KANSAS WILDLIFE

JANUARY/FEBRUARY 1988

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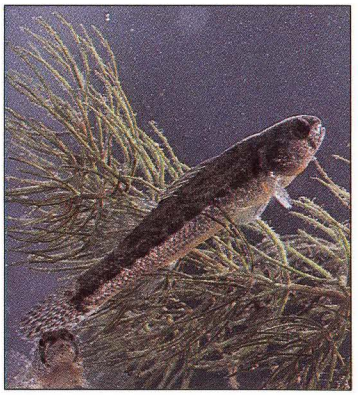

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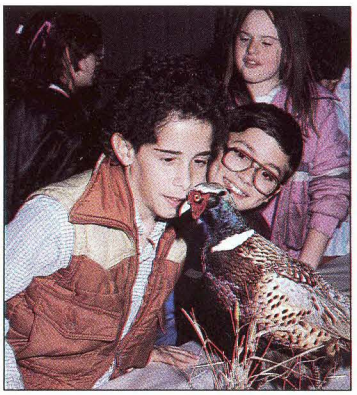

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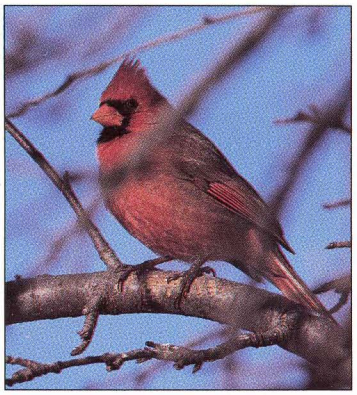

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About The Covers

Front: Golden eagles, once native to Kansas, are being reintroduced to the state. Mike Blair composed this golden eagle portrait using a 105mm lens. He set his aperture at f/6.7 and his shutter speed at 1/125 of a second. See related stories on Pages 2 and 7.

Back: Mike Blair photographed this cave salamander in Schermerhorn Cave in Cherokee County. Shot with 105mm lens. Aperture was f/22 and shutter speed 1/60th of a second. See related story on Page 7.

Editorial Creed: To promote the conservation and wise use of our natural resources, to instill an understanding of our responsibilities to the land.

THE BUCK STOPS HERE

Odds & Ends

Hey there. Back at you with a few notes concerning the previous issue of KANSAS WILDLIFE and the current one, which is also the last issue of KANSAS WILDLIFE you'll ever receive. That's a fact. Beginning with the next issue (March/April), the magazine name changes to KANSAS WILDLIFE & PARKS. This new title, as I mentioned here last time, will better reflect our agency's new charge.

Anyway, I just wanted to remind you that when you receive the March/April issue that it's still us — the Kansas Department of Wildlife and Parks — merely with an additional area of responsibility. Don't forget to look for the special 16-page color section on Kansas parks inside that issue. And what about our new magazine logo? We're still mulling it over, but special thanks to those of you who gave us your opinion. We appreciate your input. Your suggestions are being considered.

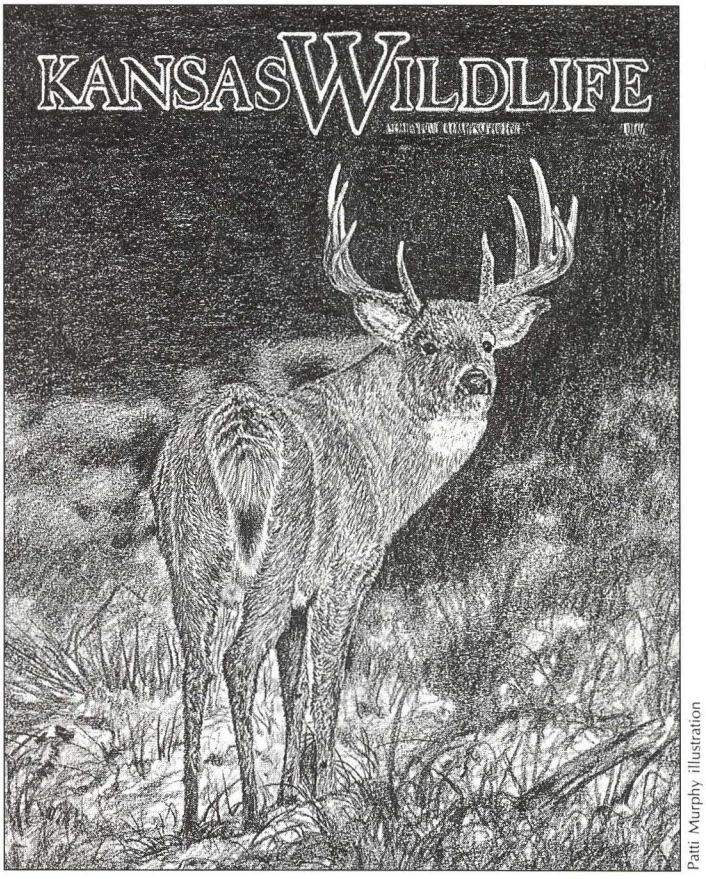
Back to the November/December 1987 issue for a bit. Some of you have said you'd like to buy a color photograph of Mike Blair's cover shot (shown at right). That color photo (an 8x10) is yours by sending a check or money order for $25 to our Pratt office. Make your draft payable to Wildtrust Photographs.

As of late November, we've received more than 700 requests for the free publication *Kansas Prairie Chickens*, as mentioned on Page 11 of the November/December issue. Your requests have been coming in fairly steadily. If you haven't received your copy yet, please be patient. Robyn Tritt and Kathy Pritchett are rapidly filling your requests.

You also responded favorably to the "It's Wild In Kansas" T-shirt we advertised on Page 26 of the last issue. Those light-blue shirts sold well at the 1987 State Fair in Hutch, and your recent response all but wiped out our supply. Joyce Harmon Depenbusch, who's coordinating the sale, informs me she has reordered and will be filling your requests as soon as she receives the shipment. Joyce also says she is able to take additional orders. So if you're in the market for a sharp-looking shirt (the proceeds go to the Milford Conservation Education Center), please refer back to the previous issue or call Joyce at our Pratt office. Both youth and adult sizes are available.

We also received some lively responses to the trapping story entitled "Why I Trap." Please see the Letters pages of this issue for a sampling of the comments. Included in those letters was a vote of confidence from a man who was preparing for his 60th season trapping. Thanks for the kind words, Mr. Brecheisen.

In closing, I invite you to enjoy the featured stories within. Charlie Nilon's cover story tells us how your Chickadee Checkoff money is being spent. Bill Layher follows with an eight-page piece on the state's threatened and endangered species as well as the species in need of conservation (SINC). Photographer Mike Blair once again pulls double duty with his photo story "School Days, Field Days," which should serve as an inspiration to all youth educators.



Patti Murphy illustration

Pages 17-28 are home to Mike Miller's Center Section. On Page 29 you'll find the three winning photographs in the 1987 Chickadee Checkoff Photo Contest. The next four pages are devoted to Steve Sorensen's piece on the state's golden eagle restoration project. Lloyd Fox follows with a profile of North America's largest rodent, the beaver. Our Gallery feature on backyard birds is in step with this issue's nongame focus. Education coordinator/pheasant hunter Rob Manes anchors the feature well with a piece on late-season ringneck hunting and Lawrence's David Seibel, who wrote our High Ground piece, tells us of the delights of birding.

I'm out of room. From all of us to all of you, happy holidays and best wishes for a prosperous New Year.

Paul

Paul G. Koenig
Editor

Chickadee Checkoff:

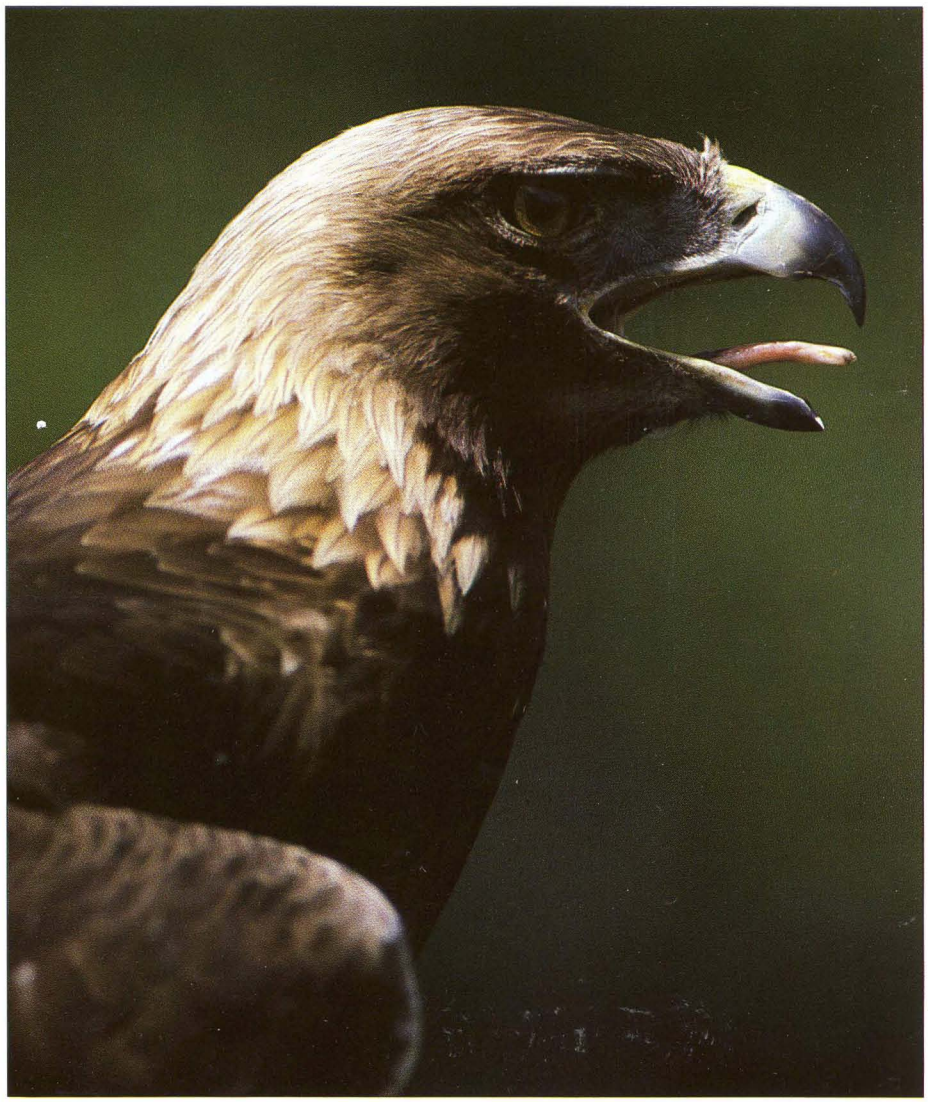
Where The Money Goes

The process begins when you check Line 26 on your state income tax form. From there your gift funds nongame wildlife programs.

by Charles Nilon
Urban Nongame Biologist
Pratt

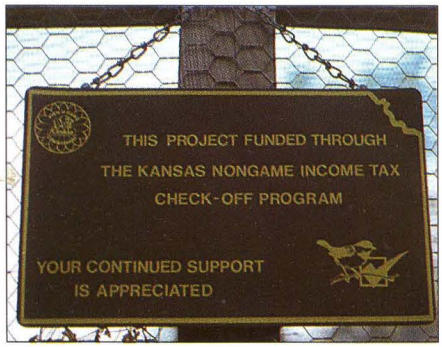
Last year the number of Kansans contributing to the nongame wildlife improvement program through the Chickadee Checkoff set a record of more than $211,000 plus more than $5,000 in cash. Yet letters to the Kansas Department of Wildlife and Parks and comments received by many staffers indicate that many state taxpayers don't know where their donation goes.

If you're like most contributors to the Nongame Program, your contribution is made by donating a portion of your income tax refund, or by adding your gift onto your income tax payments. In either case, merely fill out Line 26 on your Kansas individual income tax form. After reviewing your return, the Department of Revenue



Mike Blair photo

Signs with the Chickadee Checkoff logo (below) indicate projects funded through the Kansas Nongame Wildlife Improvement Program. Donations have funded the state's golden eagle (right) restoration project at Wilson Reservoir in Russell County.



Mike Blair photo

turns over your Chickadee Checkoff contribution to the Department. By law, Wildlife and Parks can spend these donations only on programs that benefit nongame wildlife species — the more than 4,600 species (plus some 20,000 insect species) in Kansas that are not hunted, fished or trapped.

Since the Checkoff was initiated in 1981 as a method for funding the nongame program, funds have been spent in five areas: Reintroduction, Habitat Improvement, Information-Education, Research and Administration. The amount spent in these areas is determined by the Department with the advice of the Kansas Nongame Advisory Council, an advisory group made up of representatives from nine conservation groups. Each year the two nongame biologists prepare a budget based on our projections of Checkoff revenues. This pie chart shows how the money is allocated:

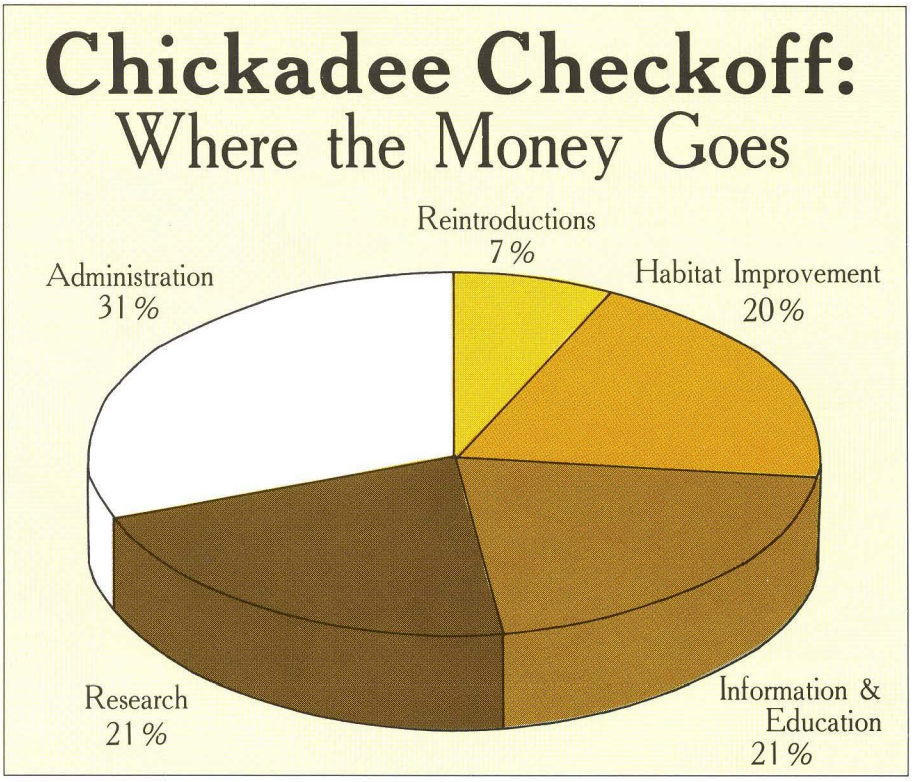
Reintroduction	7%
Habitat Improvement	20%
Information-Education	21%
Research	21%
Administration	31%

Reintroduction projects are designed to re-establish populations of nongame wildlife species no longer found in Kansas. Examples include the release of Eastern chipmunks in Wichita, Emporia and Lawrence; and the establishment of a breeding population of golden eagles at Wilson Reservoir.

Habitat improvement projects maintain or enhance habitat for nongame species. These projects include providing nesting habitat for the least tern, developing nature trails and restoring prairie in several urban parks, providing bird feeders at nursing homes and maintaining the backyard habitat improvement program.

Information-Education projects provide the public with information on nongame species. Projects include a bird checklist for Marais des Cygnes Wildlife Area, Eagle Day programs in the Kansas City area, publication of *Nongame Notes* and *Nongame Abstracts*, production and distribution of Kansas Birds and Kansas Amphibians posters and the distribution of educational materials to Kansas elementary schools.

Research projects provide information on the status and distribution of nongame species as well as information on how to better manage for nongame species. Recent research projects include a survey of amphibians in



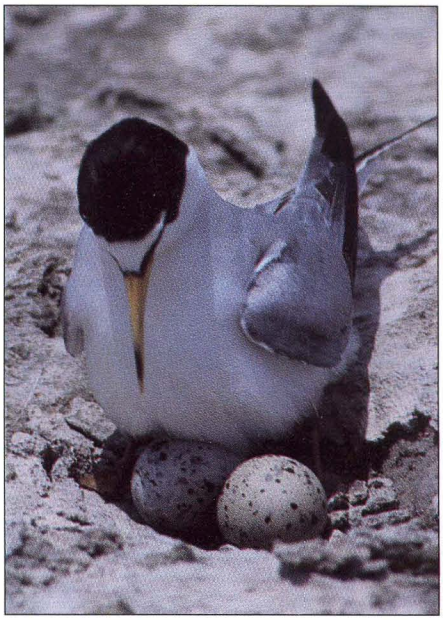
Patti Murphy graphic

This pie chart shows the general areas that receive Chickadee Checkoff funding. These funds may be spent on any of the more than 24,600 nongame wildlife species (including 20,000 insect species) in Kansas. Recent projects include a survey of amphibians, a study of windbreaks as breeding habitat for nongame birds and a study on the Northern crawfish frog (below).

