

KANSAS HERPETOLOGICAL SOCIETY NEWSLETTER NO. 96

MAY 1994

ANNOUNCEMENTS

NEW PUBLICATIONS

The New York Turtle and Tortoise Society announces publication of a new book, *Amphibians and Reptiles of Connecticut and Adjacent Regions* by Michael W. Klemens. This book is only available from NYTTS and costs \$45 postpaid. To order, send a check or money order payable to "NYTTS" at NYTTS Mail Order, P.O. Box 878, Orange, New Jersey 07051-0878.

Academic Press now has recently printed *Herpetology: An Introductory Biology of Amphibians and Reptiles* by George R. Zug. This 527 page volume is intended as a classroom reference and is the first such book since Porter's *Herpetology*. Cost is \$50 and the book may be ordered from Academic Press, 6277 Sea Harbor Drive, Orlando, Florida 32821-9816. All billed orders will be charged shipping, handling, and tax. VISA, American Express, and MasterCard are accepted. Include card number, expiration date, and telephone number when ordering by charge card.

The Association des Amis du Laboratoire des Reptiles et Amphibiens announces publication of a new herpetological journal, *Dumeriliana*. The first ten volumes of this journal (which will primarily deal with taxonomy) will cover all living reptiles. The first volume, which covers turtles, is available for \$26. Make checks payable to "AALRAM" and order from Patricia B. Zug, Division of Amphibians and Reptiles, NHB mail stop 162, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.

IHS VIDEOTAPES

Videotapes of presentations at the 1993 International Herpetological Symposium are now available. A variety of natural history and captive husbandry topics are covered on these tapes, which cost \$24.95 VHS, \$29.95 S-VHS. For more information, contact Mark Silver at Mark Silver Productions, P.O. Box 15731, Seattle, Washington 98115-0231, call (206)527-0135, or fax (206)333-4205.

UPCOMING EVENTS

The second annual St. Louis Reptile Breeders Expo will be held on 28 August at the Kirkwood Community Center in St. Louis from 9 a.m.-4 p.m. Only captive-bred

or farm-raised specimens will be shown. For additional information on this event contact James Brumley, 4341 Telegraph, St. Louis, Missouri 63129, phone (314) 892-6604 or (314) 845-2038.

NEW SOCIETY

Our neighbors to the north in Nebraska have organized a new herpetological conservation society. Named the Society for the Study of Nebraska Amphibians and Reptiles, its organizational meeting was held 23 March this year at Omaha. This new group is dedicated to the study of the natural history of Nebraska's herps. Dues are \$10/year and those wishing to join should make checks payable to SSNAR and sent to John Lokke, P.O. Box 76, University of Nebraska-Omaha, Omaha, Nebraska 68182-0242. We welcome this new group to the herpetological conservation community and look forward to a long and fruitful relationship with them.



KHS BUSINESS

THINGS FROM YOUR EDITOR

Although you can't really tell by this Newsletter, KHS now owns a new computer. Yes, folks, once again your Executive Council went out and *spent all the money in the Society's Treasury*. Just kidding, we actually got quite a good deal on a Macintosh Quadra 660AV, a state-of-the-art machine. Now, you're probably asking yourself just what motivated us to buy this new hardware, when the Society already owns a perfectly usable Macintosh SE. Well, here's why: 1) Apple is in the process of changing all of its Macintosh computers to a new way of computing called PowerPC. Because of this, all the software that currently runs on Macs will eventually have to be rewritten or reconfigured. As Macs went to a new operating system a year or so ago and because of PowerPC, all the older Macs (including our good old SE) will shortly become obsolete. 2) Size and speed. That translates to memory and hard disk size and the speed in which files are processed. This new machine has 11 times the hard disk space and four times the memory of the SE. It appears to be about eight times faster than the SE. Because of the changes in software now occurring, the Society would have to (and is) significantly upgrade our old software and the SE just would not have been big enough and fast enough to handle the new software. 3) Longevity. Although the SE lasted us for about four years, it had reached the end of its useful life as far as Society needs were concerned. I anticipate the AV will last us at least six, probably eight, years, perhaps more as it is much more adaptable than the SE. That's why we did what we did. I must note that this new machine cost us less than the SE, and as noted, will do much more than the old machine. Actually, since we sold the SE, the AV was *considerably* less expensive than our first computer. As to new features, here are a few: the AV is FAX capable, which means that you can FAX me directly now. Just use the phone number on the inside front cover. As this is also our home phone, you may experience some transmission problems. Just keep trying. We will eventually get a dedicated phone line just for the computer. I have hooked up to an on-line service, America Online. To send E-mail through this service, my codeword is "Prrattler". If you are using Internet, the address is "prattler@aol.com.". If you are using another on-line service (Compuserve, GENIE, etc.), contact them to see how you go about sending E-mail, etc. through America Online. This will also allow you to download files directly to this computer. By the same token, I will be able to do the reverse if you provide me with an E-mail address. We hope this will save the Society money for phone and mailing costs. There are other signifi-

cant new features with this machine that I am still in the process of learning how to use. I will keep you posted on new services this computer will make available to our membership.

On the subject of computerization, I want to reiterate a couple of things. Some time ago, I requested that anyone submitting manuscripts that have been done on a word processor to also submit a floppy disk (3.5 inch) along with the hard copy. All Macs are equipped with translation software that will allow me to translate your manuscripts, regardless of what kind of machine or word processing software was used. Since that request, I have received a number of manuscripts that obviously were done on a word processor, yet, strangely enough, no disks have been included. *PLEASE* send those disks with the manuscripts, be they letters or what-have-you!! This saves considerable time in putting the Newsletter together and also reduces the number of mistakes in articles, as I can more thoroughly proof the originals and do not have to type them in myself. As you have probably noted, I am no great shakes as a typist. As yet, I will not refuse word processed articles but this policy may change in the future. Let's save each other some headaches and remember to send the floppy with the article. It will be much appreciated.

Finally, please take time to read the excellent position paper on rattlesnake "roundups" prepared by Dave and Alison Reber in this issue. They have spent considerable time developing what is I believe the most comprehensive such work today on these events. Please feel free to copy it and pass it along to those who you think might be interested in it. Other societies are free to reprint the paper and I encourage them to do so.

— EMR

GLOYD-TAYLOR SCHOLARSHIP AVAILABLE

KHS is soliciting nominations for its scholarship, the Gloyd-Taylor Award in Herpetology. The scholarship is named in honor of two of Kansas' greatest herpetologists, Howard K. Gloyd and Edward Harrison Taylor.

Nominations for this award are open to any student enrolled in an accredited educational institution in Kansas or any KHS member enrolled in any accredited educational institution outside of Kansas. Students from primary school through university are eligible. Nominations should include typewritten details, not to exceed two pages, of the nominee's qualifications, plus name and address of the nominee and nominator. Qualifications include, but are not limited to, academic record, herpetological activities, and future plans in herpetology. Self-nomination is excluded.

All nominations should be submitted to KHS President Alan Volkmann, 1650 N. Melrose Lane, Wichita, Kansas 67212 no later than 1 September of this year. The KHS Executive Council will make the final decision and announce the scholarship winner at the KHS annual meeting, at which time all nominees and nominators will be recognized. If no qualified students are nominated, no award will be made.

Those wishing to contribute to the scholarship fund should send their contributions to KHS Secretary/Treasurer Karen Toepfer and note that the contribution is specifically for the Gloyd-Taylor scholarship fund. All contributions are tax-deductible.

HERPCOUNTS AND AMPHIBIAN CENSUSES FOR 1994

Just a reminder that there is a change in the format for this year's Herp Counts sponsored by KHS. Remember that I have agreed to take over this project from Joe Collins for the time being, so from hereon, send the results of your annual KHS Herp Counts to me at 1705 Haskell, Lawrence, Kansas 66044. The period of the counts remains the same, April-May, and no other changes in format are planned.

The Amphibian Census for Kansas is an on-going, year-round project and data can be gathered at any time. Although spring and early summer are obviously the best time to gather amphibian data, it is also important that we receive information from other times of the year. Please keep this in mind when you are out and about later in the year. As with the Herp Counts, send these data sheets to me.

—EMR

STATE AMPHIBIAN OFFICIAL

After the dedicated efforts of hundreds of schoolchildren and teachers over the past year, the Barred Tiger Salamander (*Ambystoma tigrinum mavortium*) is now the official State Amphibian of Kansas. At a public ceremony on the grounds of the Governor's mansion, over 900 children and teachers from schools that ranged from Leavenworth to Utica watched as Governor Finney signed the bill designating the salamander as state amphibian into law. Special congratulations go to teacher Alice Potts and students from OK Elementary School in Wichita who spearheaded the campaign.

TAYLOR PUBLICATION UPDATE

For those of you who have not purchased a copy of the Society's Special Publication No. 2, *The Lizards of Kansas* by Edward Taylor, now is the time to do so. This is a limited edition (only 400 copies), one-time-only printing, so when all copies are sold, that's it. There will be no

additional printings. This will be the last publication ever authored by the most famous of Kansas herpetologists. If you want to make your Taylor library complete or want to get one started, you must have this book. If you want to own a piece of Kansas herpetological history, you have to have a copy. If you want to support KHS, buy a copy. While you're at it, buy two and donate one to your local library.

The volume sells for only \$9 (postpaid) to KHS members, \$10 for non-members and may be ordered from KHS Secretary/Treasurer Karen Toepfer, 303 West 39th Street, Hays, Kansas 67601. Order today, as stocks are selling quickly.

LOGO CONTEST

Although I have received a few submissions for an official logo for the Kansas Herpetological Society, I would like to get a few more for consideration. The ones submitted so far have considerable merit but the Executive Council would like as broad a range as possible to consider. Please submit your original artwork to me. Announcement of the new logo will be made at the KHS annual meeting.

