for *Ophisaurus* spp. include predation by various snakes, hawks, wading birds, and mammals (Means 1992. *In* Moler [ed.], Rare and Endangered Biota of Florida, Vol. 3, pp. 247-250, Univ. Press Florida, Gainesville; Beane 1995. Wildlife Profiles, NC Wildlife Resources Commission, Raleigh, North Carolina. 2 pp.; Moore *et al.* 2005. Herpetol. Rev. 36:182), and for *O. ventralis* wildfire and prescribed fire induced mortality (Kaufmann and Smith. *In* press. Herpetol. Rev.).

This work is part of CAG's honors thesis research at FAU Wilkes Honors College, and conducted under the approvals of FPS research permit no. 5-06-61, and FAU IACUC protocol A04-03.

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ARTICLES

The Appearance of the Exotic Green Iguana as Road-kills in a Restored Urban Florida State Park: The Importance of an 11-Year Dataset

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Abstract: We examined 11 years of reptile road-kill data from Cape Florida State Park (CFSP), a vegetatively restored, urban state park in South Florida previously destroyed by Hurricane Andrew in August 1992. We found eight reptile species dead on park roads, three of which were exotic. The native Southern Black Racer and the exotic Green Iguana each comprised 30.4% of the total number of road-killed reptiles. The three exotic reptile species combined accounted for 36.3% of all reptiles recovered in this study. Our findings underscore the threat of shifting exotic species dominance faced by protected lands, such as CFSP, and also the importance of quantifying species abundance in various ways so as to provide the sorts of data necessary to make sound management decisions and evaluate their results.

INTRODUCTION

Road-kills of amphibians and reptiles are a major cause of mortality for a wide variety of taxa (Ashley and Robinson 1996, Haxton 2000, Trombulak and Frissell 2000, Hels and Buchwald 2001, Dodd *et al.* 2004, Engeman *et al.* 2004, Aresco 2005, Rossmannith and Smith 2006, Shwiff *et al.* in press). Furthermore, the issue of exotic amphibians and reptiles is a vexing problem in Florida (Meshaka *et al.* 2004a, Meshaka 2006), the United States (Meshaka 2007), and worldwide (Lever 2003).

This paper compares native and exotic reptile mortality due to collisions with vehicles during 1996 - 2006 at Bill Baggs Cape Florida State Park (CFSP), a small, urban park located in Miami-Dade County, Florida, USA, on Key Biscayne approximately seven miles southeast of metropolitan Miami.

STUDY SITE AND METHODS

Cape Florida State Park consists of 325 acres (131.5 ha) of uplands and 106 acres (42.9 ha) of tidal and freshwater wetlands for a combined total of 431 acres (174.4 ha) (Smith *et al.* 2007, FDEP 2001). CFSP is completely encapsulated by urban high-rise infrastructure to the North, the Atlantic Ocean to the South and East, and Biscayne Bay to the West. Terrestrial access is only at the Northern interface.

Hurricane Andrew completely devastated CFSP on 24 August 1992. Prior to the storm, the park had been dominated by a near monoculture of Australian-pines (*Casuarina equisetifolia*), a large exotic tree whose canopy rose to more than 30 meters. This forest was

destroyed, and the subsequent clearing of debris left the park almost barren of vegetation. An ecological restoration plan was developed for the park, with the goal of reestablishing, to the extent possible, the native plant communities that once existed on site. This plan was initiated in 1993, and multiple years of replanting followed.

By the time of the conclusion of our road-kill study in 2006, the park securely supported 10 restored natural plant communities in diverse stages of maturity (Smith *et al.* 2007, FDEP 2001). The upland habitat communities principally consisted of 1.2 miles (1.9 km) - 6 acres (2.4 ha) of beach dune, 152 acres (61.5 ha) of coastal strand, 88 acres (35.6 ha) of maritime hammock, and 11 acres (4.4 ha) of coastal grassland (FDEP 2001). Eleven acres (4.4 ha) of ruderal habitat and 54 developed acres (21.8 ha) composed the remaining uplands (Smith *et al.* 2007, FDEP 2001). There also are approximately 10 acres (4.0 ha) of freshwater in five interdunal swale ponds during the wet season which in some years go completely dry (FDEP 2001).

A road-kill survey was opportunistically conducted during 1996 - 2006 at CFSP along ca. 2 km of paved, two-lane road (with variable speed limits of 24.1 - 40.2 km/hr) by Park Rangers and other staff. This survey did not consist of the rigid protocol reported for other Florida state parks (see method reviews in Smith *et al.* 1994, Bard *et al.* 2002, Smith *et al.* 2003, Rossmannith and Smith 2006, Shwiff *et al.* in press) but data were instead opportunistically collected during various staff activities involving transit on park

roadways. Road-killed animals were identified to the species level whenever possible, and data were then compiled by years.

RESULTS AND DISCUSSION

During 1996 - 2006, 135 road-killed individuals were recovered at CFSP. Five native snake species, two exotic lizard species, and one exotic aquatic turtle were found (Figure 1). Forty-one Southern Black Racers (*Coluber constrictor priapus*) comprised 30.4% of all road-kills, and 22 Corn Snakes (*Elaphe guttata*) comprised 16.3% of all road-kills, and were the most common snakes road-killed. The dominance of the Southern Black Racer among road-killed snakes at our site is typical in rural and urban southeast Florida state parks (HTS pers. obs., Smith *et al.* 2003, Rossmanith and Smith 2006, Shwiff *et al.* in press). Among snakes, the Yellow Rat Snake (*E. obsoleta quadrivittata*), Scarlet Kingsnake (*Lampropeltis triangulum elapsoides*), Southern Ringneck Snake (*Diadophis punctatus punctatus*), and unidentified individuals were killed in lower frequencies (Figure 1). Collectively, the identified native species comprised 60.0% of all roadkills.