Patti Murphy graphic

The Northern crawfish frog, a threatened species, requires lowland meadows with water tables near the surface. These frogs are extremely secretive, living underground except during the spring breeding period. They prefer crawfish burrows but also use small mammal burrows.

Mike Blair photo



Mike Blair photo

Above: This smallest of the North American terns, the least tern has a wingspan of about 20 inches and is 8-10 inches long. Least terns, endangered nationally, are summer residents in Kansas. Nesting birds have been recorded in six central and western counties but regular nesting is currently limited to Clark, Comanche, Meade and Stafford counties.

Left: The Nongame Wildlife Improvement Program supported a study to determine the status and distribution of the barn owl and other raptors in northwest Kansas.

Below: White pelicans and other nongame species found at Cheyenne Bottoms Wildlife Area will benefit from the recently completed Cheyenne Bottoms Study, a project partially funded through Chickadee Checkoff donations.

Mike Blair photo

northeastern Kansas, a study of windbreaks as breeding habitat for nongame birds and a study on the Northern crawfish frog.

Administrative costs are divided into two general areas — overhead costs for the nongame program (including salaries, vehicles and equipment) and Chickadee Checkoff promotion costs. Close to $11,000 is spent each year to promote the checkoff as well as pay for advertising and publishing costs.

The best way to understand how the money from your contribution to the nongame wildlife program is spent is to look at a few of the projects the program supports.

Spring River Study

Fifty square miles of the Ozark Plateau extend into the extreme southeast corner of Cherokee County. This small corner of Kansas is home to several species of fish, reptiles and amphibians not found in other parts of the state. Shoal Creek, a small stream flowing into the Spring River, contains more than 80 species of fish, making it Kansas' most diverse stream. Schermerhorn Park, a city park just south of Galena in southeastern Cherokee County, supports three species of amphibians that are endangered in Kansas.

With this as background, the Department of Wildlife and Parks funded a study by Pittsburg State University to 1) determine the abundance and distribution of species found in the Spring River drainage, 2) evaluate the impact of land-use practices on the fauna of the area and 3) develop a nongame management program that's acceptable to landowners and local authorities in the watershed. The in-

How To Contribute To Chickadee Checkoff

Mike Blair photo

Contribute $20 to Chickadee Checkoff during 1988 and receive a one-year subscription (or extension) to *Kansas Wildlife* magazine. Contribute $50 or more and receive *Natural Kansas* as well.

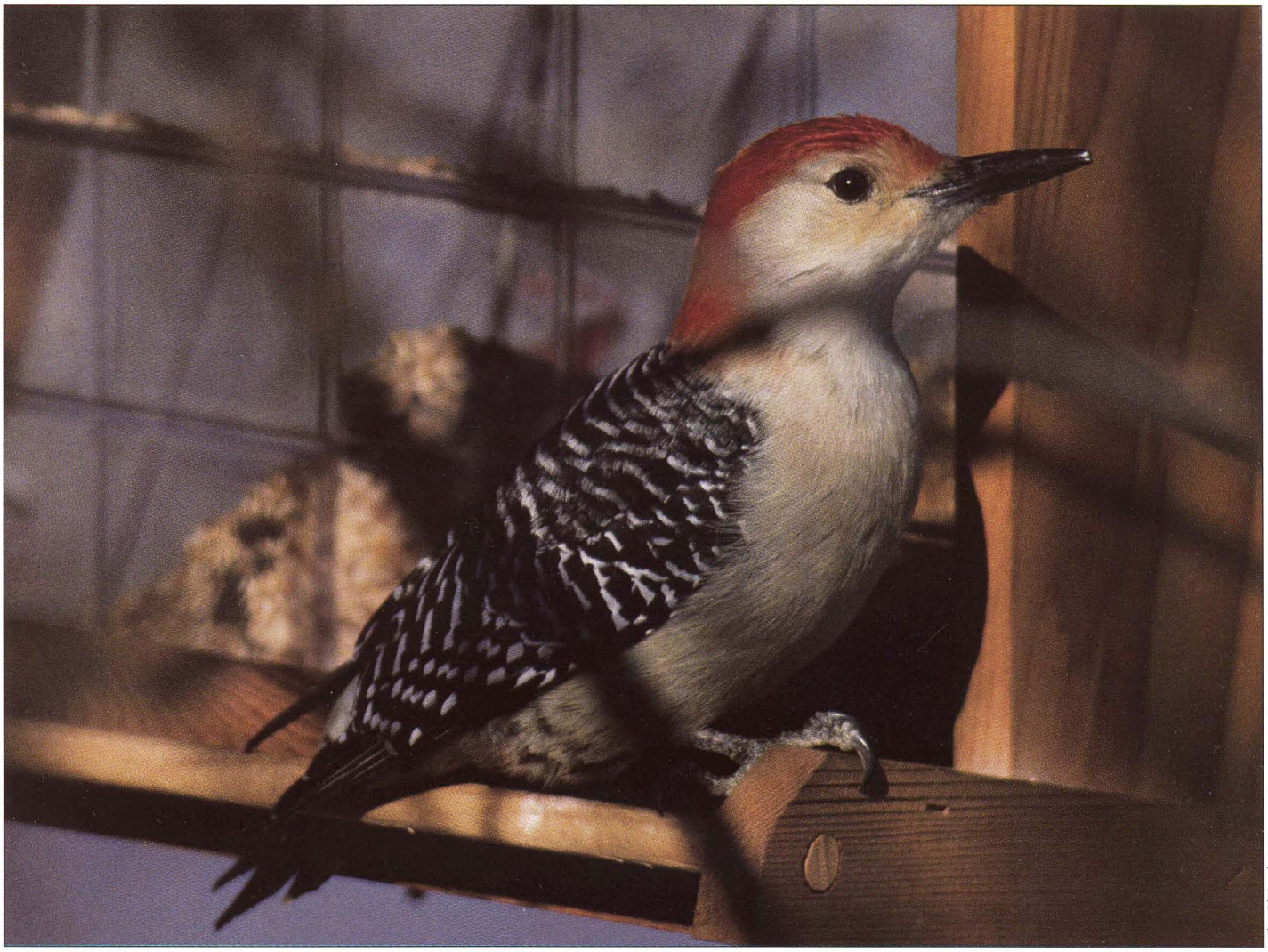
It's easy to contribute to the nongame wildlife improvement program or Chickadee Checkoff, as it's more popularly known. Simply enter the amount you wish to donate on Line 26 of your Kansas state income tax form. The box is marked "Wildlife Contribution." Your donation will either reduce your refund or increase the amount you owe.

All contributors will receive a copy of the tiger swallowtail photo that won the 1987 Chickadee Checkoff Photo Contest. Gerald Wiens of Arkansas City was the winning photographer. Anyone who donates $20 or more will receive the photo and a one-year subscription (or renewal of your current subscription) to KANSAS WILDLIFE magazine. Donate $50 or more and receive a free copy of *Natural Kansas* (a 226-page book edited by Joseph T. Collins), a one-year subscription to KANSAS WILDLIFE and the swallowtail photo. To receive your photo, magazine subscription or book, send a copy of your signed tax form, showing the amount of your donation to: Kansas Department of Wildlife & Parks, Wildlife Division, Rt. 2, Box 54A, Pratt, KS 67124-9599.

In the future, the Nongame Program will continue to finance projects that will conserve and enhance nongame species populations. We want to expand our urban wildlife program and learn more about species in need of conservation, a group of 58 species that may qualify for threatened or endangered status once we learn more about their distribution.

To do this, we'll need your continued support. The Nongame Program is the only Department of Wildlife and Parks program supported solely by taxpayer donations. The success of the program depends on the importance you place on nongame wildlife.

Your support — your donation — is everything. — *Charles Nilon*



Mike Blair photo

Information on how to attract the red-bellied woodpecker (above) and other common birds is included in the Backyard Wildlife Program, supported by Chickadee Checkoff donations. More than 50 Kansas residents have certified backyard wildlife habitats.

formation from this study will help the Department protect and manage habitats for the region's unique species.

Urban Programs

The Merritt Horticultural Center is a group home on a 36-acre site in Kansas City, Kan. The Wyandotte County Division of Mental Retardation operates the center to provide nature-related activities for residents and clients. Activities at the center include planting Christmas trees, fruit trees and windbreaks in addition to several efforts to improve the site's wildlife habitat. Nongame funds were used to build a small pond, restore a native grassland and purchase wildlife plantings from the state nursery. The center also serves as a wildlife habitat demonstration area. Visitors include local Audubon chapters, scouting groups and 4H'ers.

The Salina Recreation Commission has used nongame funds to manage natural areas in Lakewood Park. These funds allowed the city to complete a long-awaited natural area project, which is improving habitat for nongame wildlife and also providing a unique recreation experience for urban residents. Checkoff funds have been used to establish and manage a native prairie, plant shrubs beneficial to birds and other nongame species. Money has also been used to establish bluebird nest boxes in suitable areas. Scout groups helped build a nature trail through the park, and the local Audubon chapter is conducting weekly bird counts to document wildlife response to the habitat improvements.

Cheyenne Bottoms Study and Kansas Natural Heritage Inventory

At the request of the Kansas Legislature, $30,000 was taken from the Nongame Program to support the Cheyenne Bottoms study and the work of the Kansas Natural Heritage Inventory.

The Cheyenne Bottoms study is an interdisciplinary effort aimed at providing information upon which wise management decisions may be based. To date, information has been collected on the hydrology of the Cheyenne Bottoms watershed, plants and animals that live in the Bottoms and on the economic impact of Cheyenne Bottoms on Barton County and the state of Kansas.

The Kansas Natural Heritage Inventory includes a statewide inventory of all endangered and threatened species as well as those species in need of conservation, plus an inventory of significant habitats. The results of this inventory are fed into a computer, thereby allowing state agencies and local governments to know the location of the state's unique natural resources and better plan for their protection. KW

Taking Care Of Our Own

A five-man committee has named more than 100 wildlife species to state endangered, threatened and watch lists. Here's how they did it.

The passage of a federal Threatened and Endangered Species Act in 1973 brought on a new era in wildlife management and a way of thinking that's had a big impact on both regulatory agencies and developers and touched the lives of nearly every citizen. In general, the public has supported and even demanded special recognition for species that are called threatened or endangered.

A common question is: "What makes one critter threatened or endangered and another not?" That question is difficult to answer, but certainly deserves one. Perhaps I should back up a few years before I try to explain.

Many states have developed a list of species classified as threatened or endangered (T/E) and even developed lists of species in jeopardy of becoming T/E species. These "watch

A threatened species in Kansas, the Arkansas darter (below) prefers shallow, clear, spring-fed tributary and headwater streams with sandy bottoms. The fish's primary range is south of the Arkansas River.

Mike Blair photo

by Bill Layher
Environmental Services Supervisor
Pratt

lists" are commonly used to guide development projects so construction doesn't further degrade the habitat of sensitive species.

Kansas was one of the first states to develop a T/E list of its own. On July 1, 1975, the Nongame and Endangered Species Conservation Act (K.S.A. 32-501 through 510) became state law. The comprehensive act mandated the Kansas Department of Wildlife and Parks to develop lists of certain categories of animal life in the state: threatened species, endangered species and species in need of conservation, or SINC.

By May 1, 1978, the Department had developed two of the three required lists. Candidate species for the threatened and endangered lists were compiled using information from Kansans, academians, scientists, wildlife managers, naturalists and concerned citizens. Unfortunately, the process used for evaluation and selection of the final lists was not documented. So no information was available to clearly indicate why one species made the list and another did not.

The Species in Need of Conservation list was not prepared until January 1979. This list was reviewed and revised three times, but the Department took no action. The list was included as part of the 1979 annual nongame report. The Nongame Section of the Wildlife Division also proposed some revisions to the initial threatened and endangered species lists. But it wasn't until May 1985 when the Nongame Section proposed a regulation containing the SINC list. The proposed regulations were circulated within the agency and to the Nongame Wildlife Advisory Council. Both groups and individuals proposed many changes, and it soon became apparent there were a number of potential problems with certain listings.

Early in the review period, Bob Wood, a terrestrial ecologist with the Environmental Services Section, drafted a memo to the head of the Nongame Section. Wood emphasized that before species were added to or deleted from existing T/E lists, those actions should be supported by sound biological data. Similar problems would arise when forming a list of species in need of conservation.

To bring a solution to the problem, Wood stated, "In this regard, I *strongly* recommend a task force of agency personnel be immediately assigned to the responsibility to evaluate our threatened, endangered and species in need of conservation programs and develop clear standard procedures for petitioning, evaluating, listing and guidelines for developing conservation efforts. The task force should use existing expertise outside the agency as well as their own to aid in developing its recommendations. The task force should be given one year to develop its recommendations for submission to staff and commission. Once a standard procedure is adopted, species evaluations can begin."

A committee of Fisheries Division personnel was also assigned to review the draft regulations. The Fisheries Committee made 10 recommendations on the process of reviewing and listing species. This committee reinforced Wood's previous recommendations and expanded upon them. Most importantly, the Committee pointed out that part of the statutes authorizing the lists said that the Department shall develop scientific data supporting a decision to list a species in need of conservation. No information supporting the proposed fish species listing had been developed.

Finally, on September 30, 1985, a Nongame Task Force was appointed by the agency's then-assistant director, Kent Jackson. The task force was charged with preparing data-supported listings of species in each of three categories. In addition, the committee was to develop methods to defend their findings, address recommendations related to the listed species and develop a timetable to achieve its goals.

The task force was composed of five Department aquatic

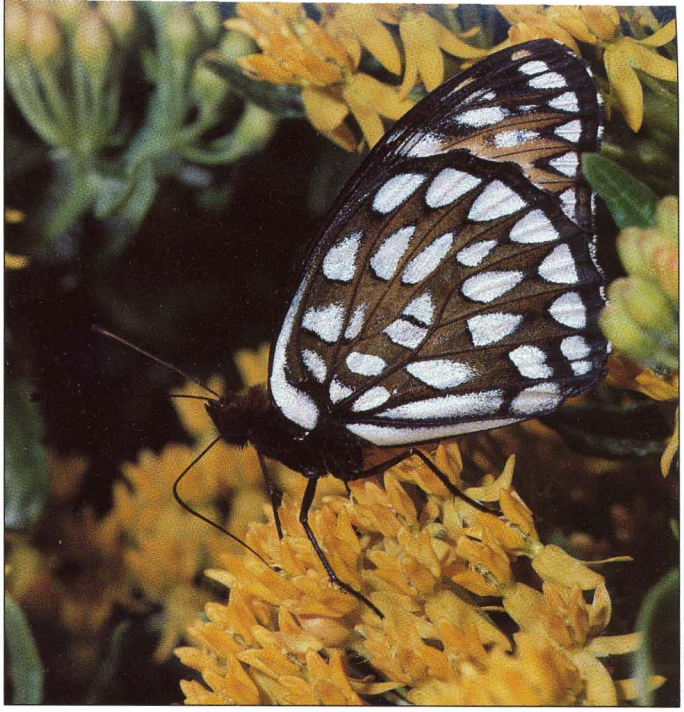
Mike Blair photos

The least tern (shown nesting above) is endangered nationally. This species requires barren areas near water. Habitat includes saline flats in salt marshes, sand bars on riverbeds and shores of large reservoirs. The Forster's tern (shown above in flight) looks similar to the least tern, is more commonly observed in Kansas and is not on any protected lists here.

Mike Blair photo

Snowy plovers, threatened in Kansas, prefer open salt flats, river bars and beaches, and wetlands. Nesting occurs in central and southwestern Kansas counties. This rare migrant is a summer resident here.

Gene Brehm photo; Mike Blair inset photo



Mike Blair photo

Top: A butterfly of the tallgrass prairie, the regal fritillary may be disappearing with the habitat. The striking silver spots of the underwings identify this handsome rust and black butterfly when at rest.

Left: The bald eagle, our nation's symbol, has a wingspan of 6-8 feet and is a regular winter resident in Kansas. Although bald eagles, endangered nationally, may occur in any Kansas county, they usually concentrate around large impoundments, marshes and rivers where fish, waterfowl or other food supplies are abundant. Nearby stands of trees containing tall, mature trees with stout horizontal limbs and open branching patterns are important as roosts and resting perches.

Broadhead skinks, a threatened lizard in Kansas, require mature woodlands having dead and decaying timber. This species spends much of its time in tree cavities, especially in dead standing timber. The broadhead skink is intolerant of intensive lumbering and woodland grazing.

J. T. Collins photo

Mike Blair photo

In Kansas the dark-sided salamander has been found only in the Ozark region of southeast Cherokee County. There this threatened species is restricted to moist areas near streams, in or near caves and under rocks.

and terrestrial biologists who could address game and nongame considerations. The members were: Bob Wood, a terrestrial ecologist; Ken Brunson, a stream investigator; Joe Schaefer, the urban wildlife project leader; Marvin Schwilling, project leader for nongame and endangered wildlife; and myself, an aquatic ecologist and task force chairman. The task before the group was indeed awesome. Since passage of the Nongame and Endangered Species Act, 183 species of animals had been proposed for listing by various committees, government organizations or individuals. Twenty-four of the 183 species were listed on the previously established T/E lists.