—EMR

CALL FOR PAPERS

KHS president Al Volkmann is issuing a call for papers for this year's annual meeting in Wichita on 5-6 November at the Friends University campus. Anyone wishing to speak or make another presentation should send a short abstract of their presentation to Al at 1650 N. Melrose Lane, Wichita, Kansas 67212 no later than 15 September. Details of the meeting will be announced in the August Newsletter.

CORRECTION

In the last issue, I referred to Bill Minnerath of the U.S. Fish and Wildlife Service. Actually, I knew his first name was really Jim. Must have had Clinton on my mind at the time. My apologies. It won't happen again, Jim.

—EMR



KHS BRINGS YOU GREAT NEWS OF THE WORLD

ROUNDUPS RATTLE ACTIVISTS, HARM SNAKES AND HUMANS

The three rattlesnakes in attendance at the Students for WildCare meeting Wednesday night in Haworth Hall showed their respect for speaker David Reber.

Although the snakes rattled their tails at the beginning and end of the speech, they kept quiet under the cover of a large beach towel as Reber explained the other side of rattlesnake roundups.

Rattlesnake roundups are inhumane events, posing harm to rattlesnakes, humans, and the environment, said Reber, Lawrence graduate student and president-elect of the Kansas Herpetological Society, a nonprofit organization that encourages education and preservation [sic] of wildlife.

Reber was the guest speaker at the monthly meeting of Students for WildCare, a KU organization which assists WildCare. WildCare is a private, nonprofit organization that focuses on nursing wild animals back to health and returning them to their natural habitats.

Reber told the 20 people at the meeting that rattlesnakes at roundups were burned alive, had their fangs extracted, and were excessively stretched to reach prize-winning lengths.

Participants in these roundups frequently spray gasoline down holes and cracks in the ground to drive the rattlesnakes from their dens. The gasoline can harm and even kill innocent wildlife living in these hunting grounds, Reber said.

The gasoline-contaminated meat from these rattlesnakes sometimes is sold to people, he said. People also can become ill if the gasoline leaks into ground water used as drinking water in some rural areas.

Allowing the general public to touch the captured rattlesnakes is another danger that roundups present to humans, Reber said.

Supporters of the roundups garner public support by casting rattlesnakes in their natural habitat as a great danger to the public, Reber said. The supporters exaggerate to the public the risks of bites despite the fact that there have been no reported deaths attributed to rattlesnake bites in Kansas in more than 50 years, Reber said.

He said that the numbers of some rattlesnake dens have declined in recent years and that "any species, no matter how prolific, can become extinct."

Reber said that some types of rattlesnakes were not yet on the endangered species list but that they were candidates on the list for threatened species.

Reber advised concerned individuals to stay informed

and to voice their complaints to the Kansas Department of Wildlife and Parks as well as to their state representatives.

Amy Barnes, vice president of Students for WildCare, said that the members were opposed to rattlesnake roundups because of their inhumane treatment of the animals.

"I can't believe that something so cruel still goes on," she said.

—University Daily Kansan, 25 February 1994
(submitted by Joe and Suzanne Collins, Lawrence)

SNAKE KILLS MIGHT AID HANTAVIRUS

Larry Miller says the state should halt rattlesnake roundups in western Kansas until a study can be done to see if hunts might lead to the spread of rodent-carried hantavirus.

Miller, a wildlife photographer, says Prairie Rattlesnakes [*Crotalus v. viridis*] are a natural predator of deer mice, which are thought to be the primary carrier of the deadly disease in Kansas.

Thirty-three people have died from the disease nationwide, including two in southwest Kansas.

"I would consider the deer mouse more of a threat than the Prairie Rattlesnake," said Miller, a Topeka member of the Kansas Herpetological Society, which opposes the snake hunts.

"If we're going to be taking a natural predator from the environment, to me that is promoting the spread of a disease."

Miller said he has sent the Kansas Department of Health and Environment a letter asking department officials to postpone rattlesnake hunts for at least a year until more research can be done.

The Kansas Legislature approved a law last year that authorizes a Prairie Rattlesnake hunting season.

The law was promoted by residents in Sharon Springs, who wanted to hold annual rattlesnake roundups as a tourist attraction and as an economic development tool.

Miller said that if the snakes are removed from the environment, deer mice could proliferate and the disease could spread.

The disease also could spread because snake hunters will be down on their hands and knees turning over rocks.

The virus can reach people through contact with the rodent's feces, urine, and saliva.

"And it's not unlikely to find a Prairie Rattler in a mouse nest because that's their food," he said.

Greg Crawford, public information officer for the health and environment department, said a decision to halt hunts would have to be made by the Kansas Department of

Wildlife and Parks, which regulates hunting.

Crawford said he didn't know whether anyone in his department was following up on Miller's letter.

Marty Burke, communications coordinator for the Kansas Department of Wildlife and Parks, said he'd never heard concerns such as Miller's before.

Burke said the wildlife and parks department was required by statute to set up the hunts.

He said under regulations, any town west of U.S. Highway 283, excluding those in Morton County, would be allowed to sponsor a rattlesnake hunt with a special permit from the department.

Events are allowed from April 1 through June 15. A rattlesnake hunt, authorized under permit, can last 30 days.

— Lawrence Journal-World, 27 February 1994
(submitted by Alice Brooks, Overbrook)

Editor's note: Although Mr. Burke may not have been personally aware of the concerns Larry has raised, this issue was presented to the Kansas Wildlife and Parks Commission at their final rule making hearing on rattlesnake hunts in January. No one from the Commission or KDWP responded to this concern at that time.

HE'LL SMILE EVEN IF HE LOSES

As the center of attention at a Senate committee hearing, B. T. only seemed to smile.

B. T. is a Barred Tiger Salamander [*Ambystoma tigrinum mavortium*], and hundreds of children from across the state are campaigning to have the species designated the state amphibian.

On Tuesday, the Senate Federal and State Affairs Committee held a hearing on the matter.

Fifth-grader Betsy Hughes from OK Elementary School in Wichita, where the campaign began, gave senators a few reasons why the tiny animal should qualify for official status.

It is found throughout the state, has a black-brown body with large yellow bars, and can grow up to 13 inches long, she explained.

And the yellow markings around its mouth leave an impression that it wears a continual smile.

Kansas already has an official state reptile, insect, animal [sic], bird, tree, flower, song, march, banner, and flag—but no amphibian.

A couple of dozen children and their teachers from Wichita, McPherson, and Topeka were at the state Capitol to argue the need for official designation.

The Wichita group brought along B. T.

The committee took no action Tuesday, but the Barred Tiger Salamander already has cleared one obstacle. An-

other bill promoting a competing amphibian—the Plains Leopard Frog [*Rana blairi*]—died quietly in a House subcommittee earlier in the session.

— Kansas City Star, 9 March 1994
(submitted by Vincent von Frese, Kansas City, Missouri)

SALAMANDER TRIUMPHS IN TOPEKA

Humble but happy, the Barred Tiger Salamander now appears destined for fame as an official symbol of Kansas.

A bill that would make the beady-eyed bug-eater the state amphibian went Tuesday to Gov. Joan Finney, who said she would sign it into law.

"That little salamander is so cute. I'm delighted, and I admire the children's choice," Finney said.

The bill is the result of a campaign led by students of Wichita's OK Elementary, who decided the creature would make a good state symbol because of its friendly disposition and [because it] snaps up bugs.

News of the salamander's triumph traveled fast.

Wichita teacher Alice Potts, who's second-grade class started the crusade a year ago, already knew about it when a reporter reached her Tuesday afternoon in Davis, Calif. She's there visiting her daughter during spring break.

"That's wonderful news," Potts said. "My husband called me this morning and told me. I left him with strict instructions that if anything happened he was to call me."

Potts' class this year picked up on the work started by her second-graders from the year before, writing letters to other school districts, and legislators. Eventually, the whole school — students, staff, and parents — enlisted in the campaign. Potts, principal Judy George, and four students met with Finney, exacting a promise from her to sign the bill if the Legislature ever gave her one.

The school is now crawling, as it were, with the smiling black-and-gold salamanders.

Potts' class is host to BT, sort of the salamander emeritus of the movement. She said that when her class last year first developed a hankering for the amphibian, she had trouble finding any. But when news of the campaign surfaced, people began calling her with available salamanders.

The school now has four others: Mandy, Sal, Tiger, and BT Junior, a smaller animal appropriately assigned to a kindergarten class.

Potts was a bit disappointed that the Legislature acted while school is out, but she said that some sort of celebration undoubtedly would take place when everyone returns.

The amphibian proposal almost didn't survive the legislative session because the House Energy and Natural Resources Committee didn't act on it.

But the Senate saved the idea. Senators amended it

into a House bill that would classify exotic birds, such as ostriches, emus, and rheas, as livestock in hopes of stimulating a bird-breeding industry.

The House voted 103-20 to accept the Senate's amendments on Tuesday, sending the bird-and-salamander bill to Finney.

"Perhaps ostriches will love them (the salamanders) even more," said House Majority leader Vince Snowbarger, R-Olathe. "They'll probably eat them."

Some legislators grumbled about the cost of printing the bill and the time it took to consider it.

They also noted that the state already has an official song, "Home on the Range"; and official march, "The Kansas March"; a state flower; a state tree, the cottonwood; a state animal [sic], the American [bison]; a state insect, the honeybee; a state reptile, the Ornate Box Turtle; a state bird, the western meadowlark; and a state soil, Harney silt loam.

"My concern is that there will be no end to the state stuff," Snowbarger said. "I think we all have proved to our children is that the Legislature does bend to special-interest groups, children being the most powerful of them."

— Wichita Eagle, 23 March 1994
(submitted by David Edds, Emporia)

EDITOR'S NOTE: In spite of Rep. Snowbarger's cynical comments, if our children are not perhaps the most important special interest group in Kansas, what better group's interests are there to serve?

HAYS TEACHER'S SCIENCE COURSE NOW REACHES 14-STATE MARKET

A former Hays elementary school teacher with a fascination for amphibians has developed a science course now being taught in 14 states.