Forty-one exotic Green Iguanas (*Iguana iguana*) comprised 30.4% of all road-kills, and together with seven Giant Ameivas (*Ameiva ameiva*), and one Red-eared Slider (*Trachemys scripta elegans*), these three exotic species collectively comprised an astounding 36.3% of all road-kills. The Green Iguana did not appear as a road-kill until 2001 (Figure 2), at which time the Florida Park Service initiated a program to remove this species from the park (Smith *et al.* 2007). Soon thereafter, the Green Iguana became more prevalent in the road-kill survey (Figure 2), and the peak number of road-killed Green Iguanas during 2003 coincided with the highest density of Green Iguanas calculated for the park of 626.6 iguanas/km² (Smith *et al.* 2007). The Green Iguana has reached very high densities in CFSP (Meshaka *et al.* 2004b, Smith *et al.* 2007, Meshaka *et al.* in prep.) as it has in several other Florida parks (Townsend *et al.* 2003, Meshaka *et al.* 2004b, Smith *et al.* 2006). We were, therefore, not surprised at the frequency of its occurrence as a road-kill, the values of which are all the more remark-

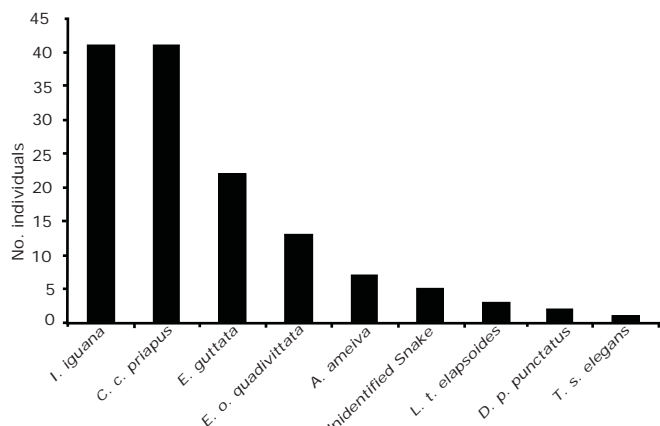


Figure 1. Numbers of reptile species in descending frequency recovered as road-kills during 1996–2006 at Cape Florida State Park, Miami-Dade County, Florida.

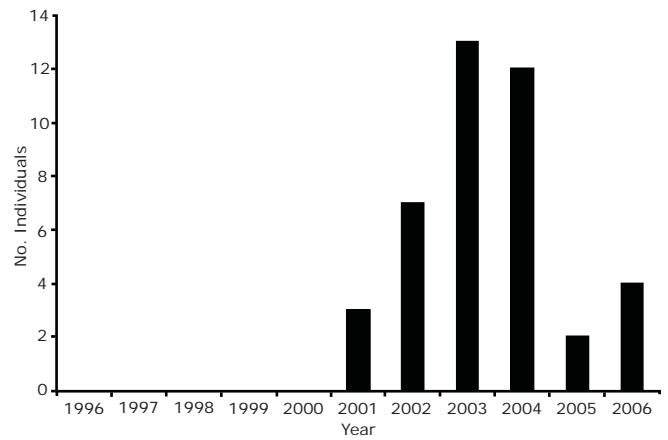


Figure 2. Number of Green Iguanas (*Iguana iguana*) recovered as road-kills during 1996–2006 at Cape Florida State Park, Miami-Dade County, Florida.

able in light of the opportunistic nature of this study. Our results underscore the susceptibility to herpetofaunal community restructuring by exotic species in protected lands such as CFSP. Our results also provide the quantitative data that can prove useful when formulating management plans and measuring results of those plans to bring a system and its various components closer to historical norms as has been the case at CFSP.

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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.

KHS Meetings

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

Field Trips

The KHS hosts 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.

Editorial Policy

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

Submission of Manuscripts

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).

Submission of Original Artwork.

Pen and ink illustrations and photographs are also welcomed. Illustrations and photographs will be returned to the author only upon request.

Advertisements

The Journal of Kansas Herpetology will accept advertisements at the rate of \$25.00 per quarter page per issue, up to a one-page maximum per issue. No advertisements for live animals or parts thereof will be accepted.

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JKH publishes original peer-reviewed submissions under the Articles section. Upon review, acceptance, and publication, Portable Document File (PDF) copies are provided gratis to the author on request.

Societal Awards, Grants, and Recognitions

Distinguished Life Members

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

Bronze Salamander Award

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

The Howard K. Gloyd - Edward H. Taylor Scholarship

The Gloyd-Taylor Scholarship is present annually by the Kansas Herpetological Society to an outstanding herpetology student. 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.

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KHS members only are eligible to apply for The Alan H. Kamb Grant for Research on Kansas Snakes. The recipient of the grant will be selected by the KHS Awards Committee. The award of \$100 is given annually.

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

The Award is established in recognition of the scientific and photographic achievements of Suzanne L. Collins and Joseph T. Collins, whose life-long study and conservation of the native amphibians, reptiles, and turtles of Kansas is amply demonstrated in their extensive and excellent writings and photography, both academic and popular, about these animals. The Collins Award shall be presented no more than once each year. In even-numbered years, the Award is bestowed upon an individual who, in the preceding two calendar years, had published a paper of academic excellence on the native species of Kansas amphibian, reptile, and/or turtle and in odd-numbered years, the Award is bestowed upon an individual who was chosen the best in a juried competition featuring the art of photography in portraying amphibians, reptiles, and/or turtles. The Collins Award is minimally \$1,000.00, and is neither a grant nor a scholarship. No nominations or applications can be made for it.

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