Before proceeding with the evaluation, however, the task force discussed several general scenarios that could possibly arise. It was decided that while ground rules may be

All species listed on the federal threatened or endangered species lists must be listed on the Kansas list regardless of the organism's status with the state.

needed, there was also a need to be flexible due to unique circumstances. From these discussions, several ground rules were established.

The task force decided that any organisms for which no survey information was available would be deleted from consideration. The reason: any listing of such an organism would not be defendable.

The task force agreed that those species that sometimes expand their range into Kansas after several years of favorable climatic conditions shouldn't be considered if climatic

Making The List: What It Means

Several actions result from a species being listed. If a species is listed as threatened or endangered by state law, a project sponsor must apply for a permit from the Kansas Department of Wildlife and Parks before beginning work that may directly impact the species or its habitat. The Environmental Services Section within the Kansas Department of Wildlife and Parks reviews these, and may approve, modify or halt the project. Additionally, this section maintains records of occurrence of all threatened and endangered species.

Species listed as "in need of conservation" also receive some recognition, but there is no legal protection from habitat impacts. Developers are made aware of these species, and development plans are reviewed to offer suggestions on how projects can proceed in the least harmful manner.

The Nongame Section of the Department's Wildlife Division is in the process of writing recovery plans for some of the state's threatened and endangered species. Nongame project proposals are vigorously recruited to gather information on species listed as in need of conservation. The more we learn about these species, the better we can prevent them from making the threatened list or, worse, the endangered list.

In addition, the state recently established a heritage program. Information from the Department's species review effort was made available to the heritage planning group, which is identifying areas in Kansas where rare animals and plants exist. It is the Department's wish that some of these areas will eventually receive protection through the state's Natural and Scientific Areas Program.

The future of wildlife is in all of our hands. Let's hope these hands are gentle. — *Layher*

ENDANGERED SPECIES

Invertebrates
Amphibious snail, *Pomatiopsis lapidaria*
Heel-splitter mussel, *Anodonta suborbiculata*

Fish
Speckled chub, *Hybopsis aestivalis tetranemus*
Sicklefin chub, *Hybopsis meekii*
Pallid sturgeon, *Scaphirhynchus albus*
Arkansas river shiner, *Notropis girardi*

Amphibians
Cave salamander, *Eurycea lucifuga*
Graybelly salamander, *Eurycea multiplicata griseogaster*
Grotto salamander, *Typhlotriton spelaeus*

Birds
Bald eagle, *Haliaeetus leucocephalus*
Peregrine falcon, *Falco peregrinus*
Eskimo curlew, *Numenius borealis*
Whooping crane, *Grus americana*
Least tern, *Sterna antillarum*

Mammals
Black-footed ferret, *Mustela nigripes*
Gray myotis, *Myotis grisescens*

THREATENED SPECIES

Invertebrates
Scott riffle beetle, *Optioservus phaeus*

Fish
Chestnut lamprey, *Ichthyomyzon castaneus*
Redspot chub, *Nocomis asper*
Hornyhead chub, *Nocomis biguttatus*
Arkansas darter, *Etheostoma cragini*
Neosho madtom, *Noturus placidus*
Silverband shiner, *Notropis shumardi*
Flathead chub, *Hybopsis gracilis*

Amphibians
Northern crawfish frog, *Rana areolata circulosa*
Green frog, *Rana clamitans melanota*
Strecker's chorus frog, *Pseudacris streckeri streckeri*
Western green toad, *Bufo debilis insidior*
Eastern narrowmouth toad, *Gastrophryne carolinensis*
Northern spring peeper, *Hyla crucifer crucifer*
Dark-sided salamander, *Eurycea longicauda melanopleura*
Central newt, *Notophthalmus viridescens louisianensis*

Reptiles
Western earth snake, *Virginia valeriae elegans*
Eastern hognose snake, *Heterodon platyrhinos*
Checkered garter snake, *Thamophis marcianus marcianus*
Northern redbelly snake, *Storeria occipitomaculata occipitomaculata*
New Mexico blind snake, *Leptotyphlops dulcis dissectus*
Kansas glossy snake, *Arizona elegans elegans*
Texas longnose snake, *Rhinocheilus lecontei tessellatus*
Texas night snake, *Hypsiglena torquata jani*
Broadhead skink, *Eumeces laticeps*

Birds
Snowy plover, *Charadrius alexandrinus*
White-faced ibis, *Plegadis chihi*
Piping plover, *Charadrius melodus*

Mammals
Eastern spotted skunk, *Spilogale putoris interrupta*

SPECIES IN NEED OF CONSERVATION

Invertebrates
Butterfly mussel, *Ellipsaria lineolata*
Cylindrical paper-shell mussel, *Anodontoides ferussacianus*
Elk-toe mussel, *Alasmidonta marginata*
Fluted shell mussel, *Lasmigona costata*
Kidney-shell mussel, *Ptychobranchus occidentalis*
Neosho pearly mussel, *Lampsilis rafinesqueana*
Regal fritillary butterfly, *Speyeria idalia*
Snuffbox mussel, *Epioblasma triqueta*
Spectacle-case mussel, *Quadrula cylindrica cylindrica*
Warty-backed mussel, *Quadrula nodulata*
Western fan-shell mussel, *Cyprogenia aberti*

Fishes
Banded darter, *Etheostoma zonale*
Banded sculpin, *Cottus carolinae*
Black redhorse, *Moxostoma duauesni*
Blue sucker, *Cycleptus elongatus*
Bluntnose darter, *Etheostoma chlorosum*
Brassy minnow, *Hybognathus hankinsoni*
Gravel chub, *Hybopsis x-punctata*
Greenside darter, *Etheostoma blennioides*
Highfin carpsucker, *Carpiodes velifer*
Northern hogsucker, *Hypentelium nigricans*
Ozark minnow, *Notropis nubilus*
Plains minnow, *Hybognathus placitus*
River darter, *Percina shumardi*
River redhorse, *Moxostoma carinatum*
River shiner, *Notropis blennius*
Slough darter, *Etheostoma gracile*
Speckled darter, *Etheostoma stigmaeum*
Spotfin shiner, *Notropis spilopterus*
Spotted sucker, *Minytrema melanops*
Stippled darter, *Etheostoma punctulatum*
Tadpole madtom, *Noturus gyrinus*
Topeka shiner, *Notropis topeka*

Amphibians
Red-spotted toad, *Bufo punctatus*

Reptiles
Alligator snapping turtle, *Macroclemys temmincki*
Rough earth snake, *Virginia striatula*
Western hognose snake, *Heterodon nasicus*

Birds
Bobolink, *Dolichonyx oryzivorus*
Cerulean warbler, *Dendroica cerulea*
Curve-billed thrasher, *Toxostoma curvirostre*
Ferruginous hawk, *Buteo regalis*
Golden eagle, *Aquila chrysaetos*
Henslow's sparrow, *Ammodramus henslowii*
Ladder-backed woodpecker, *Picoides scalaris*
Long-billed curlew, *Numenius americanus*
Mountain plover, *Charadrius montanus*
Prairie falcon, *Falco mexicanus*
Red-shouldered hawk, *Buteo lineatus*
Whippoorwill, *Caprimulgus vociferus*
Yellow-throated warbler, *Dendroica dominica*

Mammals
Eastern chipmunk, *Tamias striatus*
Franklin's ground squirrel, *Spermophilus franklinii*
Pallid bat, *Antrozous pallidus bunkerii*
Southern bog lemming, *Synaptomys cooperi*
Southern flying squirrel, *Glaucomys volans volans*
Texas mouse, *Peromyscus attwateri*
Townsend's big-eared bat, *Plecotus townsendii pallescens*

conditions (variability) were also the cause for decline. An example might be the armadillo, which may enter Kansas after a series of mild winters but is removed after a hard winter. Those species on the edge of their range but have permanent, well-established populations in the state were considered for listing. Examples include some Ozarkian fish species whose habitat extends into southeast Kansas.

The task force also decided that a species having no records of occurrence in Kansas in the past 35 years should be considered extirpated (removed from an area) and not listed until confirmed sighting is made. The mountain lion, for example, was previously found throughout Kansas. But the most recent collection occurred about 1902. Though the species is often reported, no confirmed or verified records exist from 1902 to present. Therefore, the task force could not justify considering it for any legal listing.

The Nongame Task Force reviewed a species status survey technique that the Texas Parks and Wildlife Department had used previously. The Fisheries Committee recommended this technique as one way to evaluate species considered for listing. Contained within the form were places to numerically rate a species population trend (continental and within state), rarity, taxonomy, breeding biology, habitat loss, sensitivity to environmental hazards, exploitation, recovery capacity and other biological data.

Task force members altered the form so that it would best apply to Kansas species. Each member used the revised forms to evaluate three fish species, one of which was threatened, one endangered and one not listed. While all raters gave the highest numerical listing to the endangered species, followed by the threatened and the not-listed species, there were considerable differences among raters. It appeared that the widest gap in rating stemmed from either ambiguity in survey directions, category explanation or the point system choices within each rating category. The form was subsequently revised, species re-evaluated, and the point spread for a given species was reduced considerably.

The task force decided to evaluate all 183 species using the revised survey form and then determine which species to select for review. The survey seemed to perform exceptionally well, and the team evaluated, reviewed and recommended a status for all 183 species. The survey form and instructions were then sent to 153 people, which included five categories of raters: academic, wildlife agency personnel, other professionals, other state and federal resource agencies and non-professionals. This data from these five areas was then fed in the agency's computer.

The task force committee reviewed each category in the survey and established minimum point values for each category. A computer printout was made by class, listing species within each class from lowest to highest index scores. Lines were drawn across the printouts at the minimum index scores in the different categories: Species in Need of Conservation, Threatened Species and Endangered Species.

Secondly, species whose standard deviation spanned more than one category classification were designated for closer scrutiny. Individual survey forms were studied for consistency among related categories and point values. Preference or weighting was given to those evaluations with well-documented evidence supporting a rater's ranking by category.

The third step in the process was a subjective evaluation applied to each species. Certain combinations of highly

Although the Eastern hognose snake's range has been documented as far west as the western tier of Kansas counties, its primary range is generally south of the Smoky Hill and Kansas rivers. Status here: threatened.

Cene Brehm photo

Endangered whooping cranes pass through Kansas each spring and fall.

The heel-splitter mussel, endangered in Kansas, is restricted to the lower reaches of the Neosho and Marais des Cygnes rivers.

J. T. Collins photo

R. F. Myers photo; Gene Brehm inset photo

The gray myotis (or gray bat) is endangered nationally. In Kansas the only known gray myotis populations are dependent on storm sewers within the Cherokee Plain region of the southeastern counties. Nearby streams with adjacent woodlands provide critical foraging habitat.

Right: The Scott riffle beetle, threatened in Kansas, is found in a spring area in Scott State Park, the only known location in the state. Shown here are the adult (left side of photo) and the larval stage (right side). The dime is used for size reference.

Lower right: In Kansas the green frog (threatened within the state) appears to prefer streams, brooks and adjacent backwater areas. The amphibian may also be found along small impoundments, water-filled ditches and strip pits. The only known populations occur in Cherokee County's Spring River Basin.

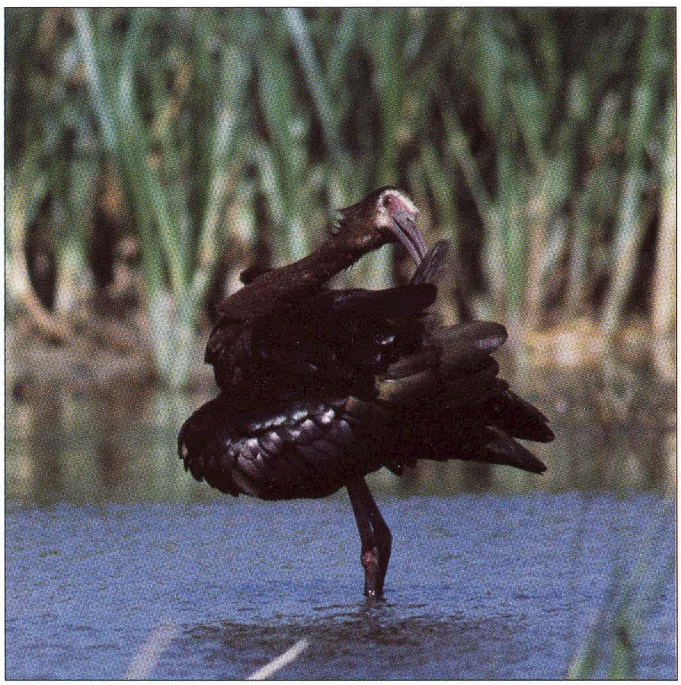
Below: The Eastern spotted skunk seems to prefer forest edges and upland prairie grasslands, especially near rock outcrops and shrub clumps. In western Kansas counties, it relies heavily on riparian corridors where woody shrubs and woodland edges are present. Woody fencerows and abandoned farm buildings also are important habitat. This threatened species may occur in suitable habitat anywhere in the state.

Mike Blair photo

Marvin Schwilling photo

Bob Gress photo

J. T. Collins photo



Mike Blair photo

The white-faced ibis prefers freshwater marshes where food items such as insects, salamanders, leeches, snails, crawfish and frogs are abundant. This threatened species is known to nest at the Cheyenne Bottoms Wildlife Area and Quivira National Wildlife Refuge in central Kansas.

ranked categories showed good reason to move a species to a higher category than designated solely by numerical rating. In other instances, some species had received unrealistically high ranking because of environmental factors or in some case a low number of evaluators. Yet when all categories were reviewed, there was documented evidence that populations, reproduction and habitat were not in jeopardy. Such organisms were then subjectively reduced to the appropriate category.

The steps taken to say a species is threatened, endangered or in need of conservation are complex. A tremendous amount of data and literature must be reviewed. Then an indexing must be performed and the species ranked numerically. That ranking must be evaluated statistically and then, if there's any doubt about the critter's status, a lengthy discussion follows.

Furthermore, all species listed on the federal threatened or endangered species lists must be listed on the Kansas list regardless of the organism's status with the state. In Kansas, the bald eagle received an index rating that placed it within the species-in-need-of-conservation category. However, because the bald eagle is listed nationally as endangered, it is also listed as such on the state list. While the species may still be endangered nationally, wintering populations have continued to increase in Kansas over the past 35 years.

The golden eagle received a numerical rating to classify it as threatened. The task force was split over whether it actually deserved this status or should be placed on the SINC list. A long discussion of biological data ensued, but the task force did not reach a unanimous decision. The only way to settle the dispute was to vote. Four of the five members voted for SINC status; one voted for a threatened listing. The logic was that the species' wintering population was in good shape, and the breeding population was stable, if not increasing. All this despite listing. So a compromise was reached; the bird was placed on the "watch list."

Some species formerly listed on T/E lists were reclassified to the SINC list. The Topeka Shiner is one example. Once found statewide, this shiner's range has been reduced to upland streams in the Flint Hills. After much review, the task force determined that any remaining habitats were relatively stable. In all probability, the grasslands bordering such streams will not be altered or plowed because of shallow topsoils underlain by rock. So the species current range and habitat is likely to remain. With these facts in mind, the task force reclassified the Topeka shiner from the threatened list to the SINC list.

Another fish, the Arkansas darter, is found over most of south-central Kansas. The species was originally classified as threatened. Where it occurs, the darter is abundant and relatively tolerant to habitat disturbance. But most of the streams currently inhabited by the Arkansas darter receive their base flows from the Big Bend Prairie Aquifer, and some of the streams that have been extensively developed are showing signs of dewatering, says task force member Ken Brunson. The species retained its threatened status because the streams it relies on are threatened by overappropriation of water.

Kansas has lost nearly 700 miles of streams, primarily from water loss due to irrigation. The Arkansas River shiner, as you might guess, was found in the Arkansas River. It spawned during flood flows. With such flows gone from the river, the fish no longer reproduces. In fact, it hasn't been found in the Kansas section of the river for a number of years.