Karen Toepfer's class called "Amphibians as Bio-indicators" is being taught to more than 800 eighth- through 12th graders from 23 schools across the nation.

Each school enrolled in the unit is supplied with a notebook designed by Toepfer, complete with a species account list of all amphibians in their state. Students get survey checklists that they fill out when they go looking for frogs and other inhabitants of the ponds and streams.

Donna Cooper's Hays High School field biology class is enrolled in the unit, along with schools in Greencastle, Pa., Brunswick, Ga., Cocoa, Fla., Omaha, Neb., and Sistrerville, W. Va.

The schools are connected by Internet, a communications network, and each school is paired with a partner to compare data. Hays' partner is Morrill High School in Morrill, Neb.

Toepfer's computer is on-line with the schools in case they need to ask questions. She even has a toll-free phone number so she can answer questions.

Data gathered by the students will be submitted to the Declining Amphibian Populations Task force, an international group of scientists based in Oregon.

"That's how (the task force) hopes to create a nationwide database," Toepfer said.

Toepfer said her son and his neighborhood friends used to come home from their outdoor excursions with snakes, salamanders, and other animals. A former elementary teacher with a degree from Fort Hays State University, Toepfer would accompany the children to the local library to read up on the animals.

"I really got bit with the bug and realized there probably was a need for some public education," she said.

Her own interest grew, and in 1989 she joined the Kansas Herpetological Society, a conservation-based group with 300 members around the world. In 1992, she became [the group's] secretary/treasurer.

Her participation in the herpetological society prompted her to look around Ellis County and her "own back yard" to see what amphibians and reptiles she could find.

"It was while I was in the process of the two-year study it hit me kids could do this and take a look at what's in their own back yard, so to speak," she said.

A friend of Toepfer's, Mary Kalen Romjue, took a job with the Nebraska Department of Education coordinating a distant learning project.

"She was looking for five different environmental science units to be done with ninth- and 10th-grade students for the distant learning project," Toepfer said.

Toepfer suggested a unit on local amphibians, and Romjue pitched it to the Nebraska Department of Education, which delivers the environmental science projects across the nation via satellite and computer. Her idea was one of the five units.

She enlisted the help of professionals such as James Platz, professor of biology at Creighton University in Omaha.

— Wichita Eagle, 28 March 1994
(submitted by David Edds, Emporia)

ANGLERS, HUNTERS NEED TO PUSH FOR PROPER HANDLING OF FUNDS

It's time the anglers and hunters of Kansas got involved with what is happening to the money they pay into the wildlife fee fund through the purchase of hunting and fishing licenses.

And, more importantly, to the essential money Kansas receives in the form of federal aid to fisheries and wildlife management.

I am referring to the federal audit of the Kansas Department of Wildlife and Parks that was conducted by the Department of the Interior. The audit found that KDWP had, from 1989 through 1992, diverted \$2.4 million of license money into ineligible, non-fisheries/wildlife related expenditures.

This story has been in the news since last year but public and media interest in the misuse of your money is virtually non-existent. It would seem the only things that upset people are when they lose a segment of the duck season or might have to buy a license to fish or hunt if they are over age 65.

If you don't understand the significance of the audit, or what it means to you as sportsmen and sportswomen, then what follows is an explanation of how the federal aid system works.

In 1937, the Pittman-Robertson Act, of Federal Aid in Wildlife Restoration Act, was passed to help all states fund wildlife management programs. In 1950 the Dingell-Johnson Act, or Federal Aid in Sport Fish Restoration Act, was passed to help states with their fisheries management.

These two programs authorize the U.S. Fish and Wildlife Service to collect, from the manufacturer, an excise tax on firearms, ammunition, archery equipment, fishing rods, other fishing tackle, and motorboat fuel. The tax is added to the base cost of each product before it is shipped from the factory.

The funds from the tax are apportioned to each state according to its land area, population, and the number of hunting and fishing licenses it sells.

The more licenses sold, the more money Kansas is eligible to receive. Presently, Kansas receives about \$7 in federal aid for each \$13 fishing or hunting license sold.

Management projects related to fisheries and wildlife are developed by each state, and in many states, must be approved, in advance, by the U.S. Fish and Wildlife Service under the provisions set forth by the P-R and D-J Acts.

Kansas, unlike many states in the federal aid program, was given relatively free rein by the USFWS to develop and complete federal aid projects under the Comprehensive Planning Program.

The USFWS allowed KDWP to develop and complete projects as long as they met the strict provisions outlined by the federal aid programs. And that is where the problems began to occur.

More than two years ago, word began leaking from inside KDWP about the diversion of fisheries funds into state park projects and other ineligible activities. Agency officials, when asked about the diversion of fisheries funds into state park projects and activities, said all expenditures were legal, saying that a few "disgruntled employees" were unhappy because their projects were not being funded.

In October 1992, Frank Schitoskey, USFWS chief of federal aid operations in Denver, said he was inspecting

records of KDWP expenditures when he noticed several projects that may not have been eligible for federal funding.

To insure that money was being properly spent, something the General Accounting Office in Washington has mandated, Schitoskey asked the Inspector General of the Department of the Interior to conduct an audit relating to federal aid expenditures in Kansas.

The initial audit, released in October 1993, revealed that Kansas may have diverted as much as \$4.4 million from the state wildlife fee fund into ineligible projects.

Ted Ensley, secretary of Wildlife and Parks, answered by saying the problem was a difference in bookkeeping procedures, and that everything Kansas did was within the federal frameworks.

On Dec. 15, Ensley submitted a formal response outlining that his agency had done nothing wrong, except for the ineligible spending of \$845,000 to build roads at Hillsdale and El Dorado State Parks. He added that Kansas lacked the funds to repay any diversion and indicated that KDWP might have to drop out of the federal aid program.

The final decision, made by the USFWS Region 6 office in Denver, was released March 7. It concluded that KDWP had diverted \$2.4 million of the hunter/angler money from the wildlife fee fund into ineligible projects.

Since then, Ensley and his top aides have spent much of their time trying to discredit Schitoskey instead of owning up to the diversion.

Ensley has gone so far as to ask Gov. Finney to lobby the Secretary of the Interior to determine whether Schitoskey had the authority to put Kansas into diversion.

There seems to be a perception in Topeka that one federal employee in Denver has taken a personal dislike for Kansas and acted on his own authority to withhold federal funds.

A more likely scenario is that one federal employee saw federal license revenue money being misspent and did his job. Schitoskey's decision to put Kansas in diversion was approved by the federal chain-of-command, all the way to Washington.

KDWP currently receives about \$5.5 million each year in federal aid, about 18 % of its total annual operating budget but 100% of the Fisheries and Wildlife Division budget. It is money that KDWP, an agency that represents all Kansans, cannot afford to operate without.

At this time, \$4 million is being withheld from KDWP until it develops an approved plan to repay the \$2.4 million into the state wildlife fee fund. An additional \$5.5 million will be withheld if a plan has not been approved by June 30. Another part of the diversion agreement is KDWP must be independently audited for the years 1993 and 1994.

If the Kansas Legislature doesn't appropriate money to repay the diversion, then all Kansans, who have paid their dues in the form of license fees, will suffer lost

outdoor opportunities, particularly those who fish.

This is a critical period for KDWP and the natural resources it manages with our license fee money. The agency is staffed with hundreds of hard-working professionals who want to move forward to improve our fisheries and wildlife areas.

The time has come for KDWP officials in Topeka to stop blaming others for the diversion of funds. Instead, they should turn their attention to paying back funds that were misspent on a park system, which should be funded through user fees, and not by the anglers and hunters of Kansas.

— Steve Harper, Wichita Eagle, 20 March 1994
(submitted by David Edds, Emporia)

EDITOR'S NOTE: Although the preceding article may not have an obvious connection to Kansas herps, it has enormous implications for the creatures with which we are concerned. Note that these federal moneys fund 100% of the Fisheries and Wildlife Division, which administers and funds all non-game species projects by KDWP. At the time of this writing, the state Legislature was leaning toward not making additional funding available to compensate for the federal diversion. Without these funds, you can kiss these programs good-bye, folks. Coupled with several tens of thousands of dollars of Chickadee Checkoff (intended expressly for non-game species) funds which were spent wrongly last year, it is obvious that certain individuals in KDWP have little regard for their constituency and the natural resources that are charged to protect. The behavior of Secretary Ensley and others in his administration in regards to these matters is outrageous. *Somebody* must be held accountable for these actions which, if they do not actually constitute fraud, border perilously close to it. I urge all of you who may be upset by these matters to contact the governor, your local legislators, the chairpersons of the Energy and Natural Resources committees of both houses of the Legislature, and the Wildlife and Parks Commission and demand an accounting of who was responsible, whether or not they were disciplined, and how this problem will be solved. If it is not solved, the future of non-game species in this state is grim, and it wasn't that great to begin with.



FEATURE ARTICLES

KANSAS HERPETOLOGICAL SOCIETY POSITION PAPER REGARDING RATTLESNAKE ROUNDUPS

BY

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AND
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Approved by the KHS Executive Council
January, 1994

Section 1. Purpose

The Kansas Herpetological Society, on the occasion of its twentieth annual meeting in Emporia, Kansas, November 6, 1993, voted unanimously to adopt a resolution reaffirming its opposition to "rattlesnake roundups" in Kansas and elsewhere. It is the intent of this paper to support, using the available literature, the resolution and the reasoning upon which it is based.

KHS Resolution Opposing Rattlesnake Roundups

Be it hereby resolved that the Kansas Herpetological Society, a 200-member organization dedicated to conservation and education concerning amphibians and reptiles, on the occasion of its twentieth annual meeting in Emporia, Kansas, November 6, 1993 reaffirms its opposition to "rattlesnake roundups". The KHS has been on record since 1974 as opposing events of this type because they are environmentally destructive, because of their cruel and inhumane treatment of snakes, because of the danger to participants and spectators from careless snake handling, and because they present attitudes toward wildlife that encourages its over-exploitation and destruction.

We also oppose the Kansas commercialization of Western Rattlesnakes (*Crotalus viridis*) enacted by Senate Bill 137 in 1993. Life history information suggests that commercial harvest cannot be sustained. Studies of the effects of "roundups" on Western Diamondback Rattlesnakes (*Crotalus atrox*) in Texas indicate significant long-term consequences for those populations. Thus we recommend the State of Kansas make funds available for continuous research to address what effects additional mortality will have on Kansas populations of prairie rattlesnakes, and to further investigate the biology of the species.

If "rattlesnake roundups" must occur, we encourage Kansas Department of Wildlife and Parks to adopt conservative regulations regarding bag and possession limits, humane treatment of snakes, length and timing of season, minimum and maximum size limits, and area and extent of any such hunts. The KHS supports protection against commercialization of reptiles and other wildlife in Kansas, including KSA 32-1002, which makes it unlawful to take wildlife, including reptiles, for sale, exchange, or other commercial purposes, and KAR 115-20-2, which establishes a possession limit of five for reptile species.

Section 2.1 Environmental concerns - Harvest at non-sustainable levels

"It's not an endangered species, and it never will be."
John Shaddix, snakeskin dealer

The original intent of rattlesnake roundups was to rid certain areas of rattlesnakes. The goal was (and still is, in many instances) to gather and destroy as many rattlesnakes as possible. The incentive has since shifted from eradication of a perceived threat to the gaining of profit, but the ecological ramifications remain the same, if not worse. Seven rattlesnake species have been listed as threatened or endangered in one or more of fifteen different states, owing fully or in part to commercial exploitation (Ashton 1976).

Roundup proponents often cite the large and sometimes increasing numbers of snakes harvested each year as evidence of harvest sustainability. However, the increase, or at least lack of decrease, in the number of Western Diamondback Rattlesnakes (*Crotalus atrox*) harvested in Texas each year is likely a function of increased hunting effort (i.e., more hunters covering a larger area and using more intrusive methods) rather than being evidence of

harvest sustainability (Campbell 1989). Comments by hunters at Freer, Texas, indicated that many snakes had been brought in from long distances, and that most had been collected using gasoline (see section 2.2). It is also common for snakes to be stockpiled for several weeks prior to the actual roundup, and some roundups purchase "left-over" snakes from earlier roundups (Fitch and Pisani 1988). These factors make accurate counts of the actual take unattainable.

Snakeskin dealer John Shaddix claims that western diamondbacks are so prolific they will never be hunted to extinction: "There are numerous areas so overpopulated that we'll never be able to hunt the rattlesnake out. Ever. Not ever." (Shaddix 1989, quoted in Weir 1992). Recall that similar claims were made with regard to the American Bison. Any such claims by roundup sponsors or snake dealers must be questioned in that these people typically have no formal education in population biology, they have done no scientific research on the population dynamics of snakes, and they all have a financial incentive to make such claims. In another example, rattlesnake "hunter" Marie Harris suggested that there should be no bag limit on rattlesnakes in Kansas, and supported her position on the assertion that a decrease in prairie dog populations has caused an increase in rattlesnake populations (Kans. Dept. Wildlife & Parks, Minutes of Comm. Mtng., May 13, 1993). The Western Rattlesnake (*Crotalus viridis*) native to Kansas feeds on Prairie Dogs and uses their burrows for shelter (Collins 1993). Any decrease in the availability of food and shelter for a species will cause a decrease in populations of that species, not an increase. Ms. Harris has succeeded in demonstrating her ignorance of population biology. Any species, no matter how prolific, can be hunted to extinction.

Indiscriminate collection of the Western Rattlesnake (*Crotalus viridis*) may cause drastic reductions in their numbers (Parker and Brown 1974). The Western Rattlesnake may be particularly vulnerable due to a high concentration of animals at winter dens, late maturity of females (first reproduction at age 4 or 5 years), and a bi-annual reproductive cycle. Den raiding, a common means of procuring snakes for roundup events, may be particularly detrimental to populations of *C. viridis*. Klauber (1972) reported on seven *C. viridis* dens that were raided repeatedly for a period of 14 to 24 years. At the onset, these dens produced as many as 89 snakes in a single raid. In later years, three of the dens no longer contained any snakes, and the maximum number obtained in any single raid was 8.

Strict regulations regarding harvest may not be sufficient to protect some species from eradication. In Pennsylvania, harvest of the Timber Rattlesnake (*Crotalus horridus*) is limited to two snakes per day or in possession, and roundup participants are encouraged to release them immediately and unharmed in the area of capture (Brown

1993). Despite the strict regulations, the Timber Rattlesnake is listed as a candidate species for threatened or endangered status in the state (*C. horridus* is already listed as endangered in Connecticut, Massachusetts, New Hampshire, New Jersey, Virginia, and Vermont, and threatened in New York and Texas (Brown 1993). Research suggests that 75% of the rattlesnake dens in Pennsylvania are below population levels considered viable (Martin et al., 1990; Smith et al. 1991). Essentially, these dens are doomed to extinction regardless of future action. This is a direct result of harvesting at non-sustainable levels, particularly the high exploitation of reproductive females which occurs during organized roundups (Martin et al., 1990).

Large-scale, localized harvesting associated with rattlesnake roundups can have drastic long-term effects on snake populations. As population density decreases, the reproductive output of the population decreases. This is not only a function of there being fewer snakes, but also of the increased difficulty of finding mates. Snakes do not run or fly. The limited ability of snakes to move over long distances may pose a significant barrier to locating potential mates in low density populations.

Low population numbers often also means reduced genetic diversity. Small populations are also more profoundly affected by genetic drift, a random process that tends to reduce genetic diversity. Whenever the genetic diversity of a population is reduced, that population becomes more susceptible to disease, flood, drought, and other environmental changes.

The effects of overharvest are not limited to the rattlesnakes themselves. In Kansas, 16 species of raptors feed on snakes (Thompson and Ely 1989). This does not include other non-bird-of-prey species that feed on snakes, nor does it include species not found in Kansas. As a predator, an individual rattlesnake will feed, on average, once every two weeks (Klauber 1972), thus any one snake may eat 15 to 20 rodents per year. The Sweetwater, Texas, rattlesnake roundup (advertised as the world's largest) has resulted in the capture and killing of up to 18,000 snakes at a single weekend event (Weir 1992). In effect, Sweetwater allows 360,000 rodents to survive and propagate each year. Warwick et al. (1991) estimate that the annual take of rattlesnakes in the United States tops 500,000. Rattlesnakes are an integral part of their natural ecosystems, as both predator and prey, and the removal of large numbers of snakes may have a significant effect on other species.

Section 2.2 Environmental concerns - Gasoline Usage

"Some hideouts would take
an Exxon Fuel Truck to gas."
Rick Womack, Lancaster, Texas, 1993

One means of coercing an animal from its hiding place is to spoil the place. For rattlesnake "hunters" this is

frequently accomplished with the nearly effortless squeeze of the trigger on a garden sprayer filled with gasoline and aimed into any suspect hole, crack, or crevice. "Conscientious hunters" insert a tube-like listening device into the hole prior to "gassing" to determine the presence or absence of an animal (Williams 1990). When an animal is discovered, the spray nozzle of the device is placed in the hole. "Hunters" are careful to aim for the back of the hole (to drive the animals forward as opposed to back further into the hole), and inject gasoline into the earth. The fumes and drowning effect of the gasoline force dazed and poisoned animals from their homes as easy prey to "hunters." This technique has been broadly discussed by interviewers with "hunters" and the conclusions are all the same: although it is blatantly illegal, the majority of the snakes brought into long-standing roundups are captured using gasoline (Lawler 1993). In fact, many veteran "hunters" have expressed concern that novices use too much gasoline and ruin the collecting site for years (Campbell 1989). Veteran "hunters" are still using gasoline, but in more sparing quantities. "...gas was used in excess when getting them out of the dens, possibly a lot were killed at that time, needlessly." (Henson 1993). In effect, they have discovered habitat destruction. Some, in attempts to appease concerned parties, have switched from gasoline to ammonia (Lawler 1993), which has its own suite of potential environmental hazards.

Intentionally spilling hazardous materials is against fire safety regulations and wildlife protection laws in many states, including Oklahoma (Oklahoma 800:25-7-7) and Kansas (Kansas Department of Wildlife and Parks Amphibians and Reptile Regulation 115-20-2). This activity is illegal for a variety of reasons, not the least of which is the threat of groundwater contamination, the risk of igniting a fire or explosion, and the high potential for the demise of other animals, including threatened and endangered species. In addition, the sale of meat drenched in gasoline is also illegal because of possible health risks associated with consumption. Cox and Meinzer (1991) note that gassed snakes may absorb potentially carcinogenic hydrocarbons.

It has repeatedly been shown that gassing has ill effects on not only the target animal (i.e., rattlesnakes) but also those which share its habitat. Many species make use of the burrows which the snakes frequent. Thus "hunters" are likely to poison residents such as skunks, fox, opossum, small mammals, amphibians, and other reptiles. Threatened and endangered species also fall victims to this gassing practice. For example, Gopher Tortoises (*Gopherus polyphemus*), a federally threatened species (Williams 1990), and Indigo Snakes (*Drymarchon corais*), a threatened species in Florida, Georgia, and Alabama (Ashton 1976), have been gassed inadvertently (Clarke 1978; and Speake 1980). In fact, Gopher Tortoise burrows are the main target for gassing in the southeast, as they are a critical

habitat of Eastern Diamondback Rattlesnakes, *Crotalus adamanteus* (Conant and Collins, 1991). Additionally, because the habitat is polluted, it is no longer fit for use by other animals, including federally protected species. Burrowing Owls, for example, use the burrows as nest sites (Thompson and Ely 1989). Egg laying and the underground hatchling stage occur throughout the spring, when rattlesnake roundups primarily occur. It is noteworthy that the distress call of the subterranean hatchlings closely mimics the rattling of the Western Rattlesnake, *Crotalus viridis* (Martin 1973). Thus, many animals with similar life behaviors are unfortunately mistaken for the target species.