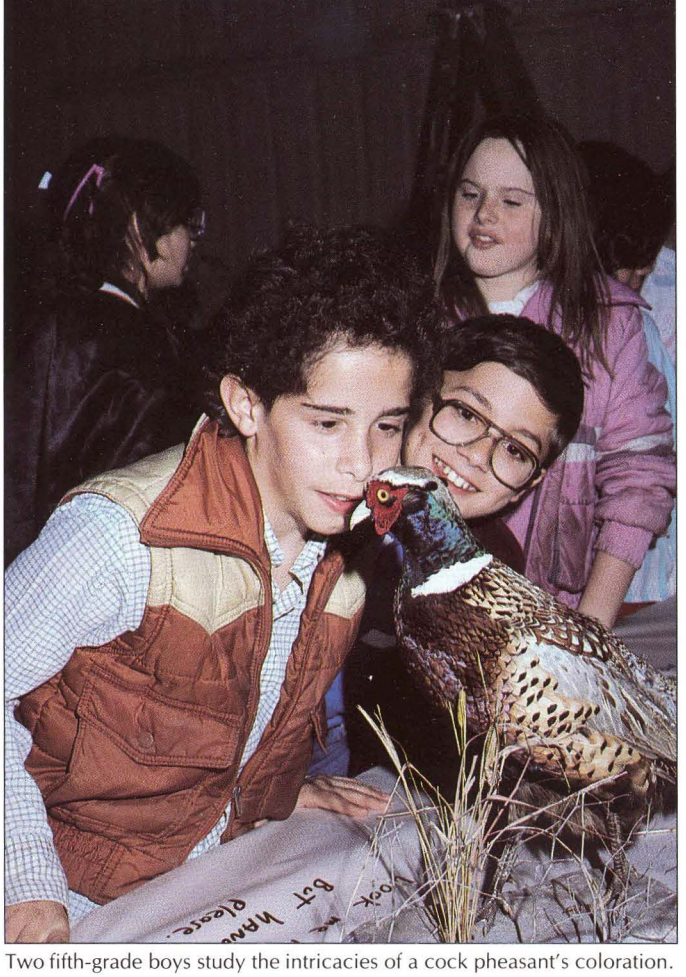
Most of the species listed as threatened, endangered or in need of conservation are there because of habitat loss. Dewatering, pollution, channelization, urbanization and other factors have reduced many habitats to the point that little remains.

Only one species recommended by the task force for endangered status was not listed. The mottled duck was known to breed at Cheyenne Bottoms about a dozen years ago and had not been observed for nearly that long. So a decision was made to search for the bird. Hunters turned in two mottled ducks during the 1986-1987 waterfowl season, and one bird was observed at the Bottoms during the summer. The population of mottled ducks at Cheyenne Bottoms is the only known inland breeding population in the world; most mottled ducks inhabit coastal marshes. Because the Bottoms population is non-migratory, it is extremely susceptible to hunting, and the breeding area itself is threatened by dewatering. The species' status will be re-evaluated if additional mottled duck sightings are confirmed.

Threatened and endangered species are important for several reasons. Charles Nilon, the Department's urban wildlife project leader, states: "Many such species are a part of the natural heritage of the people, part of the link between people's past and cultural traditions and related values." Task force member Marvin Schwilling adds: "Recognizing such species and protecting them helps to maintain species diversity. Every one contributes to ecosystem complexity. When parts of an ecosystem are removed, at some point, the system will break down."

And so, by protecting our diversity of life, we may indeed be protecting our own species from extinction. Whether we protect such species because it's morally just to do so or whether some genetic makeup potentially useful to man exists within a species' chromosomes, sensitive species are indeed our environmental barometers.

When one species becomes extinct, it tells us something is wrong. KW



Two fifth-grade boys study the intricacies of a cock pheasant's coloration.

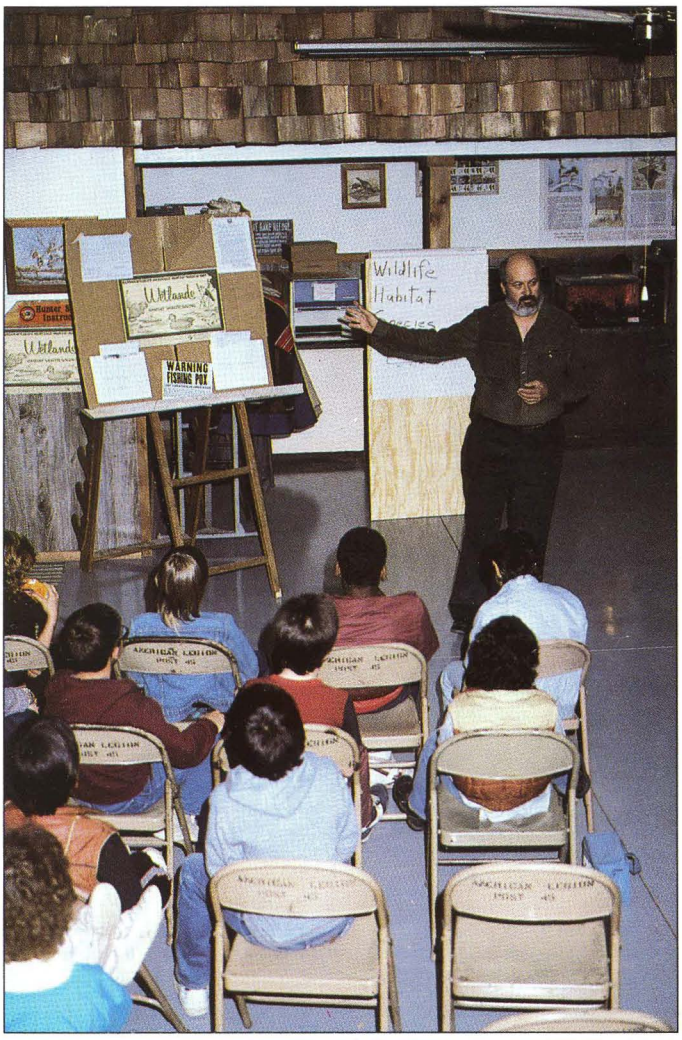
School Days, Field Days

Conservation educators may want to take a few tips from the Geary County Fish and Game Association. Kansas youth are sure to benefit.

Text and photos by Mike Blair
Staff Photographer

The Geary County Fish and Game Association (GCF&GA) took a cue from the National Wildlife Federation and started something big. In keeping with their commitment to conservation education and to

A channel catfish holds this young conservationist spellbound at the Milford Fish Hatchery. A mallard drake has the same grip on two boys (inset).



Classroom discussion is a big part of the Geary County Wildlife Field Days. Elementary students from four cities participated in the activities.

commemorate 1987 Kansas Wildlife Heritage Month, the association organized a new learning opportunity for a high-energy group — 350 Kansas fifth-graders from USD 475.

Dubbed Geary County Wildlife Field Days, the event was first conducted in March 1987 and involved elementary students from four cities. It wasn't simple — it took four one-day sessions and 20 "trained and vaccinated" volunteer group leaders to get all the students through the training. But organizers said it was a huge success and look forward to making it an annual event.

School district officials were impressed enough to consider it an "enrichment activity," meaning the day-long excursion away from class may not be charged against options for other field days.

Though much of the credit for success goes to Kathy Brown George, the project coordinator, and Ed Augustine, president of the GCF&GA, the grassroots idea evolved from the sportsmen's association itself.

"Our association has always taken a special interest in youth," said Augustine, "particularly in hunter-safety activities. Last year (1986), some of our members conducted a short learning activity for one third-grade class, and everyone wanted to expand it."

Augustine pointed out that careful planning is essential, both in selling an idea to educators and in implementing the activities. Ideas were gleaned from National Wildlife Federation youth materials, from other Kansas resource agencies and from the association's membership. Consideration was given to a target age, ways to provide a variety of enjoyable outdoor classes and the logistics of transporting and training hundreds of students.

"After we had a workable plan, Kathy and I took it to the school administration for their reaction," Augustine said. "They were very enthusiastic and agreed to provide transportation, lunches and scheduling. To keep classes small, we limited ourselves to 100 students a day. We divided them into four groups, and this worked out just right."

The Field Days were planned for fifth-graders. "We wanted a class that was together all day, so junior high was out," said Augustine. "But neither did we want them too young to understand. That left fifth- and sixth-grades, and we were told that 'sixth-graders get to do everything.' So we picked fifth-graders for our audience and used a small group of sixth-graders for a test group the day before we started. They spent all day telling us what 'those little fifth-graders' would like — they really ate it up."

Each day's events were broken into four parts, starting at GCF&GA's meeting facility near Milford Reservoir.

A "Think Tank" session was designed to teach students about habitat and man's influence on it. After a short classroom discussion, participants were taken to two pre-marked grid areas. One contained grass and trees, the other a gravel parking lot. Students were then asked to collect as many living things as possible. Findings in each habitat were then compared and discussed. The session ended with a slide program on unendangered wildlife.

At the next stop, Steve Stackhouse and Charles Howe, two Kansas Department of Wildlife and Parks employees, took students on a half-mile hike. Here they continued their habitat discussions, identified wildlife homes and discussed pond ecology. Students learned the value of trees and were allowed to plant 200 walnut seedlings provided by the sportsmen's association.

Milford Fish Hatchery provided the third stop. Volunteer workers gave tours of the facility and led discussions on hatching techniques and stocking methods. The most popular of all stops, the hatchery tour also allowed students to handle, weigh and measure channel catfish.

The final activity was a tour of the Milford Dam tower by a Corps of Engineers group leader. Students were led down the many flights of stairs to water level and told how the gates controlled water flow.

Kathy Brown George, who also is a commissioner for the Kansas Department of Wildlife and Parks, said that while such interesting tour stops located in a one-mile radius might not be available to everyone, each locality has unique resources that lend themselves to outdoor education.

"We're asking each fifth-grade teacher as well as the volunteer leaders to evaluate our activities this year," said Mrs. George. "We have put together a slide program, and based on what we've learned, maybe we can provide ideas that will help others get started in their own Field Days." The GCF&GA mailing address is P.O. Box 631, Junction City, KS 66441.

Editor's Note: *For information on Kansas Wildlife Heritage Month (March 1988) contact, Kathy Brown George at Rt. 3, Box 36A, Spring Valley Road, Junction City, KS 66441 or Elmer Finck at Kansas State University in Manhattan.* KW

the center section

Edited by Mike Miller

LETTERS

WASTED FISH?

Editor:

Tuttle Creek Reservoir is going through some repairs below the dam. To do this, the water was pumped out of the stilling basin and thousands of fish were trapped because they couldn't get downstream. Department of Wildlife and Parks employees seined and caught the fish, saving the big catfish, bass and walleye, but dumped the so-called trash fish on a nearby hillside. In among these trash fish were small channel catfish, crappie, bass and even walleye that also died in the dump. Is this not a waste? I'm sure there were farmers who would have come to get these small fish to stock in their ponds. Other private individuals may have had use for the fish, if this had been publicized.

Clarissa Springer
Manhattan

Dear Ms. Springer:

I talked with Steve Hawks, Northeast Regional Fisheries Supervisor, to find some answers to your questions. Hawks said that the Corps of Engineers drains the stilling basin periodically to inspect and repair the outlet structure. Wildlife and Parks personnel are asked to remove the fish from the basin as the water level is lowered. The Corps puts out a public notice about the project although Wildlife and Parks does not publicize the fish salvage. Why? Because excessive crowds have turned out at past salvages when the events were announced.

Hawks also said that all fish that can be returned to public water are saved. Very small channel catfish or crappie would not benefit a fish population if they were restocked, so those fish are not saved. The biologists do keep a list of individuals who would like fish for stocking private ponds, and those people are notified of the salvage. Hawks said that quite a few people did turn out at the Tuttle Creek salvage to take fish home. *Miller*

PERTURBED READER

Editor:

While reading your magazine I noticed a letter from a woman who explained that she was not going to renew her subscription (because she objected to hunting articles). While I agree with her, I subscribe to your magazine, along with the *Missouri Conservationist,* to glean a few interesting articles about people co-existing with nature. However, I then turned a few pages and came upon an article titled "Anti-hunt Cartoon" that really perturbed me.

By publishing this article, which concluded with the statement "to protest this program . . ." you assume that all your subscribers are pro-gun fanatics who shoot everything in sight. I disagree. I would assume that a lot of your readers are also concerned about wildlife and nature. They may have subscribed, as I did, because of your Chickadee Checkoff Program, which you promote as bringing wildlife back.

I not only wrote to let you know that I would not renew, but also would like for you to cancel my subscription.

Anita D. Heckenbach
Parkville, Mo.

Dear Ms. Heckenbach:

We hate to loose subscribers for any reason, but it appears that your attitudes differ drastically with ours and most of our readers.

First of all, we don't assume any of our readers' beliefs. We try to supply a variety of issues so readers can make their own decisions. We did not tell readers to protest the program, but we did supply an address if they disagreed with it.

We absolutely do not think of our readers as pro-gun fanatics who shoot anything in sight. That's as distasteful to us as it is to you. But it is agreed that we are biased. Hunters and fishermen have contributed more than $6 billion to wildlife management, conservation and habitat acquisition over the last 50 years. No other group has even come close to that.

I applaud you for contributing to the Chickadee Checkoff Program. The program is important for nongame species. Many non-hunters enjoy wildlife but make no effort to promote its conservation. But fishermen and hunters pay millions of dollars each year to conserve Kansas wildlife. Hunters' dollars are responsible for the management of one of the most important marshes in the Central Flyway: Cheyenne Bottoms. Millions of nongame shorebirds use the marsh for nesting and migration stopovers. Without hunters, the marsh may have been lost. Money spent to conserve game animals indirectly benefits nongame animals. Hunters are concerned about all wildlife and nature. *Miller*

PROTESTS SERIES

Editor:

For your information, I have enclosed a copy of a letter I sent to Michael Fuchs, the chairman and chief executive officer of Home Box Office about their "Seabert the Seal" program. Please feel free to use this letter or any part of it in any way you wish to promote conservation of wildlife.

Abram J. Nicholson
Shawnee

Editor's Note: *We are unable to run Mr. Nicholson's entire letter to HBO because of space limitations, but the following is an excerpt.*

. . . I object strenuously to the continued broadcasting of this show, which uses outright lies and graphic falsehoods to impune the character of sportsmen . . .

One of my greatest personal concerns is that television shows like "Seabert the Seal" will, over time, reduce the number of sportsmen to the point that the money needed for habitat conservation and restoration will fall below that necessary to sustain our wildlife. Hunters are the only group in existence that both care enough and is large enough to provide the funds needed for conservation of wildlife . . .

STARTING EARLY

Editor:

Does my 5-year-old son need a hunter education card to accompany me, without a firearm, on a hunt?

My father took me out when I was young and showed me nature and hunting, and I would like to have the same experience with my son. This age is the best time to start teaching them, but it is too young for them to grasp and retain the knowledge needed to obtain a card.

David Sheffler
Hutchinson

Dear Mr. Sheffler:

Your son or any observer may accompany you on a hunt without possessing either an education certificate or license. The important legal consideration, however, deals with the observer's involvement in the hunt. Your son may not take part in the hunt in any manner — flush a bird from cover, retrieve downed game or work hunting dogs, for example. If the observer is performing any such task directly related to taking game, he or she must be properly licensed.

The law, as it applies to hunting coyotes with dogs and vehicles, however, does not allow for unlicensed observers. Because the vehicle is used for pursuing the quarry, anyone riding in it must possess a hunter education certificate (if born on or after July 1, 1957) and hunting license if required. *Rob Manes, education coordinator*

ANTI-TRAPPER

Editor:

I have recently subscribed to KANSAS WILDLIFE magazine and just received my first issue (November/December). I am a relatively new resident to Kansas (one year) and am a member of an international wildlife organization. In my previous homes, I had subscribed to different wildlife magazines.

I was very surprised about the misleading title of your magazine, because only one article, "A Calling of Autumn," dealt in an educational manner with wildlife. All others concerned hunting, fishing and trapping.

I believe that a wildlife magazine should contain articles on wildlife and not on the killing of animals. It is more important to educate people on nature and the development of life and teach them to appreciate it. I have previously lived in Europe where many kinds of animals are extinct due to man's harvesting and excessive development, and where people realize now the damage they have done. But it is too late there. I realize Kansas has an abundance of wildlife and some need to be hunted every year. I am surprised, though, about the lack of education of those who hunt and the simplicity of obtaining a hunting license.

The article which truly upsets me in this magazine was the one on trapping. It is an unfair sport, nurished by the desire of ugly women to make themselves more attractive by wearing the skins of more beautiful beings. Trapping, which is being fought against worldwide, has led to the extinction of many animals.

I am returning the magazine and would like to cancel the subscription. As for the new title of the magazine, beginning next year, I suggest you leave out the word wildlife altogether and name it something like Kansas Hunting and Fishing.

Remember: Nature does not need us, but we need her. You, above all, should work for that.

Iris Ute Sutton
Manhattan

Dear Ms. Sutton:

As you stated, Kansas has an abundance of wildlife. But it hasn't always been like this. Only 50 years ago, Kansas was in the heart of the Dust Bowl. After the drought of the 1930s, many wildlife species were absent from the state, and the destruction of habitat by poor agricultural practices and blowing dirt left little hope for them. Today, our state boasts the largest population of prairie chickens in the nation, more than 100,000 turkeys, 400,000 deer and many more species are increasing in number each year. All this has happened with regulated hunting and trapping.

In fact, all this wouldn't have happened without hunting and trapping. Hunters and trappers have picked up the tab on wildlife management. They spend millions of dollars each year on licenses, permits and excise taxes that benefit all wildlife in Kansas. They also pay the bills for wildlife law enforcement.

Our magazine does teach readers about wildlife, but it also educates them about proper and ethical ways to hunt and trap. The November/December issue was heavy with hunting articles because this is the hunting season. Throughout the year, the magazine features many educational articles as well as information on all wildlife.

As upset as you are by trapping, you should know trappers pay for and help with furbearer research, which biologists use to manage populations. No species that is hunted or trapped in Kansas is threatened or endangered. In fact, most have seen dramatic increases in numbers in recent years.