Furthermore, the toxic effects of gasoline on the animals is significant enough that many die or suffer from a reduced capability to provide for themselves. In an experiment by Campbell et al. (1989), rattlesnakes, other snake species, lizards, toads, and crickets lost sensory perception and motor control when exposed to gasoline. The foraging capabilities of exposed lizards and toads were also tested, which revealed a strong correlation between exposure and food intake. The toxin permanently damages the sensory systems of the animals, which results in a reduced ability to carry out life functions such as feeding, locating shelter, and reproducing. Thus, it can be deduced that even those animals that survive the gassing event may have a severely reduced life span. Gassed animals retained in captivity typically have a maximum life span of one year (Warwick et al., 1991).

Section 2.3 Environmental Concerns - Habitat Destruction and Species Eradication

"The broad-ranging destructiveness of these roundups is well known..."
Warwick 1992

Much popular concern is focused on the broad-ranging causes and effects of habitat destruction. While no single action necessarily destroys a habitat, each erodes the integrity of the system. An example is soil erosion. Each rainfall washes away only a small amount of topsoil. But overall, the United States loses 6.4 billion tons of soil to erosion each year. The same is true for natural habitats which are encroached upon by urbanization, agriculture, and consumptive use of resources.

The once extensive habitats of many species of rattlesnakes, including the Timber (*Crotalus horridus*), Eastern Diamondback (*Crotalus adamanteus*), Western Diamondback (*Crotalus atrox*), and Western (*Crotalus viridis*) rattlesnakes most commonly targeted by roundups, have been largely destroyed or fragmented by urbanization and agriculture. Urbanization destroys rattlesnake habitat. Cities supply no suitable food or shelter for rattlesnakes. Agricul-

ture tends to fragment the available rattlesnake habitat. Rattlesnakes, like all animals, require both food and shelter to survive. Cropland may provide a food source (rodents), but provides little shelter. Rattlesnakes require specific types of shelter, particularly in winter when they must remain below the frost line to avoid freezing. Hibernacula usually consist of mammal burrows or crevasses in rock outcrops. Plowing destroys both such habitats, restricting snakes to rangelands where there remains an abundance of mammal burrows, rocks, and other suitable shelter.

One widely accepted method of locating snakes is to overturn every conceivable shelter, such as rocks, fallen trees, and so forth. Examination of "hunting" areas in the vicinity of Waurika, Oklahoma, revealed that 76% of potential snake shelters were investigated by roundup participants. Of these, 96% were misplaced so that they lay flat on the ground and were no longer suitable shelters (Warwick et al 1991). Some shelters may be rendered unsuitable even without physical disturbance. Timber Rattlesnakes may abandon prime habitat for five years or more if exposed to repeated human harassment (Brown 1993). Presumably the snakes leave to escape human odors, trampled vegetation, and rattlesnake musk, all of which will be present in an area where rattlesnakes are taken for roundups.

The existence of rattlesnake roundups is a profound human intrusion into the remaining fragments of suitable habitat. The systematic removal of many individuals from an area (section 2.1), the use of gasoline and other chemicals to force animals from their shelter (section 2.2), the excavation of holes and rock outcrops, and the mere increased presence of humans associated with roundups may all contribute to habitat degradation and localized extirpation of rattlesnakes.

Section 3.1 Public Health Concerns - Increased Risk of Bites

"...and you will strike his heel."
Genesis 3.15

"...a self-professed teacher of safety,
he has been bitten 42 times..."

Weir 1992, referring to a Sweetwater Jaycee's showman.

Proponents of rattlesnake roundups frequently defend their actions as means of reducing snakebite incidents. Their logic is that fewer snakes will lead to fewer bites. There is not, however, any indication that rattlesnake roundups reduce the number of snakebites to humans (Lawler 1988). In fact, rattlesnake roundups may increase the number of snakebites. Approximately two thirds of all reported snakebites are considered "non-accidental": the victims were either handling a venomous snake or otherwise knowingly placing themselves in the immediate prox-

imity of a venomous snake (Wingert and Chan 1988, Curry et al. 1989).

In addition to increasing the risk of snakebite by default (i.e., by holding the event in the first place), roundup sponsors actually encourage high-risk activities such as collecting by hand, sacking contests, and lifting contests. Fitch and Pisani (1988) observed two people bitten as they participated in a "sacking contest" at a Waurika, Oklahoma roundup. A Texas snake handler was bitten on the lip while kissing a rattlesnake (Lueck 1975). In a similar incident, a 43-year-old man spent several days in intensive medical care after suffering five rattlesnake bites, including several to his tongue and lip. The bites occurred as he was biting the head off of the snake because "it bit me first" (N.C.S. News 1993). Such activities unquestionably run counter to the mission of reducing snakebites.

The severity of envenomation appears to be related to the level of arousal of the biting animal. Handling or otherwise antagonizing an animal produces more aggressive biting behavior, resulting in deeper fang penetration and the injection of more venom. Non-accidental bites thus tend to be more severe than accidental bites (Dart et al. 1992). Examination of the seasonal distribution of permanent disability following pit viper envenomation shows the highest frequency (50%) during the months of January, February, and November, and the lowest frequency (10-20%) in April through October. This is of particular interest because bites sustained in January, February, and November are undoubtedly non-accidental due to the seasonal inactivity of the snakes. In addition, those people who handle venomous snakes risk envenomation to the upper extremities, trunk, and head (see examples above). These areas are more likely to suffer permanent disfigurement and dysfunction than are the lower extremities typically affected in accidental cases. Because venom lethality and biting aggressiveness seem to peak during the summer (roundup) months (Gregory-Dwyer, et al. 1986), it may be that non-accidental bites occurring in the summer are the most serious (Dart, et al. 1992).

Death following pit viper envenomation occurs in 10-25% of patients when appropriate medical care is not available (Dart et al. 1992). With appropriate medical treatment, mortality is typically less than 1%. Unfortunately, the medical profession is sometimes poorly educated on snakebite treatment, and there are many inappropriate treatments available (Lichtenhan 1993). In addition, many hospital emergency departments, hospital supply departments, pharmacies, and cities do not have available the quantity of antivenin necessary to treat severe envenomation (Snyder and Knowles 1988). Furthermore, many reported deaths may have been due to inappropriate treatment of bites rather than to direct action of the venom itself (Smith 1982). In spite of the fact that medical treatment is often less than adequate, roundups continue to be centers

of daredevil antics and foolhardy bravado. At least two deaths can be attributed to bites sustained during roundup activities (Williams 1990; Dart et al. 1992). Death, however, is not the only serious consequence of snakebite. Permanent effects of pit viper envenomation include, but are not limited to, the loss of part or all of the bitten extremity, contractures, joint stiffness, partial blindness, tetanus, and acute renal failure (Dart et al. 1992). In addition, a victim of serious snakebite can expect medical costs of, on average, \$15,000. This should be of particular concern to those small communities struggling to save their failing economies. Sponsoring organizations, hometown businesses, and individuals are at risk of litigation.

Perhaps the most discomfiting aspect of rattlesnake roundups from a public safety perspective is that many such events are advertised as family entertainment. The Sharon Springs, Kansas, rattlesnake roundup advertises "children's displays." and invites the public to "bring the whole family." The Fangs and Rattlers group from Granbury, Texas advertises their carnival-like show as "family-oriented." Their advertised "safety talks" consist of walking barefoot among rattlesnakes, displaying snakes' fangs, allowing children to pet rattlesnakes that are coiled and pressed between two hands, and placing a person in a sleeping bag with about 20 rattlesnakes and then kicking, stomping, and shaking the sleeping bag while telling well-rehearsed jokes (Reiserer and Reber 1992). Children learn to idolize those who display reckless machismo with regard to rattlesnakes. Inevitably, some children will try such things themselves. The death or disfigurement of a child is a steep price to pay for a weekend of "family entertainment."

The severity of a snakebite is related to the amount of venom received relative to the size of the victim. Bites to children are therefore typically more severe than those to adults. Children may require up to five times as much antivenin as an adult (Klauber 1972), increasing the risk of serum-related complications as well as making the treatment much more costly.

Notwithstanding the proponents claims of decreased incidence of snakebite, rattlesnake roundups cause snakebites, and these bites are often more severe than those that occur accidentally. Children may be placed at increased risk, as they are taught to idolize those who engage in reckless tricks and antics with live rattlesnakes.

Section 3.2 Public Health Concerns - Gasoline Usage

The hazards of intentionally spraying gasoline into the ground are not limited only to wildlife. People and livestock are also placed at risk by this tactic. According to Paul Belt, supervisor of the Hazardous Spills Division of the Kansas Department of Health and Environment, purposeful dumping of gasoline is illegal in Kansas (KAR 65-71-

D, KAR 28-48-1, KAR 28-48-2) because of the potential groundwater pollution and increased risk of fire or explosion (Belt, pers. comm.).

Any chemical introduced into the ground will eventually leach into groundwater. In many rural areas, groundwater is the principal source of drinking water for humans, as well as livestock. More directly, people who eat the meat of snakes captured with gasoline may be at even greater risk. Campbell et al. (1992) list some potentially hazardous components of gasoline. These include aromatic and paraffinic hydrocarbons, which have caused tumors in the liver, skin, and kidneys of laboratory animals; benzene, which has been linked to higher incidence of leukemia in humans; and ethylene dibromide and ethylene dichloride, both of which may cause genetic mutations and tumors. Leaded gasoline also contains tetraethyl lead, which is toxic to the nervous system, blood, blood forming tissues, gastrointestinal tract, liver, pancreas, and kidneys. Gassed snakes may absorb dangerous amounts of one or more of these chemicals (Cox and Meinzer 1991). Consumption of water or meat exposed to gasoline places humans and livestock at considerable risk.

The chances of fire and explosion are greatly increased by gasoline use. When gasoline is sprayed or dumped into the burrows and tunnels which rattlesnakes inhabit, it is no longer controlled. Therefore, it could travel throughout the tunnel system or the groundwater system. The high degree of overlap in areas hunted during a roundup increases the likelihood that one "hunter" will drop a cigarette where a previous hunter sprayed gasoline. Gasoline ignited on the ground will cause a fire; gasoline ignited in the confines of an animal burrow will cause an explosion.

Section 3.3 Public Health Concerns-Handling of meat

"Try it, it tastes just like chicken!"

There are many laws regarding the butchering and sale of meat. According to Jerry Vornholt of the Kansas Department of Health and Environment, Bureau of Environmental Health Services, Food and Drug Division, meat that is sold in Kansas must undergo rigorous inspection prior to sale. The butchering process, including the butchering facility, and the composition and nature of the meat itself must be approved by the Kansas Department of Health and Environment (KS. Public Health Law 65, Article 6a). If it is suspected that meat is tainted by gasoline, or any other substance such as ammonia, it must be tested in a laboratory prior to sale (Jerry Vornholt pers. comm.). Sale of such "adulterated" meat for human consumption is a felony offense (65-6a40). In essence, the meat at the Sharon Springs rattlesnake roundup is from an unapproved source, and therefore is illegal to sell for human consumption. Other states undoubtedly have similar laws.

Additionally, the discovery of the presence of *Salmonella* in snakes calls for increased concern over the handling and consumption of rattlesnake meat. The bacteria have been found on both living and non-living parts of snakes and in wild populations of *Crotalus viridis* (Grier, et al. 1993). Salmonellosis has been, in the past, a significant enough public health issue to change laws regarding the sale of turtles in pet stores and even the cooking of eggs in restaurants. The public, in general, has been advised to use extreme caution in handling meats such as poultry. Thus, it is conceivable that the Kansas Department of Health and Environment would also have grave concerns about the sale of meat which potentially harbors *Salmonella*.

Section 3.4 Public Health Concerns-Potential Spread of Rodent-Borne Diseases.

Rattlesnakes feed almost exclusively on rodents. It is estimated that the annual take of rattlesnakes in the United States exceeds 500,000 (Warwick et al. 1991). An individual rattlesnake will eat, on average, 15 to 20 rodents per year (Klauber 1972). In effect, each year rattlesnake roundups allow ten million rodents to survive and reproduce.

There has been some concern that drastic, localized reduction in rattlesnake populations, and the subsequent rise in rodent populations, may increase the incidence of rodent-vectored diseases, specifically, the rodent-vectored hantavirus (Toplikar 1994). There is currently no evidence to support or refute this claim. In Kansas, both rattlesnake roundups and hantavirus are relatively new developments. To date, there have been two rattlesnake roundups and two fatalities from hantavirus. It may be worthwhile to monitor the future incidence and geographic distribution of hantavirus in relation to that of rattlesnake roundups.

Section 4. Cruel and Inhumane Treatment

"...he will strike your head,..."
Genesis 3.15

Rattlesnake roundups are often condemned on the grounds that they are cruel to the animals. In turn, some roundup proponents claim that scientists are cruel to snakes by cooling them in ice water prior to examining them, by force-feeding them, by placing them on long-term public display, and by sacrificing them to museum collections. It is important to distinguish the stress and discomfort inflicted on animals for the greater good of education and scientific discovery from the pain and suffering inflicted for amusement purposes. Essentially, scientific research is justifiable, sadistic cruelty is not. Although what may constitute sadistic cruelty is largely subjective, certain aspects of many roundups are inarguably such.

A nearly ubiquitous practice at roundups is the stockpiling of snakes for several weeks prior to the actual event in order to maximize the number of snakes on public display. Sponsors assume that more snakes will attract more people and thus generate more income. However, research on Texas rattlesnake roundups indicates that there is no correlation between the number of snakes taken and public attendance (Adams et al, 1991). Nevertheless, animals are crowded into crates and kept without food or water until the crates are opened on roundup weekend. In some cases, the enclosed snakes are found dead and in advanced stages of decay. Death of boxed snakes may be due to suffocation beneath the accumulated mass of snakes, fatal capture-related injuries, or envenomation by other snakes (Fitch and Pisani 1988). This type of cruelty occurs largely out of ignorance. When questioned about why captive snakes were not fed or watered, an Oklahoma snake handler stated that rattlesnakes only eat once per year and that they obtain moisture from the air with their tongues (Clarke 1978), when in fact the animals may feed 20 times per year, and drink the equivalent of their own body weight in liquid water per year (Klauber, 1972). The people who "care" for the snakes simply do not understand the requirements of animals in their care, and the animals suffer as a result. Other types of mistreatment are more overt and deliberate.

Snake handlers at various roundups have been observed breaking the fangs out of live snakes' mouths; using excessive force to stretch prize-winning snakes during measurement (Wille 1976); burning snakes with cigarettes; funneling snakes full of liquor; cutting rattles off of live snakes; using a golf club to "put" coiled snakes; and juggling live snakes, allowing them to drop to the floor (Clarke 1978). In general, care and caution are ignored in a vulgar display of machismo, resulting in unnecessary rough treatment of the animals. Snake handlers in Waurika, Oklahoma routinely sew shut the mouths of several snakes to be used as props. The process is done with the animals fully conscious and is undoubtedly a painful and traumatic experience for the snake (Fitch and Pisani 1988). Lawler (1988) observed a device consisting of a sharpened barb pointing outward and welded into the crook of a standard snake hook. The only possible purpose of such an instrument is to deliberately puncture the snakes handled with it. At the conclusion of a roundup in Texas, all remaining snakes were thrown into a pile, doused with gasoline, and burned alive (Lueck 1975).

Many roundup participants view the roundups as an insidious revenge on the rattlesnake. Numerous individuals become agitated and even hostile at the suggestion of some consideration for the snakes. Promoters at a Whigham, Georgia, roundup even expressed surprise at concern for a Gopher Tortoise whose shell had been crushed by careless excavation (Lawler 1988). A public address announcer at a Sharon Springs, Kansas, roundup reminded the public

that these are the biblical serpents, cursed throughout the ages (Edds 1992).

One particular concern with regard to the mistreatment of animals is that many roundup events are advertised as family entertainment. Children who attend roundups are taught that wildlife is for humans to use and abuse as they see fit. Children (especially boys as they watch the "tough guys" juggle snakes and burn snakes with cigarettes) are taught that "real men" can prove their masculinity by abusing, and thus "conquering," animals many perceive as dangerous. In Sharon Springs, Kansas, children were invited to participate (for a small fee of course) in the torment of rattlesnakes via "balloon fishing" (Reiserer and Reber 1992). Not only did young children antagonize the animals by waving inflated balloons over the snake's heads, but the attendant stomped directly and repeatedly at the animals in an effort to elicit a strike.

One goal of the Kansas Herpetological Society is to encourage conservation of the world's wildlife by instilling an appreciation and understanding of the natural world in our children. This goal is shared by other organizations, zoos, museums, and wildlife agencies around the world. The insensate nature of rattlesnake roundups seriously undermines our success in reaching these goals.

Section 5. Promotion of negative attitudes towards snakes

"...cursed are you among all animals..."
Genesis 3.14

Perhaps the most profound negative effect of rattlesnake roundups is that they promote attitudes toward wildlife that encourage its over-exploitation and destruction. The roundups typically show a blatant disregard for sound wildlife management practices and hunter ethics. In addition, the cruel treatment of snakes for entertainment purposes reinforces the archaic and inane idea that snakes are "bad" animals and deserve to be treated inhumanely. Furthermore, roundup promoters and showmen are often deliberately fraudulent in an attempt to generate animosity toward rattlesnakes and to justify their own actions.

The original intent of the first roundups was to exterminate rattlesnakes. "In 1958, a group of ranchers got together to rid the area of rattlesnakes.... Thus was born the rattlesnake roundup." (Sweetwater Jaycees, 1990). This hardly constitutes sound wildlife management. Roundups continue to encourage overharvest of snakes, regardless of any laws prohibiting such. In April of 1991, a Moscow, Kansas man was cited by Kansas Department of Wildlife and Parks officials for possession of 86 Prairie Rattlesnakes. The man said he planned to take the snakes to Oklahoma to sell at a roundup. At the time, the possession limit for Prairie Rattlesnakes in Kansas was five, and

commercial harvest was illegal (Shoup 1991).

As with the large numbers taken, the methods of take also run counter to the ethics of sport hunting. Chief among such methods is the practice of gassing. Weir (1992) had the following comments with regard to gassing and hunter ethics: "Spraying snakes while they are sleeping in their dens is not sport; it is slaughter by chemical extermination. An analogous form of deer hunting would be to fence the woods, leaving only a narrow opening at one end, and then burn the forest, shooting the deer and other animals as they run through the gate. Such methods are hardly sport." As long as irresponsible "hunting" persists, people will continue to believe that snakes are not a resource worth conserving.

In addition to subverting concern for sustainable harvest and ethical hunting, roundups also send the distinct message that snakes are "bad" and are not worthy of such concern. In fact, teasing, prodding, kicking, and even throwing are the norm for the way these animals are treated at roundups. Public perception of a species is primary to responsibly managing that species. As long as abusive treatment persists, people will continue to believe that snakes are not worthy of anything more. Ultimately, the public is led to believe that snakes somehow deserve to be abused and exterminated.