I disagree with your closing statement; nature does need us. Without the millions of dollars it takes to run management programs, set aside land for habitat and enforce laws, Kansas wildlife might be left in the same shape as the wildlife in Europe. *Miller*

OLD TRAPPER

Editor:

I greatly enjoyed the article on trapping in the November/December issue. I am now getting ready for my 60th winter trapline. I'm a wildlife damage control volunteer for Bob Henderson (Kansas State University Extension Service).

I am a biologist that doesn't work in that field except as a very serious hobby. My farm yard was the home base for Maurice F. Baker of the Kansas State Biological Survey when he did his field work for the bulletin "Prairie Chickens of Kansas," published in 1953. I was very involved in this fieldwork and have done research on other species including raccoons, red fox, coyotes, fox squirrels and beavers.

William R. Brecheisen
Welda

STAND CORRECTED

Editor:

In the November/December issue on Page 21, the article "Hunters Decline," stated that since 1923 hunters have paid more than $4.8 million for the privilege to hunt. This must be an error. In 1985-1986, Idaho hunters paid more than $7.7 million just to hunt. What is the correct figure and what have Kansas sportsmen paid since 1923?

Here in Wyoming, my friends and I love KANSAS WILDLIFE almost as much as our annual hunting trip to your wonderful state. Keep up the good work.

Robert Crooks
Evanston, Wyo.

Dear Mr. Crooks:

We stand corrected. The sentence should read $4.8 billion, not million. Good catch. We didn't have a figure for Kansas hunters dating back to 1923, but Kansas hunters paid more than $4.1 million to hunt in 1986-1987. *Miller*

THE LAW

ILLEGAL ARTIFACTS

The Gallup, N.M., area, where Indian souvenirs and artifacts are traded extensively, was the focus of a major U.S. Fish and Wildlife Service (USFWS) undercover investigation. The operation ended Oct. 21 with 17 people arrested and 24 others charged with the illegal sale of eagles and other protected birds.

The investigation centered on the illegal killing and sale of protected birds. The illegal trade includes whole carcasses, feathers and parts of protected birds, which are fashioned into replicas of Indian artifacts and bought by commercial dealers and collectors.

A poaching network has been responsible for killing more than 600 protected migratory birds in the past 18 months. More than 50 species of birds, including 60 bald and golden eagles, falcons, hawks, owls and various songbirds were killed in Arizona, Colorado, Idaho, Louisiana, New Mexico, North Dakota, Oklahoma, Wyoming and Texas.

The 17 arrested individuals, identified by USFWS agents as wildlife traffickers, were charged with felony violations of the Migratory Bird Treaty Act and the Lacey Act, a law which makes it a federal violation to transport or sell illegally taken wildlife. The other 24 suspects have been summoned to appear in court on various wildlife law violations.

Ultimately, more than 50 people in five states are expected to be charged with violations. Craft stores, trading posts and pawn shops in the Gallup, N.M., area provide a major market for parts of protected birds killed by poachers.

State conservation officers provided federal agents with information about the illegal market. In 1986, agents began posing as dealers of illegal artifacts and bird parts in the Southwest. They were offered whole bird carcasses, feathers, tails, wings and feet used in fashioning traditional Indian crafts such as headdresses, peyote fans, lances, rattles and jewelry. More than 100 illegal transactions were made.

The agents discovered that shopowners in Gallup were buying many of the illegal items, dealing either directly with the poachers or through a middleman. Prices for unfashioned bald and golden eagle tailfeathers ranged from $100 to $350 per set. Finished eagle tailfeather fans brought between $200 and $800 each. Bluejay, woodpecker and red-shafted flicker carcasses brought $10 each, while dealers paid up to $50 for Harris' and Swainson's hawks and great horned owls.

The maximum penalty for violation of the Migratory Bird Treaty Act is two years in jail and a $2,000 fine. The Bald and Golden Eagle Protection Act calls for a sentence of one year in jail and a $5,000 fine (penalties double for second convictions). Violation of the Lacey Act can lead to a five-year jail sentence and up to $20,000 in fines. *Department of the Interior*

BY ANOTHER NAME

Why didn't they make up a fictitious name that no one would believe, like Mickey Mouse or Donald Duck?

Dave Beffa, Jefferson County conservation agent, recently checked an angler who admitted he had no permit. He also had no identification, but Beffa, writing up a ticket, said if the fellow's friends would vouch for his identity, all would be well.

"I asked one fellow who supposedly was the guy's brother and he gave a different name. A youngster with them also gave the same different name," Beffa said.

"I decided we'd better take a little trip to Hillsboro to sort things out. It turned out there was an Illinois warrant for the name the angler gave me for probation violations on burglary and forgery charges. Needless to say, they were happy to get him back," Beffa said.

"I figure the relatives made up the name they gave me to protect him. It's the only time I've heard where honesty wasn't the best policy. He gave me his correct name and it cost him." *Missouri Department of Conservation*

GAME THIEVES

Sportsmen are taking the rap for crimes they don't commit. Often, when a wildlife violation is reported, words such as sportsman, hunter or fisherman are used to describe the criminal. That's not correct, nor fair to true sportsmen. When someone shoots a game animal out of season, takes more than the daily bag limit or hunts or fishes on private land without permission, he or she is a poacher or criminal, not a sportsman, hunter or fisherman.

It's up to the real sportsmen of Kansas to right this wrong. When you look the other way or simply ignore someone breaking a wildlife law, you're no better than they. You can make a difference by reporting all wildlife-related violations. And it's not difficult to do. The Kansas Department of Wildlife and Parks has a toll-free number — **1-800-228-4263** — that can put wildlife conservation officers (WCO) at the scene of a crime in a matter of minutes. Calling the number will put you in contact with either law enforcement personnel or a dispatcher, who can then radio the WCO. The speed with which the process can work often results in convictions.

It's up to you. If you're tired of taking the blame for slobs' and poachers' actions, call **OPERATION GAME THIEF (OGT) — 1-800-228-4263.** Report everything you know about the violation, including crime committed, number of subjects, subjects' descriptions, vehicle type and tag number and location of violation. You can remain anonymous. With the large territory WCOs must cover, they can't be everywhere at once. Each tip reported to OGT makes wildlife law enforcement more effective. *Miller*

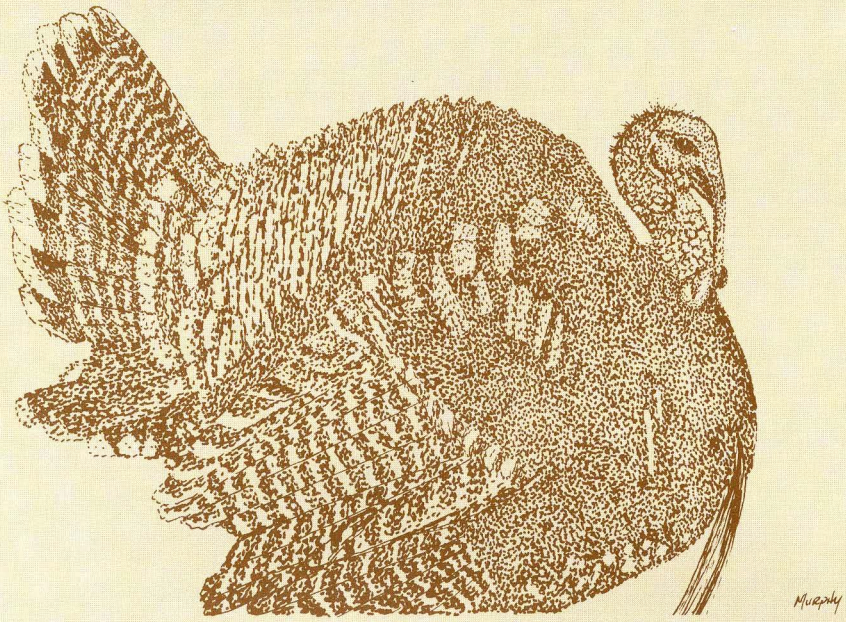
WAY OVER LIMIT

On Oct. 18, Lakin wildlife conservation officer Bruce Peters was on routine patrol when he noticed vehicles parked at the Arkansas River Bridge near Syracuse. He'd been having trouble with anglers taking too many catfish in that area, so he decided to walk up the river.

After walking nearly two miles along the river, Peters came upon a woman fishing. As Peters was talking with her, she spoke to another fisherman on the opposite side of the river. Peters saw the man pick up his gear and a bucket and leave. Knowing he'd never make it back to the bridge in time to stop the subject, Peters used his belt radio to call the Hamilton County Sheriff. The sheriff was able to get to the bridge before the subject left.

The Syracuse man had 111 channel catfish in his possession, all taken on rod and reel. The legal daily limit is 10. Peters wrote the man a ticket for exceeding the daily limit. The man was fined $161 plus $29 court costs. He also lost his fishing privileges for six months. *Miller*

HUNTING



HUNT SPRING TURKEYS

The 1988 spring turkey season won't start until April, but hunters must plan now if they want to hunt. A special permit is required to hunt turkeys, and hunters must apply for the permit between Jan. 11 and Jan. 29. The Spring Turkey Information brochure has season regulations and application forms for the April 13-May 1 season.

More than 7,000 hunters received spring turkey permits in 1987. Approximately 5,700 of those actually hunted, which is about 500 more than in 1986. Nearly 49 percent of the hunters bagged a turkey in 1987, compared with 44 percent in 1986. The increasing success rate and the fact that 1987 hunters reported seeing 34,000 more turkeys than were seen in 1986 reflects a growing turkey population.

Survey data show that the trend will continue in most parts of the state. Nesting success was excellent in 1986 and probably as good or better in 1987. This season should be one of the best ever, with the exception of southwestern Kansas. Due to dewatering of that area's streams, prime turkey habitat has dwindled. Biologists have limited the number of permits allocated in the southwest corner of the state to take hunting pressure off a shrinking turkey flock.

In other areas of the state, permit numbers have been increased and a large portion of south-central Kansas has an unlimited number of permits available. Non-residents will again be eligible to hunt in the unit. One new regulation that will take effect on May 1, 1988, limits the size of shot turkey hunters can use to sizes 2 through 9. *Miller*

ELK HUNT SUCCESS

The first Kansas elk season was perfect. All four of the lucky recipients bagged elk, and on top of that, they all bagged big bulls. The season, which opened Sept. 26 and ran through Oct. 11, was limited to Morton County only. The season ended early, however, when the last elk was bagged on Sept. 28.

The first elk taken may make the Boone and Crockett record book. Cameron Paxton of Goodland took the monster on Sept. 26. The bull had a massive set of antlers that sported seven points on one side and nine on the other. The base of each antler measured more than 14 inches in circumference. The bull's body was even more impressive, weighing 700 pounds after field dressing!

Later in the day, Scott L. Kitch of Elkhart killed his bull, which carried six points on each side. On Sunday, Sept. 27, Charles Jameson Jr. of Leavenworth bagged his six-by-six bull. And on the next day, Kenneth Fink of Garden City bagged the last bull, another six-by-six.

That's a 100 percent success rate for the state's first-ever elk season. And don't think it was easy. The elk in Morton County are as wild and wary as elk found anywhere. Although the elk are free-ranging, spending time on private property and across the border in Colorado, all were taken on the Cimarron National Grasslands public hunting area. *Miller*

ALLIGATORS RECOVER

The American alligator was once in danger of extinction because of commercial hunting and poaching. After years of protection and stricter law enforcement, the species now has recovered to such healthy numbers that the U.S. Fish and Wildlife Service has removed it from the Threatened and Endangered Species list. It will remain, however, under a "Threatened due to Similarity in Appearance" classification as a means of protecting still-jeopardized crocodilian species that have similar hides.

Under state and federal protection, the alligator began to recover in Louisiana, Texas and Florida as early as 1975. The recent reclassification now recognizes its recovery throughout its range.

Under the new classification, states are responsible for management of alligators and may conduct commercial hunting seasons. Data gathered in recent years by Louisiana and Florida wildlife agencies indicate that, with proper management, past mistakes can be avoided and overhunting should no longer be a threat. *Endangered Species Technical Bulletin*

TROPHY TURKEYS

Kansas turkey hunters can now apply for trophy turkey certificates. The Kansas Department of Wildlife and Parks has recognized deer hunters and fishermen who have bagged trophy-sized deer and fish. Now turkey hunters will have the same opportunity.

The award program is set up the same as the National Wild Turkey Federation's program. To figure a score, weigh the bird to the nearest one-eighth of a pound on certified scales. Then measure both spurs, add their lengths and multiply the sum by 10. Measure the beard length to the nearest one-eighth of an inch, multiply it by two, and add the three totals together. A 20-pound bird, for example, would receive 20 points for weight, 20 points for a 10-inch beard and 20 points for two 1-inch spurs. That gives that bird a score of 60, which is the minimum score to qualify for the certificate.

Toms that have more than one beard will qualify for the non-typical category. Simply add the lengths of the beards together and multiply by two. *Miller*

STARTING OUT

No Little Leaguer has to face a Nolan Ryan fastball when he's just learning to bat, but all too often, the young hunter who's just learning to shoot is thrown into the "major leagues" before he's learned the fundamentals. For instance, it's more than a little discouraging for a learning shooter to miss target after target at the skeet station with a gun that doesn't fit. Here are some tips on starting a young hunter out right:

One of the most important fundamentals is firearms and hunting safety. First, it's important that the youngster is completely familiar with the gun. The young hunter should know how the action works, how to load and unload the gun and how to properly work the safety. These basic fundamentals should be practiced long before the hunter steps into the field.

Second, it's important that young hunters have the chance to actually practice safe hunting habits before the season opens. You can simulate a duck hunt, for example, by building a mock blind out of bales and letting the youngster shoot clay targets from the blind. It's a great way to teach the young hunter about the safe zones of fire and handling a gun in close quarters.

Beyond developing basic wingshooting skills, practice should help build confidence in a young shooter. Portable traps are ideal for practice. Start out with slow targets and easy angles. Be sure to keep the practice simple and fun.

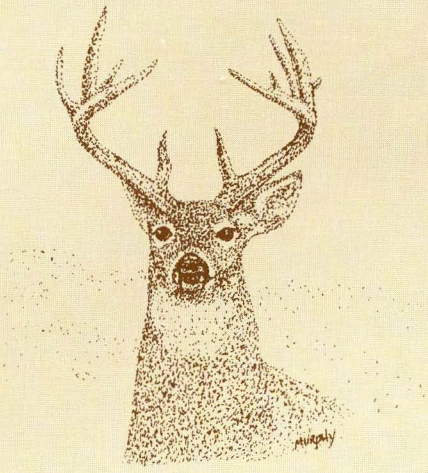
The truth is, few Little Leaguers will ever make it to the majors. But every youngster will be able to enjoy hunting and shooting for a lifetime. *National Shooting Sports Foundation*

STILLHUNT RABBITS

If you're sitting around on a cold, snowy January day with nothing to do, get out to your favorite rabbit hunting spot and stillhunt. Stillhunting a difficult and challenging way to hunt, but its rewards are great.

The hunter can use a small-caliber rifle or bow. Stillhunting is much like its name — you stand still more than you move, and when you do move, do it slowly. Pick a timbered area, preferably with cedar trees. Take a few steps and stop. Stand still and search every spot of cover you can see. Often cottontails will sit backed up to a cedar tree trunk. After searching the cover, take a few more steps and repeat the search. Some hunters look for the black eye of the rabbit as the fur usually blends in with the weed cover. If you have the patience, you'll be surprised how many rabbits you can spot before they bolt.

Stillhunters can take their time with shots and make clean kills. And stillhunting rabbits will prepare you for deer hunting. It's more difficult to hunt deer this way, but it may be the most rewarding. It's also a good way to see wildlife that would go unnoticed if you simply plodded through the woods. *Miller*



BIG DEER AWARDS

If you're a deer hunter lucky enough to take a big buck this year, you may qualify for a Kansas Trophy Deer Award. The Kansas Department of Wildlife and Parks will send you a certificate if your buck's antlers equal or better the minimum scores set for each category. And if your buck's really big, it might make it into the state's Top 20 list.

For a bowhunting award, the minimum Pope and Young scores are: typical whitetail, 115; non-typical whitetail, 120; typical mule deer, 135; non-typical mule deer, 150. To break into the bowhunting Top 20 list, the buck must be considerably larger. The lowest scores in each category are: typical whitetail, 170 1/8; non-typical whitetail, 183 2/8; typical mule deer, 163 4/8; non-typical mule deer, 164 6/8.

The minimum Boone and Crockett scores for firearms deer awards are: typical whitetail, 135; non-typical whitetail, 150; typical mule deer, 150; non-typical mule deer, 185. The lowest scores on the firearms Top 20 list are: typical whitetail, 176; non-typical whitetail, 189 1/8; typical mule deer, 169 2/8; non-typical mule deer, 192 6/8.

If you think your buck might qualify, contact the nearest Wildlife and Parks office. Agency personnel will direct you to a certified Boone and Crockett or Pope and Young measurer in your area. After the rack has dried for 60 days, the measurer can fill out the award score sheet and send it to the Wildlife and Parks office in Pratt. You'll receive your certificate shortly after the score is accepted.

It takes a whopper of a buck to break into the Top 20 list, but 19 hunters managed to do it in 1986. The combination of a strict management program, good habitat and tremendous food sources allow Kansas deer to grow big and healthy. It takes a great deal of preseason scouting, patience and self-control to take a big buck, but just the sight of a monster buck makes the season successful to the dedicated deer hunter. *Miller*

STEEL IN CALIFORNIA

The California Fish and Game Commission went to court last fall, claiming that the U.S. Department of the Interior was illegally threatening to close that state's waterfowl seasons. The Interior Department would have closed California's waterfowl season if the state didn't require non-toxic steel shot for waterfowl hunting in several designated counties. The phasing out of lead shot for waterfowl hunting is being done nationwide, and by 1991 all waterfowl hunters will be required to shoot steel shot under the Interior's plan. When California questioned the Interior's authority to require steel shot, the Interior threatened to leave California's waterfowl season closed.

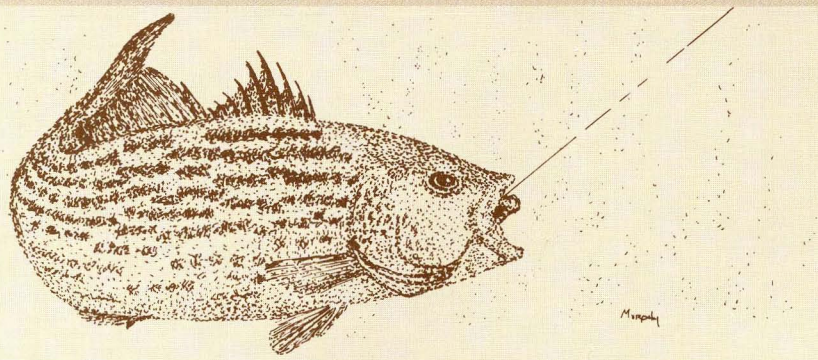
The California court supported the Interior's interpretation of federal laws. Those being that the federal government has final authority on whether to leave areas closed to hunting. California either implements the steel-shot zones, or has no waterfowl seasons. *National Wildlife Federation*

SHOOT ALL YEAR

Bowhunters who shoot throughout the year are usually more successful at hunting than those who aren't as dedicated. Hunters who quit shooting after the season have to get reacquainted with their bows during the summer or fall before the next season. More and more bowhunters are turning to indoor shooting ranges for winter recreation as well as hunting preparation.

Indoor ranges are a great way to keep your shooting eye as well as your arm and back muscles in shape. But no matter what your physical condition is, your bowshooting muscles won't be in shape unless you practice frequently. If there's no indoor range nearby, pick the warmest winter days and spend a few minutes shooting each week. You'll be surprised how much difference it makes next season. *Miller*

FISHING



RECORD WIPER

Another state fish record has been broken. And this fish record seems to get bettered every year. On Sunday, Nov. 1, 1987, Jimmie Alexander of Junction City caught a 14.87-pound wiper (white bass-striped bass hybrid). The former record, taken from Glen Elder Reservoir, weighed 11.56 pounds.

Alexander's monster wiper came from an unlikely fishing spot: below the Milford Reservoir dam. It's unlikely because wipers have never been stocked in the reservoir or the river. Alexander said that this was the third wiper he has caught in the last two years, one from the lake and two below the dam. It's anyone's guess as to where the fish migrated from, but there's no doubt that it's a new state record.

Alexander, retired from the civil service, says he fishes at least twice a day, in the lake during the morning hours and in the stilling basin below the dam in the evening. On the evening of Nov. 1, he was fishing for walleye and white bass in the swift water of the stilling basin when he hooked the huge fish. Alexander commonly fishes with light tackle, and on this day he was fishing with a spinning reel, 8-pound line and a one-eighth-ounce curly-tail jig.

"I was just lucky the fish decided to run upstream into the current, instead of downstream," Alexander said. "If the fish had run downstream along the rocks, I don't think I would have had a chance."

"It was very exciting," Alexander said of the 12-15 minute battle. He was also glad he had his wife along to net the fish as he worked it into shallow water.

The wiper is fast becoming a favorite with fishermen, because it grows fast and fights hard. It looks similar to a striped bass, but has a stockier body with more pronounced and broken lateral lines. Breaking the old record by more than three pounds, Alexander's record may stand for some time. But with dedicated anglers like Alexander and the wiper's growing potential, don't bet on it. *Miller*

ICEFISHING TIPS

Icefishing is a new sport for Kansans and more and more fishermen are trying it each year. Here are a few tips to make your outings more enjoyable:

Dress warmly. That sounds pretty obvious, but many people will not wear enough clothing on their first icefishing trip. Many fishermen are used to hunting small game in the winter, and they'll wear their hunting clothes when icefishing. It won't work. Dress warmer than you think you need to; you can always shed a layer of clothes.

Bring bucket to haul your gear in, it also makes a good seat.

On reservoirs with striped bass, the chance of catching a trophy-sized fish is good. But getting a big striper through a small hole in the ice can be tough. It's a lot easier with a small gaff. Make one with a short piece of broom handle and a large 10/0 trotline hook. *Miller*

ICEFISHING HOT

If the weather cooperates, Kansas icefishing could be excellent this winter. Two good icefishing reservoirs, Glen Elder and Wilson, held high water through much of last summer. The high water flooded vegetation, providing lots of food and spawning habitat. Shad spawns were tremendous and white bass, stripers and walleye should be fat this winter.

The weather is the deciding factor for Kansas icefishing. The past two winters have offered fishermen only limited opportunities to icefish. It takes up to a week of temperatures below 20 degrees to make safe ice. Often in Kansas, cold temperatures only last a few days before warming up. This can create dangerous situations. The best icefishing is generally right after the ice freezes. Without the wind, the water clears up and gamefish feed like crazy. Tremendous catches of white bass, stripers and walleye have come from Glen Elder, Wilson and Cheney reservoirs on this early ice. But take extreme care before venturing out.

Several fishermen fell through the ice at Cheney last winter because temperatures just didn't stay cold enough. None of the unlucky fishermen drowned, but you can bet they were cold and scared. Wait for ice at least 4 inches thick before walking on it. Clear ice is strongest, while dark ice may be weak. On open reservoirs, wind action may keep some areas from freezing. Give open water a wide berth or stay off if there are large areas of open water.

When temperatures fluctuate, ice may form, melt and re-form. This creates very unsafe ice that may look honeycombed. Warm temperatures may also cause ice to crack. Large cracks also reduce the ice's weight-carrying capacity.

The best way to stay dry and alive is wait for good hard ice. Call bait shops or Kansas Department of Wildlife and Parks personnel for ice reports before driving to the lake. It's also a good idea to make test holes to check the thickness as you walk to your fishing spot. If Mother Nature doesn't provide cold weather, there's always next spring when fishing will heat up again. *Miller*

WALLEYE LIMIT

Lovewell Reservoir anglers will be throwing back walleye less than 18 inches long this spring. And they'll be helping the statewide walleye program in the process.

Each spring, fisheries biologists set nets in various reservoirs to catch pre-spawn walleye. Eggs and milt are taken from the fish, and the eggs are hatched at the Milford Fish Hatchery. The resulting fry are then distributed to reservoirs throughout the state. The 18-inch minimum length is an attempt to increase the number of sexually mature fish in Lovewell. Most anglers will keep walleye that are 15 inches long. That's usually a 2-year-old fish, one year before that fish would have spawned for the first time.

Biologists hope that the imposed limit, which takes affect Jan. 1, 1988, will significantly increase the number of eggs taken from Lovewell Reservoir. *Miller*

ISSUES

SWAMPBUSTER

In the November/December issue of KANSAS WILDLIFE, an article titled "Wetland Threat?" on Page 23 pointed out several loopholes in the 1985 Farm Act. The loopholes concerned rules that protected wetlands and allowed landowners to drain more wetlands without losing federal farm assistance. According to the Wildlife Management Institute, the U.S. Department of Agriculture (USDA) has released final rules protecting erodible land and wetlands and many of the loopholes have been corrected.

In the interim regulations for swampbuster, loopholes were created by liberal exemptions for "converted" wetlands, "commenced" drainage projects and swampbusting by agricultural drainage districts. To be exempt from swampbusting regulations, landowners now must show that either earthmoving activity or a contract/expenditure for drainage involving substantial funds took place before Dec. 23, 1985. Except for potholes and similar areas that have special protection, any former wetland that a farmer can prove was converted before Dec. 23, 1985, may be maintained as cropland, so long as no additional wetland acreage is drained by that person. Other wetlands where bona fide drainage projects were begun before Dec. 23, 1985, are exempt from the swampbuster until 1995. For wetland drained by agricultural drainage districts or through events beyond the landowner's control, the farmer now must prove that such drainage occurred without his/her prior acceptance or approval. *Wildlife Management Institute*

WOLF PLAN

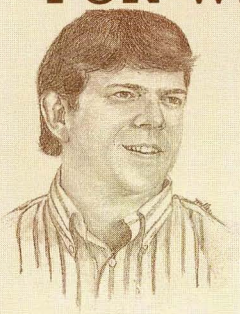
The U.S. Fish and Wildlife Service (USFWS) announced that the Northern Rocky Mountain Wolf Plan has been signed in Denver by John Spinks, deputy regional director. The plan identifies three areas suitable for wolves in the northern Rocky Mountains. These areas are northwest Montana, the Yellowstone National Park area and the Selway-Bitterroot wilderness area in central Idaho.

The plan has met some controversy, mainly from hunters and livestock men. There is concern about the damage wolves will do to deer populations as well as cattle and sheep.

"Wolves crossing the border from Canada have become established in northwest Montana and the monitoring and study of these naturally occurring animals is the Fish and Wildlife Service's first priority," Spinks said. "The Service has no plans to reintroduce wolves in any of the identified recovery areas," he added.

Spinks pointed out that a control plan is being developed to resolve wolf depredation problems that might occur. The goal of the control plan is to reduce and prevent livestock losses to wolves by removing the minimum number of wolves necessary. Control methods include live capturing and relocating, holding in captivity or killing offending animals. *U.S. Fish and Wildlife Service*

FOR WHAT IT'S WORTH



Where Are You Now?

by Ken Brunson, stream fisheries biologist

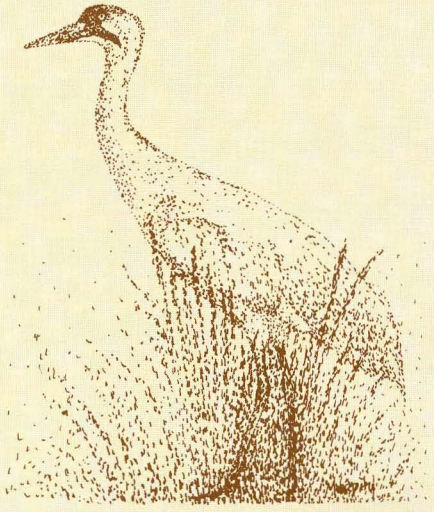
Environmentalism. Is it dead, or is it merely in a state of harmonic convergence with the planets? I'm talking about the banner-waving, song-singing spirit that once pervaded a generation bent on having a cleaner earth. I fear today's youth lack a clear understanding of the equation: standard of living + healthy earth = quality life. For too many years, our colleges have been overrun with a self-indulgent attitude, more concerned about the latest fashions in *Gentlemen's Quarterly* than a clean environment. But the young generation is not entirely to blame. Where are the earth-centered thinkers of the late 1960s and 1970s, the generation that discovered pollution? Where are the ecological zealots generated by Rachel Carson's *Silent Spring,* which chronicled the poisoning of our world? And what about the activism inspired by the Santa Barbara oil spill? How many of you middle-agers remember that one?

There were lots of emotions back then — some built only on excess time and energies. But some were channeled into constructive results such as a host of federal laws, pollution control programs, and the establishment of the Environmental Protection Agency.

Now the children of baby-boomer activists are entering our universities. Can we anticipate a resurgence of environmental activism from these offspring? Have you yuppies and past-hippies-turned-CEOs taught your children well? Or have you completely forgotten that you once had a strong environmental conscience? Granted, many pollution problems have been alleviated or their nature has changed. But we still suffer a host of ecological ills, ranging from toxic waste contamination to increased cancer rates in Kansas farmers, possibly related to pesticides. And most recently, we've had to deal with chlordane showing up in fish tissue. A very persistent chemical, chlordane has been used for years to control termites. It is also a suspected carcinogen, and has been found in alarming levels in urban fisheries, such as the Arkansas River in Wichita and the lower Kansas River. Recently, this situation prompted advisories that warned people to limit consumption of certain fish from these waters. We did have some interest in the problem, but I was amazed at the relatively sedate reaction to these advisories. I can count on both hands the number of letters and calls I had about chlordane. And this apathy occurred only 15 years after the first Earth Day celebration. Is our environmental conscience brain dead or just in a deep slumber, while we worry about what killer-thriller video to rent next?

I'm sorry to be so judgmental, but it looks as if it may be up to the members of the whole-earth generation and our offspring to rededicate this society to a clean and healthy environment. Our children will be important in this charge to provide energetic and constructive activism. And parents, you have the influence and money now to really make a difference. It's unfortunate that you didn't have these capabilities back when you had the commitment and drive. But it's not too late. There are many ways you can interject your influence to produce a safer and cleaner environment for your children's children. If you don't know how to help, contact one of the conservation groups listed on Page 25 of this magazine. Perhaps this is one way for you to finally find yourself and know exactly where you are.

NATURE



WHOOPERS GROW

The U.S. Fish and Wildlife Service and Canadian Wildlife Service estimate that more than 130 endangered whooping cranes migrated south from their Canadian nesting grounds at Wood Buffalo National Park. Officials reported a record production of 23-24 whooper chicks this year, bringing the total number of birds in that flock to 133.

The whooping crane's future has brightened since an all-time low in 1946 when there were only 16 wild birds. The last three years have all been exceptionally good with more young produced each year.

Last summer a Canadian biologist found 32 whooping crane nests containing 62 eggs. Biologists removed 24 eggs; 12 were transferred to sandhill crane nests in Idaho for foster parenting and 12 were taken to the Patuxent Wildlife Research Center in Maryland for captive breeding. Field surveys in June showed at least 27 chicks had hatched with 23-24 surviving to fledging stage in August. Twenty-one of the young whoopers were banded by biologists.

In contrast, an experimental flock that nests at Grays Lake National Wildlife Refuge in Idaho continued its decline. All 12 of the eggs from the Wood Buffalo nesting grounds hatched, but only two survived to fledging age. Cause of the poor survival rate is unknown. The Idaho flock now contains only 20-22 birds, down from 27 last year.

The Idaho flock was established in 1975 by taking eggs from the original whooper flock and transplanting them in sandhill crane nests. The more common sandhill cranes raise the young whooper chicks as if they were their own. In the fall, the whoopers follow their foster parents on an 850-mile migration to Bosque del Apache National Wildlife Refuge in central New Mexico. This is a shorter, less arduous trip than the 2,500 miles the original flock makes to the Aransas National Wildlife Refuge in Texas. *U.S. Fish and Wildlife Service*

THE RING CYCLE

Counting tree rings, as everyone knows, reveals a tree's age. Scientists now understand, however, that tree rings tell a much larger story: what the weather was like hundreds of years ago, how to predict droughts or how to date accurately the construction of an ancient temple when no historical documents exist.

According to *National Wildlife* magazine, tree rings hold the answers to these questions and more, now that the science of dendrochronology has entered the computer age. Dendrochronology, the analysis of the biological archives warehoused in tree rings, was born in the Arizona desert in 1901.

A. E. Douglass, an out-of-work astronomer, was trying to determine the effect of sunspots on weather. Taking samples of hundreds of trees and stumps, Douglass observed that trees from the same era and region shared patterns of narrow and wide rings, patterns that were as characteristic as thumbprints. Douglass also recognized that by matching inner rings of a young tree with outer rings of an old one, he could compile an accurate tree-ring calendar covering many years. This process, known as cross-dating, laid the foundation for dendrochronology. With the help of computers, modern scientists can analyze hundreds of samples simultaneously, thereby making dendrochronology simpler and more enlightening.

Today, tree rings provide researchers with reliable information on past and present air quality and environmental problems. Storing records of rainfall, air temperatures and changes in the chemical composition of the atmosphere, tree rings allow researchers to look at the earth as it existed hundreds, even thousands of years ago.

Documenting more recent history, scientists at the University of Arizona have plotted changes in trees (reflected in stunted growth and in the chemical composition of their rings) that occurred in Washington state after a lead smelter began operation in British Columbia.

Tree rings are also improving the accuracy with which human history is dated. Tree ring studies 20 years ago conclusively demonstrated that atmospheric levels of carbon-14 varied considerably rather than remaining constant, as had been previously believed.

Armed with these findings, researchers eventually prepared a revised radiocarbon dating schedule that upended many modern beliefs. For example, the ancient British astronomical observatory Stonehenge was found to be centuries older than previously assumed and was inspired not by Mediterranean civilizations but by native Britons.

The longest tree-ring sequence, based on living and dead bristlecone pines, goes back nearly 9,000 years. A particularly venerable bristlecone played a critical role in developing the sequence. At 4,900 years, it was considered the oldest living thing on Earth — until about 20 years ago when a researcher climbed Nevada's Wheeler Peak and cut the tree down to study its rings. *National Wildlife Federation*

WETLANDS IMPROVED

Kansas wetland habitat received a boost in six waterfowl management areas in 1987, thanks to the combined efforts of the Kansas Department of Wildlife and Parks (KW&P) and the Ducks Unlimited (DU) MARSH program. MARSH stands for Matching Aid to Restore States Habitat.