Many roundup promoters and showmen deliberately attempt to turn the public against rattlesnakes through gross exaggerations of the threat the snakes pose to human interests. Foremost on the list are exaggerations of the risk of being bitten. Judie Withers, co-chairperson of the Wallace County (Kansas) Rattlesnake Roundup Committee, stated that the people of Wallace County "generally live in fear of the prairie rattlesnake" (Withers 1992). Perhaps residents do live in fear, but such fear is certainly unjustified. Contact with hospitals in northwest Kansas revealed the following with regard to the incidence of snakebites: "haven't seen any for a long time" (Northwest Kansas Medical Center, Goodland, Kansas); "maybe one in five years, never anything very severe" (Greeley County Hospital, Tribune, Kansas); "none in five years or more" (Citizens Medical Center, Colby, Kansas); "none in a long time" (Colby Family Health Clinic, Colby, Kansas); "not any, really" (Wichita County Hospital, Leoti, Kansas); "one in early fall 1992" (Cheyenne County Hospital, Cheyenne, Kansas). Apparently in the latter case, the victim received some medical treatment one week following the bite (it is interesting to note that the first Wallace County Rattlesnake Roundup was held 4-6 September 1992). It is clear that the testimony of Ms. Withers is unreliable, no doubt owing to her vested interest in the continued abuse of local wildlife. Ms. Withers also stated that a large rattlesnake was killed on a local grade school playground. Contact with that school revealed that a total of four rattlesnakes were found near the school, one of which was on the road, two were run

over with lawn mowers, and none of which were found on the playground. Apparently all four of these animals were found in September and October of 1992, shortly after a total of 75 (Edds 1992) Western Rattlesnakes were brought, in association with a rattlesnake roundup, from the surrounding ranches into the more populated areas of Wallace County. Other persons associated with the Wallace County roundup are equally misleading, deliberately exaggerating the threat posed by snakes. In September 1992, snakeskin dealer John Shaddix warned spectators that a Cottonmouth would crawl into a boat and attack the occupants (Reiserer and Reber 1992). At the same event, public address announcer Barry Walker proclaimed that the purpose of the rattlesnake roundup was the extermination of these vermin as he warned of the danger to humans and livestock in western Kansas (Edds 1992).

Roundup proponents often cite loss of livestock to snakebite as a rationale for large-scale extermination of rattlesnakes (Sweetwater Jaycees 1990; Grund 1992; Edds 1992; Reiserer and Reber 1992). Such claims are unsubstantiated by evidence. Rattlesnakes rarely bite livestock, and, when they occur, bites to livestock are seldom fatal. Klauber (1972) reported a study undertaken from 1936-1948 of *C. viridis* bites to livestock, when the snake populations were probably larger than they are now, at the San Joaquin Experimental Range in Madera County, California. The annual snakebite frequency in a herd of 190 cattle on 4600 acres was 1.4%, with a mortality rate of 0.22%. Recovery was rapid and complete in most cases, even those involving calves. Klauber also polled 134 Texas county agricultural agents and found that none of them considered damage to livestock from snakebites a serious problem. One Kansas livestock veterinarian stated that using livestock loss as justification for roundups was "pretty lame" (pers. comm. 1993).

It is important to consider that the purpose of rattlesnake venom is to kill prey, which consists mainly of small mammals, quickly. The usual prey of rattlesnakes, typically two pounds or less body weight, succumbs quickly to the amount and potency of venom injected in a single bite. Humans, generally weighing from 100-200 pounds, normally survive bites from rattlesnakes. It is questionable whether an average rattlesnake is even capable of killing a 2000-pound cow or horse.

As a conservation organization, the Kansas Herpetological Society takes great effort to shape a realistic and appropriate public perception of snakes. Generation of unnecessary hysteria on the part of roundup sponsors and showmen, whether incidental or deliberate, serves only to promote negative attitudes toward snakes.

Section 6.0 Commercialization

"At the bottom of the fetid, smoldering ashes of the 1993 legislative session is an odorous blob of ooze

called Senate Bill 137." — Steve Harper,
Wichita Eagle, June 13, 1993.

Laws such as the Endangered Species Act (1973) were established to protect dwindling wildlife from business ventures interested in as large a take as possible in as small an amount of time possible, in essence, industrialized hunting. The foresight of these legislators is commendable. Unfortunately, it was not before numerous animal species had been reduced to the verge of extinction that such laws were enacted. It is critical to acknowledge the keen difference between the weekend sportsman and the stockpiler of animals and their parts for the purpose of trade. A hunter takes an active interest in the functioning of the natural world, fascinated by its intricacies yet respectful of his place. A commercial "hunter" sees nothing but the money at the end of the process. He thinks of an endless stream of wants and desires that the current marketplace accommodates. The thrill of the hunt is merely the pleasure of making another quick buck; sport is eliminated. The term "harvest" is inapplicable here because one can only "harvest" with advanced planning based on a detailed understanding of the "crop." "Harvest" also implies a plan for sustained yield. Little to nothing is known about the population dynamics of *Crotalus viridis* in the face of intense commercial pressure. Thus, commercial "hunters" and stockpilers are merely taking blindly from the wild; they are not harvesting.

The commercialization of *Crotalus viridis* in Kansas is likely to lead to larger takes than previously occurred. The practice of killing rattlesnakes on sight which, some claim, the roundup has reduced, involved only local residents and chance encounters with snakes. It did not involve an influx of people and active searching for snakes. The financial incentive to overharvest is real, as a Western Rattlesnake can generate \$35-\$70 in income by the time the parts are all dispersed to dealers (Peterson 1993). This only adds to the difficulty of enforcing laws designed to promote sustainable take. Furthermore, as the market expands, pressure will be put on legislators to allow the industrialization of the taking of other species. As more big business-ventures step into the arena, laws which currently protect other native Kansas amphibians and reptiles will be legislated moot.

Kansas Senate Bill 137 is clearly in the tradition of commercializing any and all natural attributes that are deemed resources. The bill provided for the commercial take and trade of a species for which the effects of such a take are not currently known. The bill also set a terrible precedent for commercialization of other species in the future. Since the legislators who voted this law into effect were not foresighted enough to realize that they did not have any background which would warrant their making such decisions, we, the public, are left to deal with the

ensuing mishaps that are bound to follow. (It is unfortunate commentary to be compelled to write that lawmakers are often called upon by their constituents to make unfounded provisions without the advice of scholars specializing in the issue.) In the interest of preserving both the species and the integrity of "the hunt," those responsible for the logistical details of KSB 137 must carefully consider the fate of the Bald Eagle, the American Alligator, and the Gray Wolf (and many other species), and the tremendously costly efforts that have had to be expended by government agencies in order to remedy the detrimental effects of long-standing policies that promoted the overharvest of animals.

Section 7. Issues of enforcement

"Everybody uses gas, we make like we don't,
but we do."

J. P. Jones, founder, Opp Rattlesnake Rodeo

Regulations pertaining to take of snakes often are unenforced. Lack of enforcement may be due to lack of enough enforcement officers or officers with appropriate training, prejudice against snakes by enforcement officers, or blatant pandering to the whims of those wishing to take rattlesnakes.

Lack of sufficient manpower to enforce laws becomes a significant problem when hundreds or, in some cases, thousands of roundup participants are collecting snakes over an area which often encompasses several counties. Capt. Wayne Chappell of the Texas Parks and Wildlife Department stated, with regard to illegal take of reptiles, "We stop what we can, but with 444 game wardens for the entire state, we get spread a little thin." Ken McCloud of the U.S. Fish and Wildlife Service estimated that the best efforts of state and federal law enforcement stop only five percent of the illegal trade of reptiles (Frazer 1990). Brown (1993) indicated that poaching of Timber Rattlesnakes is rampant in Pennsylvania, and that licensing and reporting procedures are a failure due to lack of enforcement. Release of animals does not in practice occur as recommended.

Lack of officers with appropriate training is also a major problem. Most, if not all, officers lack appropriate training to measure venomous animals safely, and therefore are not expected to do so. Minimum size limits cannot be enforced. Many officers also lack sufficient knowledge to accurately identify non-rattlesnake species, and are largely ignorant of the laws pertaining to these species. At a Sharon Springs, Kansas, roundup, several participants collected Western Hognose Snakes (*Heterodon nasicus*), a species listed by the Kansas Department of Wildlife and Parks as in need of conservation and protected by state law (KAR 115-15-2). No citations were issued for these violations despite 20 conservation officers being on duty in the

area, in addition to several members of the Wallace County Sheriff's Department (D. Reber pers. obs.).

Prejudice against snakes in general and rattlesnakes in particular by law enforcement officers is also a problem. In 1992, a Timber Rattlesnake (*Crotalus horridus*) was killed by a state park visitor in northeast Kansas (D. Reber pers. obs.). Two Kansas Department of Wildlife and Parks Conservation Officers openly refused to pursue the matter, despite the fact that there was no question as to who had killed the animal. These officers acknowledged that the Timber Rattlesnake was listed as a species in need of conservation in Kansas and was therefore protected by state law (KAR 115-15-2), and that hunting was explicitly prohibited in the state park. Furthermore, these officers stated that they, too, killed any snake on sight in the park because "the people don't want them around, and we're gonna get them outta there." One officer even went so far as to brag about a shovel he carried in his truck specifically for that purpose. Ironically, this particular officer was assigned to monitor the roundup in Sharon Springs only two months later. Prejudice against snakes runs deep, even among those we would expect to be more enlightened. For this reason, we may rightly derive little comfort from local "monitoring" of roundup events.