The cooperative effort, representing an expenditure of about $23,000 for nine different projects, marks the first usage of DU money for habitat development in Kansas.

Speaking at the state's first MARSH dedication ceremony, Dec. 2, at Marais Des Cygne Wildlife Area, KW&P Assistant Secretary W. Alan Wentz expressed gratitude for DU's financial assistance.

"We appreciate the efforts of Ducks Unlimited and its member sportsmen in our home state," said Wentz. "It's only been in the past few years that DU money has been used in the U.S. (for decades, it was used exclusively to improve waterfowl breeding and wintering areas in Canada and Mexico), and Kansas is glad to be involved in the early stages of the American effort. We expect many needed changes for our wetlands in the future."

The Marais Des Cygne Wildlife Area received $12,000 of the 1987 allotment, divided among three projects totaling 78 acres.

KILLER BEES

In the 1970s newspapers frequently carried reports about the impending arrival of killer bees from South America, bees that aggressively defend their nests and attack in large masses. The headlines and fears subsided amid speculation that the bees would be pacified when they bred with docile European bees kept in hives throughout America.

Now many scientists are sounding that alarm once again, according to an article by Don Lessem in the May/June 1987 issue of *International Wildlife* magazine.

The bees are actually African immigrants that were accidentally released from a Brazilian researcher's apiary in 1956. The newcomers quickly proliferated and began buzzing northward toward the U.S. at a 300-mile-per-year clip.

Unfortunately, the bees have now arrived in southern Mexico, and crossbreeding has not tempered their testy behavior. In fact, at least 700 people have been killed by the swarming insects, and the entire beekeeping industry is threatened. Last July, a student in Costa Rica was attacked after accidentally stepping in front of a nest. The student died after being stung more than 8,000 times. Unless we man the barricades now, some scientists say, the killer bees may breach the U.S. border as early as 1988.

The mass-stinging of the African bee may have evolved in response to its many tropical predators, including man. Attempts to modify its behavior led to the current predicament. Beekeepers have long been successful breeding more manageable, productive and disease-resistant bee strains. They hoped to produce an easygoing African hybrid that would yield more honey.

As things turned out, the African bees did interbreed although they dominated the European bees, even attacking behives and killing queens. By 1970 "Africanized" (no longer pure African) bees had conquered most of Brazil. By 1979 they had taken Columbia. And by 1981, they'd begun their assault on Central America.

Last September, bee experts gathered in Beltsville, Md., to discuss strategies for meeting the challenge. Thomas Rinderer, director of the honeybee research laboratory of the U.S. Department of Agriculture, suggested drawing the battle lines across Mexico's 135-mile-wide Isthmus of Tehauntepec, the narrowest remaining stretch of land between the killer bees and the U.S. Rinderer's plan would use drone traps to capture male bees, plus baited hives to attract swarms. The operation would require a work force of 1,100 and some 200 vehicles, which has raised some eyebrows from skeptical members of Congress.

Some scientists are also skeptical. One expert, Orley Taylor of the University of Kansas, thinks that the barrier, which he refers to as the "Maginot Line" — would inevitably fail. "You can't stop the bees from coming," he argues. "They can fly right through the barrier zone."

While scientists argue over different solutions and solicit money to fund them, the bees keep coming. For worried non-scientists, the only recourse may be to pray for cold weather, which can kill the bees. Unlike the mild-mannered European bees kept by beekeepers, the African bees do not survive long winters. According to Taylor, the African bees should progress no farther than the Southwest and the Deep South.

Taylor's predictions, however, apply only to the pure strain of African bees. The northward range of hybrid, or Africanized bees, may be a different matter, Rinderer says. "I think hybrid swarms could be more cold-resistant and still be aggressive. Africanized bees are a serious threat to all North America," he says.

Or perhaps the African bees are no threat at all. Entomologist David Roubik has been studying African bees for a decade. He concludes that predators, cold weather, lack of familiar food and nesting material, plus mating competition from European bees, will greatly limit the African bee's incursion into North America. There are more than 4 million commercial bee colonies in the U.S. — a supply of European bees so enormous, says Roubik, that even the pushy Africans may be unable to supplant them. *National Wildlife Federation*

MARTIN REGISTRY

The Colony Registry Program of the newly formed Purple Martin Conservation Association (PMCA) seeks the help of all persons in finding and registering purple martin colonies throughout North America. The Association is preparing for several projects designed to help this man-dependent species. The martin has experienced long-term declines within parts of its breeding range. If you know someone who has a martin colony or is trying to attract one, or if you're interested in starting a colony yourself, write to: The Purple Martin Conservation Association, P.O. Box 178, Edinboro, PA 16412. *The Purple Martin Conservation Association*

CONSERVATION GROUP

Listed below are several wildlife and conservation groups (by no means the only ones) that are open to the public. Call or write the organization contact provided for more information on that group's activities and membership.

National Audubon Society (with Kansas chapters)
Contact: Joyce Wolf
2535 Arkansas
Lawrence, KS 66046
913-749-3203

Kansas Campers Association Inc.
Contact: Raymond Ridgway
5640 Monrovia
Shawnee, KS 66216
913-631-6240

Kansas Canoe Association
Contact: Dean W. Wilson
3509 SE Highland Ave.
Topeka, KS 66605
913-266-6591

Kansas Herpetological Society
Contact: John E. Simmons
Museum of Natural History
University of Kansas
Lawrence, KS 66045
913-864-3342

Kansas Ornithological Society
Contact: Jane Hershberger
Rt. 3, Box 31AD
Newton, KS 67114
316-283-5129

Sierra Club (with Kansas chapters)
Contact: Tom Kneil
Box 272
Wichita, KS 67201
316-744-1016

Kansas Trails Council
Contact: Richard Douthit
1737 Rural St.
Emporia, KS 66801
316-342-5508

Kansas Wildflower Society
Contact: Virginia Hocker
Mulvane Art Museum
Washburn University
17th & Jewell
Topeka, KS 66621
913-295-6324

Kansas Wildlife Federation
Contact: Jerry Hazlett
P.O. Box 5715
Topeka, KS 66605
913-266-6185

NOTES

KWF AWARDS

The Kansas Wildlife Federation presented its 1987 conservation awards at its annual fall meeting. Twelve Kansans were honored for their outstanding contributions to resource conservation.

Marsha Marshall of De Soto was named Conservationist of the Year. Marshall is the founder of the Kansas Natural Resource Council and was noted for her legislative work in protecting flows in Kansas streams.

Carroll Lange of Winfield was named Wildlife Conservationist of the Year. Lange, a district wildlife biologist for the Kansas Department of Wildlife and Parks, worked extensively in the wild turkey reintroduction program as well as wildlife habitat enhancement projects.

Mary Winder of Troy received the Land and Soil Conservationist of the Year Award. Winder has been active in promoting roadside wildlife habitat, getting cooperation from the Kansas Department of Transportation as well as support from the Governor's office.

Ken Brunson of Pratt was named Water Consevationist of the Year. Brunson, a stream fisheries biologist for Wildlife and Parks, has been instrumental in developing and passing minimum stream flow legislation.

Larry Miller of Caldwell was named Conservation Educator of the Year. Miller and his sixth-grade class brought attention to Kansas reptiles when they successfully campaigned to have the ornate box turtle named the state reptile.

Dennis Spaniol of Wichita was presented the Conservation Legislator of the Year Award. Spaniol helped carry the banner for the state waterfowl habitat stamp, which passed in the 1987 Legislature.

Darren Jackson of rural Butler County was named Youth Conservationist of the Year. Jackson was active in fisheries- and wildlife-related 4-H programs, including a Canada goose reintroduction project.

The Geary County Fish and Game Association is the Conservation Organization of the Year. This organization has been active in getting the Milford Conservation Education Center funded and has organized many innovative youth education programs.

Charles Swender of Kansas City is the Outdoor Skills Instructor of the Year. Swender has been a hunter education instructor for 18 years and now heads the Tri-County Rod and Gun Club's annual education programs.

George Stanley of Wichita was named Conservation Communicator of the Year. Stanley, the outdoor writer for *The Wichita Eagle-Beacon,* was honored for his outstanding coverage of conservation issues throughout the year. *Miller*

COOKOFF WINNER

Mike McKernan of Wichita won the first International Game and Fish Cooking Association cookoff, held in Wichita on Oct. 3. The contest was held in conjunction with Wichita's Ocktoberfest. McKernan won a trip to the World Cookoff. Other contestants received prizes provided by The Coleman Company of Wichita and Taylor California Cellers. The winning recipe included venison, pheasant and crawdads. *Mona Gonzales, cookoff chairman*

EDUCATION CENTER

The idea began more than four years ago. The vision was a visitors' center at the Milford Fish Hatchery, which grew to a building where visitors could not only learn about the hatchery, but wildlife and conservation as well. There were many hurdles to clear, the most difficult being the funding, but at the Nov. 17 ground-breaking ceremony, construction began on the Milford Conservation Education Center.

One group that worked hard to get the center built is the Geary County Fish and Game Association. Member Ed Augustine said that the group saw the center as not only being very educational, but a way to draw people into the Junction City area. Group members generated interest among area businesses. "A good deal of effort has gone into generating local interest and contributions. Jim Nixon, the committee fund-raising chairman for the center, has done an excellent job in getting the project to its current status," Augustine said.

Nixon said that Junction City area residents donated more than $120,000 to help build the center. He was also able to get taxidermy and landscaping work donated.

The plans for the new center include displays that show how an intensive hatchery works. There will even be raceways for visitors to view. But the hatchery display will only be a small part of the center. Visitors will be able to see Kansas wildlife in its natural habitat in a life-like diorama. The display will feature predator-prey relationships and how each species has its own specific habitat. Another three-dimensional display will feature aquatic life in Kansas. Aquatic species will be shown interacting with each other and their respective habitats. The center will also feature a theater where visitors can view a variety of conservation and wildlife related videos.

"I'm enthusiastic about the center," said Robert Meinen, Secretary of the Kansas Department of Wildlife and Parks. "I think this approach will grow in importance throughout the Midwest as resource agencies look for new and better ways of getting information to the people, particularly those from urban areas."

Meinen said that a recently published Presidential Commission Report on Americans Outdoors stated that more than 80 percent of the public will live in urban areas by the year 2000. He believes that facilities like Milford, located near populated areas, will provide an ideal means of helping increase awareness of the outdoors.

"The Milford Center is a step in the right direction for Kansas, and of course we're pleased that it's being built near an agency facility, the Milford Fish Hatchery," Meinen said.

As more areas become developed, wildlife habitat is being lost at an alarming rate. Kansans will have to become aware of the needs of wildlife to ensure its place in the future. Education will be the key to the future of Kansas wildlife resources. *Miller*

WETLAND STATUS

The National Wildlife Federation has published a pamphlet titled "Status Report on Our Nation's Wetlands." The color publication is intended to educate and inform readers about the importance of wetlands. The pamphlet explains what wetlands are and why they occur, the functions and values they provide and some of the recent trends in national and regional wetland acreage. It also outlines some of the leading causes of wetland destruction and what is necessary to stop and perhaps reverse this trend.

The publication is full of excellent color photographs, maps and graphs, making it easy and enjoyable to read. For more information contact the National Wildlife Federation, 1412 16th St., N.W., Washington, D.C. 20036-2266. *Miller*

NATURE'S NOTEBOOK

by Joyce Harmon Depenbusch, Wildlife Education Coordinator

BIRD FEEDER IDENTIFICATION

Identify the birds below. See how many of these birds can be found near your feeder. Check your answers by reading the next page.

1. Evening grosbeak

The male evening grosbeak has a bright yellow forehead and eyebrows with a gray body and white wing-tips. The female is similar but grayer. The grosbeak has a short, heavy beak that it uses to crack seed shells. Grosbeaks can be attracted to feeders with sunflower seeds.

2. Red-breasted nuthatch

The red-breasted nuthatch has a black cap on its head and a black band running through its eye. The upper body is blue-gray and its breast is pale rust. It often creeps downward headfirst on tree trunks while looking for food.

3. Downy woodpecker

The downy woodpecker is black-and-white streaked with black bars on its outer tailfeathers. The male has a red spot on the back of its head. The downy looks much like its larger cousin, the hairy woodpecker. Downy woodpeckers eat insects but can be attracted to a feeder with suet.

4. American goldfinch

The male goldfinch is bright yellow with a black crown, wings and tail in the spring. In the winter, both male and female are a grayish color. They eat dandelion, thistle and other plant seeds. The call is a cheerful *per chicoree*.

5. Cardinal

The cardinal or "redbird" is the most readily identified songbird. The male is bright red with black around its beak. The female is yellow-brown. The cardinal has a heavy beak and eats insects, fruit and weed seeds. Sunflower seeds at a feeder will attract cardinals.

6. Pine siskin

Pine siskins have brown streaked bodies with yellow patches on the wings and tail. They eat insects in the summer and seeds during the winter. Pine siskins emit a *tit-a-tit* call as they feed in small flocks.

7. Cedar waxwing

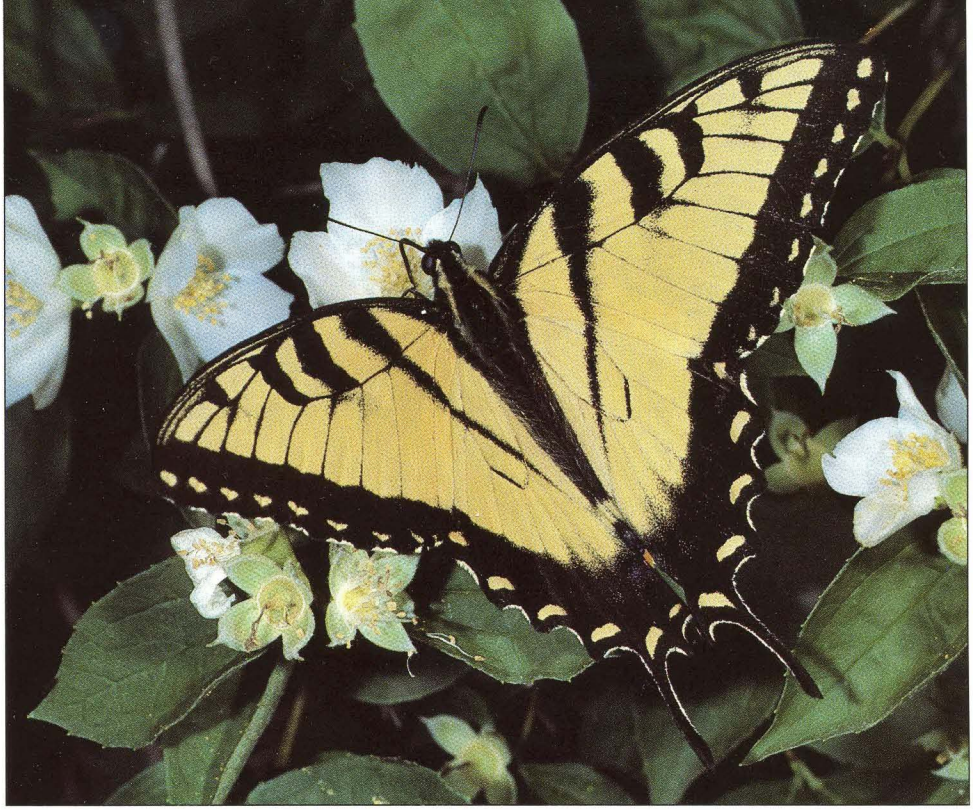
Cedar waxwings are brown with a black mask. They get their name from the hard, red wax-like tips on the secondary wing feathers. They eat mostly fruit and insects and almost always feed in flocks.

8. Slate-colored junco

The junco is slate-gray on its back and upper breast. The lower breast is pale gray. In summer, the junco eats insects but changes to weed seeds in the winter. Its nickname is "snowbird" because blizzards don't seem to bother them at all.

9. Black-capped chickadee

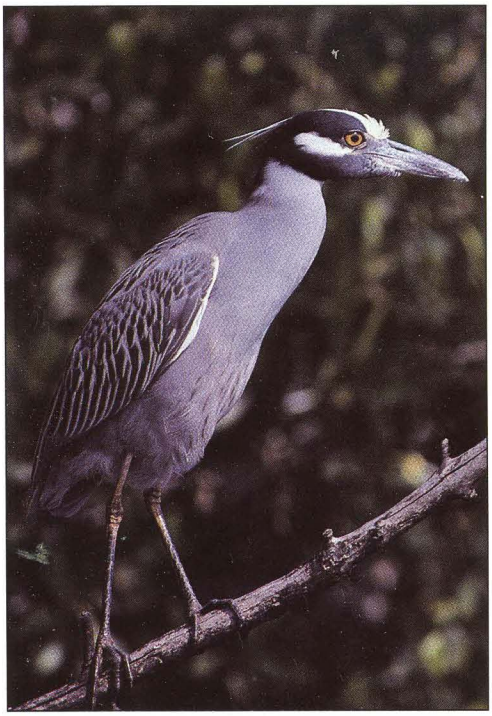
The chickadee's crown, throat and back are black. The outer margins of the wings are white. Insects and insect eggs are its main food. The bird is a common visitor to feeders, and its *chick-a-dee-dee-dee* call will help you pick it out in a crowd.