Perhaps the worst aspect of the enforcement of laws pertaining to snakes is that some state wildlife agencies pander to the whims of roundup sponsors and participants. In Oklahoma, any person wishing to take snakes must have a valid Oklahoma hunting license, unless the take is being done in association with a roundup (Wille 1976). There is no logical reason, from the standpoint of wildlife management, for roundup participants to have an exemption from buying a hunting license. There is a law by the Texas Water Commission prohibiting the introduction of deleterious substances into the ground, yet the Sweetwater Jaycees include a "pressurized spray can (approximately three (3) gallon size with 10'x1/4" copper tubing extension on hose)," as recommended equipment for the "hunt" (Weir 1992). In Kansas, the organizers of the Sharon Springs rattlesnake roundup "misread" the laws pertaining to licensing, and assumed that a person with a license from any state would qualify for a lower-priced commercial harvest permit. They subsequently advertised their 1993 event under those terms. Surprisingly, the Kansas Department of Wildlife and Parks, by the order of KDWP Secretary Theodore Ensley, allowed the roundup to proceed as advertised rather than enforcing the licensing requirements. Such leniency was in direct violation of K.S.A. 1992 Supp. 32-319 and K.S.A. 1992 Supp. 32-988 which require hunters of Kansas' wildlife to have a valid Kansas hunting license. The roundup sponsors claimed that the wording of the law was unclear, in spite of the fact that it was written, by their local senator and Senate Majority Leader Sheila Frahm, specifically to accommodate their event. It is intoler-

erable that a wildlife agency would cater to those unable to comprehend written laws.

Section 8.0 Recommendations

The Kansas Herpetological Society has repeatedly sent representatives to speak at Kansas Wildlife and Parks Commission meetings, sent letters of concern to KWP Commissioners, and have made attempts to work independently with those involved with the planning of the Sharon Springs (Kansas) Rattlesnake Roundup. We have advocated moderation at every step in the process, by opposing Kansas Senate Bill 137 due to its obvious aim at denying the inherent biology of the species for the sake of a few quick bucks, and by encouraging lawmakers to pursue research into the population biology of *Crotalus viridis*. (This is very different from the information obtained by Dr. Henry Fitch at the roundup. Furthermore, the overall findings of Dr. Fitch at the Sharon Springs Rattlesnake Roundup are useful only if they are interpreted and considered by lawmakers.) As concerned citizens, we have merely asked that lawmakers consult with specialists in herpetology (the study of amphibian and reptiles) and population biology. For these reasons and for the sake of completion, KHS has conducted the only scientific research possible in a brief period of time (a year and a half) — a review of all available scientific literature pertaining to the issue. We emphatically challenge KDWP to conduct its own field research in an effort to make responsible decisions regarding the harvest, not just the taking, of this species. As a conservation organization, we find the mass slaughter of any animal for amusement and financial purposes to be unproductive and counter to all environmental legislation in the past 20 years. (It is apparently impossible for humans to collectively learn from past incidents, such as the slaughter of millions of bison and passenger pigeons.) However, in support of true sport hunting, we offer the following guidelines, based on available information as discussed previously, that are aimed at promoting sportsmanship and sustainable yield of *Crotalus viridis*.

With regard to commercialization:

We ask that Kansas all amphibians and reptiles be protected from commercialization. Thus, the snakes are hunted for the sake of "the hunt" as opposed to hunting for commercial profit. (See Section 6.0)

With regard to possession limits and the area and duration of the hunt:

We ask that the bag limit be reset at five snakes per day. There is no evidence that more animals could be found in one day. In fact, at the last two roundups, the average take per hunter was fewer than two snakes per day (Fitch 1993). Thus, the only motive for seeking a higher number is to allow for lawful stockpiling.

We ask that KDWP establish and strictly enforce laws that are aimed at the prevention of snake "stockpiling."

Senate Bill 137 established a possession limit of 30 animals. Allowing a possession limit that is fifteen times higher than the average daily take per hunter is unacceptable. Doing so serves only to promote stockpiling.

We ask that the area of the hunt be restricted to Wallace County and those counties which are immediately adjacent. This makes law enforcement more feasible and also safeguards against stockpiling. Fitch (1993) indicated that nearly 40% of the animals stockpiled prior to the 1993 roundup were from distances of 90-225 miles from Sharon Springs.

We ask that the duration of the "special event" be defined as only those days that the roundup is officially taking place. There is no logical reason to extend the taking period, and doing so will only promote stockpiling.

With regard to size limits:

We ask that size limits be more in line with age (and, correlatively, size) of reproduction. More than 50% of the snakes taken at the 1993 Sharon Springs roundup were three years of age or younger (Fitch, 1993), and were thus likely below reproductive age. The largest of the three-year age class were approximately 30 inches long. We feel that 24 inches is a reasonable minimum size limit. We also suggest a maximum size limit of 40 inches to protect large females that contribute most substantially to the population.

We ask that size limits be made meaningful by prohibiting the possession of animals outside the legal limit, and specifying snout-to-vent (excluding tail and rattle) as the length measured. Current regulations allow the possession of animals below the minimum size, provided that the animals are released later. This system has proven to be a complete failure in other states (Section 6.3). The standard scientific procedure for measuring snakes is to measure the snout-to-vent length. This method eliminates bias resulting from sex-related differences in relative tail length and tail loss due to injury. All available life history information is based on snout-to-vent measurements, thus it is important that the laws recognize this as the accepted measure of size.

With regard to public safety:

We ask that "hand taking" not be a legal method of take. Rattlesnake bite is a serious risk associated with rattlesnake roundups (section 3.1). Kansas has a superior record of promoting safe hunting through hunter education programs, and it would be unfortunate to backslide by allowing unnecessary risk-taking while hunting rattlesnakes. We ask that taking by hand and all other manual handling of rattlesnakes (other than that associated with enforcement and research efforts) be prohibited.

We ask that daredevil antics be prohibited. Carnival-like daredevil shows serve only to promote reckless behavior, cause snakebite injuries, and generate unnecessary hysteria about rattlesnakes. Such antics have no place in true sport hunting.

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SYNOPSIS

The following information is a brief synopsis of the Kansas rattlesnake roundup activity to date:

The first rattlesnake roundup held in Kansas was sponsored by the Wallace County Jaycees in September 1992. The event was operated as follows: "hunters" collected Prairie Rattlesnakes on volunteered property in Wallace County, brought the animals to the Wallace County Fairgrounds, and handed the animals over to event sponsors. The animals were then placed in a large "pit" for the purposes of entertainment by a group known as "Fangs and Rattlers". This group was advertised as an educational troupe of professionals. However, they engaged in a variety of dangerous antics that included climbing into a sleeping bag filled with the snakes, throwing and kicking the snakes, and holding the animals for the crowd to touch. The only result of this circus-like show was to generate unnecessary hysteria about rattlesnakes. Vendors sold "completely accurate" resin-bound snakes assuming impossible S-curves, rattlesnake "milk", and other novelty items that preyed on the ignorance and unjustified (albeit encouraged) hysteria of the audience. Sponsors also butchered, fried, and sold rattlesnake meat. At the time it was illegal for the body parts of Kansas prairie rattlesnakes (*Crotalus viridis*) to be sold, as KDWP regulations did not allow for the commercialization (i.e. sale) of any reptile species. Therefore, sponsors were giving away the meat, provided the recipient purchased a bun on which to eat it. The first event was financially successful because the sponsors sold a variety of novelty and food items, charged admission, and held a dance. However, they believed that they could raise even more money if they could sell the snakes. Sponsors worked closely with their state senator, Sheila Frahm, and were able to get her to propose what became Senate Bill 137. The bill was aimed at commercializing Prairie Rattlesnakes so that their skin could be sold to be converted to belts and hat bands, their heads and

rattles sold as show trinkets, and their meat fried for an additional tidy income. Unfortunately the majority of state legislators did not understand the importance of the issue and passed the bill, despite the arguments of professional biologists and KDWP. The passage of SB 137 set a terrible precedent for commercialization of other species. (Recall the effects of commercialization on alligators and whales). Even though rattlesnakes could now be sold, KDWP still had the power to protect the animals by severely restricting the event.

The second event was held in May 1993. Many more snakes were captured because of the season; "hunters" raided den sites where the animals had been grouped for overwintering, and "hunters" stockpiled the animals. Usually when animals have been stockpiled, they have been captured over an extended period of time and packed in a garbage can (or similar containers) without being offered food or water. The conditions to which the animals are subjected to range quite a bit, but the bottom line is that the "hunters" do not know how to care for their prey, or simply have no desire to do so. Many animals die and are thrown away. Even though participants in the first roundup averaged fewer than two snakes captured, SB 137 established (for the second roundup) a bag limit of 30 animals. The only possible purpose of such a generous bag limit was to allow stockpiling prior to the roundup. The bill also opened the entire state of Kansas to "hunters", despite Prairie Rattlesnakes only occurring in the western half of the state.

There is some concern that "hunters" have begun to use the trademark capturing technique of roundups — random spraying of gasoline into prairie dog holes and other suitable snake shelters. This technique is widespread in other states, regardless of laws prohibiting the practice. We should expect an increase in gasoline usage to accompany any increased demand for snakes. Consider the ramifications of eating meat that was hours before doused with gasoline, or of gasoline leaching into groundwater. Threatened and endangered species also fall victims to this gassing.

Following the passage of SB 137, many professional biologists, herpetologists, and concerned citizens provided the Kansas Wildlife and Parks Commission with available scientific information and urged them to pass regulations based on the biology of the species. At times it appeared that the Commission was leaning towards conservative regulations. However, at the final rulemaking in January 1994, conservationists' expectations were disappointed. The Commission passed regulations on a number of issues, but those that were of particular concern to conservationists were largely lost. The Commission approved a lengthy spring season, which was opposed by biologists due to vulnerability of rattlesnakes when they are concentrated at den sites. The bag and possession limits were set at ten and twenty, respectively. Preliminary data on population densities at dens indicates that most dens have approximately 20 rattlesnakes total. Thus, one person could legally, in one day, eradicate an entire den. Furthermore, by setting high bag and possession limits, KDWP essentially encourages stockpiling. Stockpiling is also encouraged because, while KDWP regulated that "hunters" must be registered with a special event, the special events (roundups) are permitted to last for 30 days. Every organized roundup in the country is scheduled for two days. Essentially, KDWP allows 30 days of stockpiling prior to the actual roundup event.