Gerald J. Wiens photo

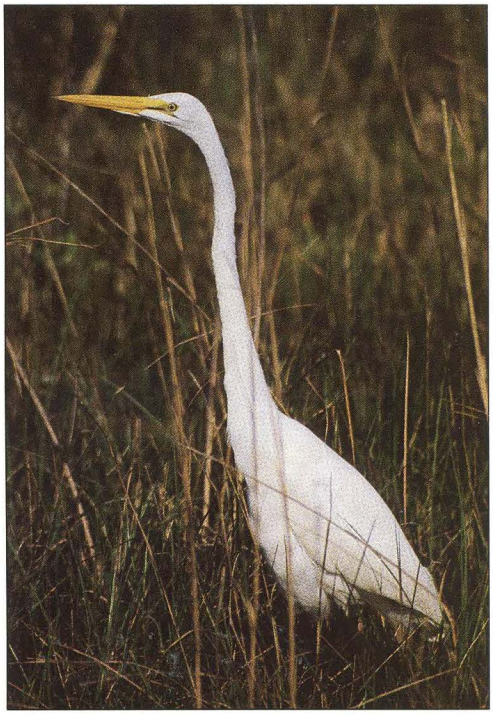
Gerald J. Wiens of Arkansas City, Kan., won first-place with this photo of a tiger swallowtail.

1987 Chickadee Checkoff Photo Contest Winners



Jeanne Greenlee photo

Jeanne Greenlee of Kansas City, Kan., took second-place honors with her photograph of this yellow-crowned night heron (left). Gerald J. Wiens also captured third-place with this photograph of a great egret (shown at right).



Gerald J. Wiens photo

On Eagle's Wings

The goal: increase the nesting populations of golden eagles in Kansas by 1995. Now . . . if the eagles only do their part.

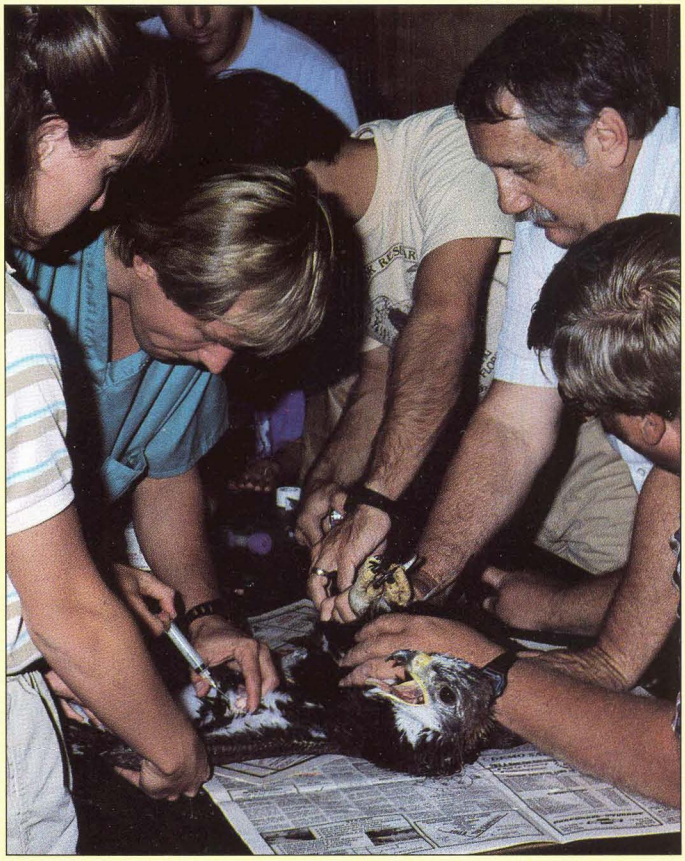
by Steven G. Sorensen
Regional Wildlife Supervisor
Concordia

Once a common nester in western Kansas, the American golden eagle is now only an infrequent summer inhabitant of the state. The last western Kansas survey of nesting raptors located only five active nests, and this was up from previous reports. While golden eagles normally nest on rock ledges and outcrops, they will nest in trees where necessary, as shown by one persistent pair in southwestern Kansas. That pair chose the only tree, now lifeless, in a radius of several miles as their nesting platform.

The goal of our ongoing eagle project, funded in part by the Kansas Nongame Wildlife Improvement (or Chickadee Checkoff) Program, is to increase the nesting population of golden eagles in west-central Kansas by 1995. Now in its second year, the project goal is to produce three nesting pairs of golden eagles within a 25-mile radius of Wilson Reservoir. Inasmuch as it takes golden eagles four to five years to reach breeding age, the results of the program won't be known for several years.

Strangely enough, this project to increase nesting golden eagles in western Kansas had its origins in eastern Kansas. The Topeka Zoological Park has a pair of golden eagles that have been producing young eaglets in captivity for the past 20 years. On loan from the U.S. Department of the Interior, the male was obtained in 1964 and the female in 1966. Their first successful hatch (in 1971) produced the first-ever captive-bred golden eagle. This bird, a female, along with a male from the following year, make up a second breeding pair at the zoo. Since 1971 these two pairs have hatched 40 eaglets, and many have been placed at other zoos across the nation to start new breeding programs. Early in 1986, Craig Dinsmore, who has been general curator at the Topeka Zoo since 1979, was contacted by Maure Weigel about releasing a young golden eagle. Weigel heads the Prairie Raptor Project, a private organization near Tescott that rehabilitates raptors under permit from the Kansas Department of Wildlife and Parks. I learned of the zoo's eaglet offer when I delivered an injured raptor to Weigel. One thing led to

Golden eagle project workers take a blood sample before placing this eaglet in a cage overlooking the Saline River. At right, Dr. Steven Platt lowers himself down to capture an eaglet on a Wyoming cliff. This bird was then flown to Kansas for release in the Wilson Reservoir area.



Mike Blair photo

Project workers prepare to place five golden eaglets in a cage overlooking the Saline River.

another, and the three organizations agreed to a reintroduction program in Kansas. The Topeka Zoological Park would provide the eagles, the Prairie Raptor Project would supply the expertise and the Department of Wildlife and Parks would help with the funding.

This was not the first time the zoo was involved in a golden eagle reintroduction project. In 1982 and again in 1984, the zoo provided hatchlings for a Tennessee Valley Authority project in North Carolina. The Alpha pair at the zoo had been producing young annually since 1971, and the Beta pair (or second pair) started to produce chicks in 1985. Easily reaching the age of 30, these birds should be able to produce young for our project for several more years.

The release site for the current Kansas study was found in the Wilson Reservoir area. The bluffs and rocky outcrops located along the Saline River above Wilson Reservoir offer potential nesting sites, along with secluded canyons and draws that have suitable trees for nesting. Project workers built a hack tower along the bluffs and a 6-foot by 8-foot by 6-foot high cage was placed on the platform. Made of plywood and metal bars, this cage would become home for the three eaglets from 6 weeks of age until they fledged, or made their first solo flight. Fledging usually occurs at 11 weeks.

Researchers were determined to ensure that the caged young birds would not come into contact with humans. So they took precautions such as providing long tubes to act as food chutes and blocking the approach of the intern that fed and observed the birds daily. A small hut on an adjacent bluff served as the intern's observation post. If the young birds were to associate humans and food, they could become imprinted on people as their source of food. Imprinted birds, especially raptors, won't survive in the wild.

As in previous years, the eggs at the Topeka Zoo hatched during the last week in April. The Alpha pair produced one eaglet, while the Beta pair hatched their very first eaglet. Unfortunately both chicks died of unknown causes within the first 12 days. Our first year's efforts resulted in the release of a single eagle and a rehabilitated adult that had been shot.

Although we were convinced that the problem with the Topeka birds wouldn't happen again, we decided to check around for an alternate source of birds in case of another setback. Contacts with other reintroduction programs led us to Wyoming and we struck a gold mine — in the form of a coal mine. Enter Dr. Steven Platt, a biologist for a coal company east of Rock Springs, Wyo. Part of his responsibility is to monitor the effects of coal mining on area raptors. When Platt learned of our project, he was extremely interested and offered to assist in any way he could.

Originally we thought the golden eagles in Wyoming would nest sufficiently later than the Topeka birds and that we could hack out the Topeka eaglets and then place Wyoming birds in the cage. This would result in twice the number of birds we'd hope for each year. If we lost any of the Topeka birds, we'd always have the Wyoming eaglets to rely on for the reintroduction program. Surprisingly, eagles nest at the same time in Wyoming as they do in Kansas, and if we were going to increase the number of birds released, we'd have to expand our facilities. So we built a larger hack tower, measuring 12-feet by 12-feet by 6-feet high, adjacent to the existing tower. Able to accommodate six eaglets, this new cage allowed us to handle up to nine birds in one release. Peregrine falcon and bald eagle reintroductions in other states showed that releasing larger numbers of birds at one time did two things: increased the probability of the birds remaining in the release area and also increased the chances of birds returning to nest.

The U.S. Fish and Wildlife Service (USFWS) and the state of Wyoming granted us permits to remove eaglets and transport them to Kansas. With the help of several private citizens around Rock Springs, Platt monitored eagle nest activity by airplane. Our goal was to find birds that were approximately 8 weeks old, thus reducing the time they'd have to spend in the cage before being released. Although our permit allowed us to take up to six eaglets, we could only take one bird from a nest that had two eaglets so as not to

disrupt the nesting cycle of the mated pairs. If we found two double nests and one set of eaglets was close to our target age, we were authorized to take both of these birds while placing one of the younger birds back in the second nest.

With an estimated 15,000 nesting pairs of golden eagles in Wyoming, you would think it would have been easy to find six nests with two young. Not so. The last three years have been poor production years for rabbits in Wyoming, the major food source for young eaglets. Even though the birds switched to an alternate food source of Richardson's ground squirrels, less food meant a lower nesting success for the eagles. Compounding the problem of finding young eagles is the fact that they react to any intrusion by lying flat on the nest. With a mere 10 days before the mid-June trip to Wyoming to pick up the birds, we learned by phone that only one double nest had been located. Platt received word from the Falcon Recovery team that they'd found an eagle nest with two young in their study area northeast of Rock Springs. On his last flight before our scheduled departure, Platt not only verified the location of this nest but also discovered four more, three of which held two eaglets each. Knowing that five nests had been confirmed made our 800-mile trip all the more enjoyable.

Mike Blair photo

Once in Wyoming, we soon learned that an inch on a topo map was a whale of a long way on foot. Of the five nests, three required someone to rappel over a cliff to get the birds while the other two nests were "walk-ins." When the security of its nest is threatened, an 8-week-old eaglet has only one thought on his mind — jump! Fortunately only two of the birds bailed out, and Platt had enough experience with these birds to station one of us below each nest to complete the capture. In the three nests where the birds stayed calm, the remaining eaglet was banded.

In the meantime, the Topeka birds were producing as expected. The Alpha pair again produced two eaglets while the Beta pair reared their first young. This bird happens to be the first full second-generation captive-bred eaglet reared at the Topeka Zoo. Normally, captive-bred birds are mated with a wild bird for breeding programs, but both parents of this eaglet are captive-bred themselves.

With the help of Dr. Terry Campbell and his assistants at the Kansas State University School of Veterinary Medicine, we took blood samples from each bird before placing them in the cages. This gave us a base line of data for each bird. We also took measurements to distinguish the birds from each other. Five birds were placed in the large cage and three, segregated by size, in the small cage.

Mike Blair photo

Golden eagles at home in their manmade nest. The birds were leg-banded and released when they were 11 weeks old.

The birds were fed jackrabbits daily and monitored for two hours each morning and evening by an intern working for the Prairie Raptor Project. Everything went well for the first five days. Then one of the Wyoming birds began to dominate the smallest bird from Topeka. Within three days this domination became so severe that the young bird had to be removed. Weakened by the experience, this bird subsequently died. An autopsy revealed a minor case of pneumonia.

Things continued to go well for another week. Then one of the birds died without warning. Two days later another bird died. Autopsy results showed that each bird died from aspergillosis, a secondary respiratory disease caused by molds. We suspected that the food source was possibly contaminated before storage and immediately switched to fresh-killed birds, rats and rabbits. Overall we lost four eaglets, two each from Wyoming and Topeka. We subsequently learned that the bald eagle reintroduction project in Missouri last summer also experienced bird mortality due to aspergillosis.

Our four remaining eaglets were rapidly approaching their first day of flight. The birds exercised their wings more and more with each passing day. At about 11 weeks, the birds were taken from the cage and leg-banded with a special gold-anodized band. The birds were also fitted with a radio transmitter on the underside of their tailfeathers. This would allow the intern to monitor their movements. Blood samples were again taken to ensure the birds were fit to be released.

When the bars of the cage were lowered, the four eaglets sat on a perch inside the cage, all peering out at their new-found freedom. None wanted to be first to take the big step into the wild. After 30 minutes of uncertainty, one bird, closely followed by the rest, wandered out on the platform. Perched on branches secured to the platform, the birds tested their wings before soaring down to the trees along the Saline River. First flights are never a pretty sight, and one of the birds unceremoniously fell off the platform into the brush below.

It takes time for a young eagle to learn to hunt on its own, especially without the guidance of its parents. In order to ensure the birds' survival during this trial period, the hack tower becomes a feeding platform and is supplied daily with fresh food. During captivity the birds become accustomed to the tower as a source of food. This attraction is beneficial; the tower provides an alternate food source until the young eagles can hunt on their own.

Of the four birds released in mid-July 1987, one stayed through September, returning to the platform every three days or so. One bird shed its transmitter during its second week of freedom, and the signals from the other two were lost shortly after that. As with most other species, golden eagles have a tendency to return to nest near where they fledged. One immature golden sighted in the Cheyenne Bottoms area in mid-August could have been one of our birds. Their early departure from the release site doesn't mean they won't be back in five years to nest on the bluffs of the Saline River valley.

This golden eagle restoration project is a result of the efforts of the city, state and federal agencies, a university, a private organization and concerned individuals in two states, as well as funding from thousands of Kansans through Chickadee Checkoff donations. Through these efforts, the Kansas skies may again be filled with gold. KW

A Corps Of Engineers

Able to gnaw mammoth cottonwoods and build dams up to 1,000 feet long, beaver are second only to man in their building ability.

by Lloyd B. Fox
Furbearer Project Leader
Emporia

Mike Blair photo

Beaver, which mate for life, have a lifespan of 15-20 years. In just one of those years, this beaver will eat 1,500 to 2,000 pounds of food. An adult beaver normally weighs 40-60 pounds.

Little did they know of the impact of their harvest. Tonight there would be fresh meat for the table and soon the pelt of this animal would be converted into a useful product. That was what mattered to these people. What they did not know was that this would be the last beaver to be harvested in this country. No more would this unique creature live along the streams and lakes. It was the end of an era.

If you envision this episode as occurring in the Rocky Mountains back at the turn of the century, you would be wrong. Beaver still flourish there. But those events occurred on another continent in a distant century. In the story that follows, I will describe some of the history of man's association with beaver and point out a few aspects of beaver natural history that contributed to these events.

History repeats itself for those who fail to learn from the past. 1986 was an important year of celebration, the 200th anniversary of the signing of our Constitution. That momentous document is an outgrowth of the Magna Carta. Remember those days in school when you forced yourself to remember "June 15, 1215 at Runnymede"? So what does 1215 have to do with beaver management? It is simply a time scale. Sometime during the century before the signing of the Magna Carta, beaver were extirpated from the British Isles. Today you will find no beaver in the waterways of England. Since then, the niche of this fascinating animal has remained unoccupied. The point is that man could and did impact beaver populations long before modern society existed.

The history of man's exploitation of beaver in Kansas followed a pattern similar to other areas of North America. Indians who lacked the population, tools and incentives to adversely stress beaver populations, used the species for food and hides. French traders entered Kansas in 1719 and enticed Indians to catch beaver. As beaver populations in eastern North America declined, British and American traders and trappers moved westward. The resettlement of eastern Indian tribes to this area, and later the influx of settlers, increased the pressure on beaver. Use of manufactured

steel traps and castors as lure improved the tools for the harvest.

Part of the explanation for the decline in beaver numbers comes from an understanding of beaver behavior. Beaver live in a restricted habitat and have a clumped distribution within that habitat. They also leave telltale signs of their presence, which means that man can find and exploit them. Beaver are a creature of habit, continually using the same trails and reacting the same way to a stimulus. Once man learns these traits, he can efficiently harvest this species.

Market incentives for beaver exploitation diminished in the 1840s when fashion changed from beaver underfur felt to silk. The law of diminishing returns normally would have saved the beaver from overexploitation, but a way of life was not easy to abandon. People had the equipment, skill and tradition of harvesting beaver. As more people entered the state, the pressure on beaver became greater. Beaver were harvested in any manner and at any time of the year. Harvest exceeded the beaver's ability to repopulate and its numbers dwindled. Eventually society's lack of action to manage this species became unbearable.

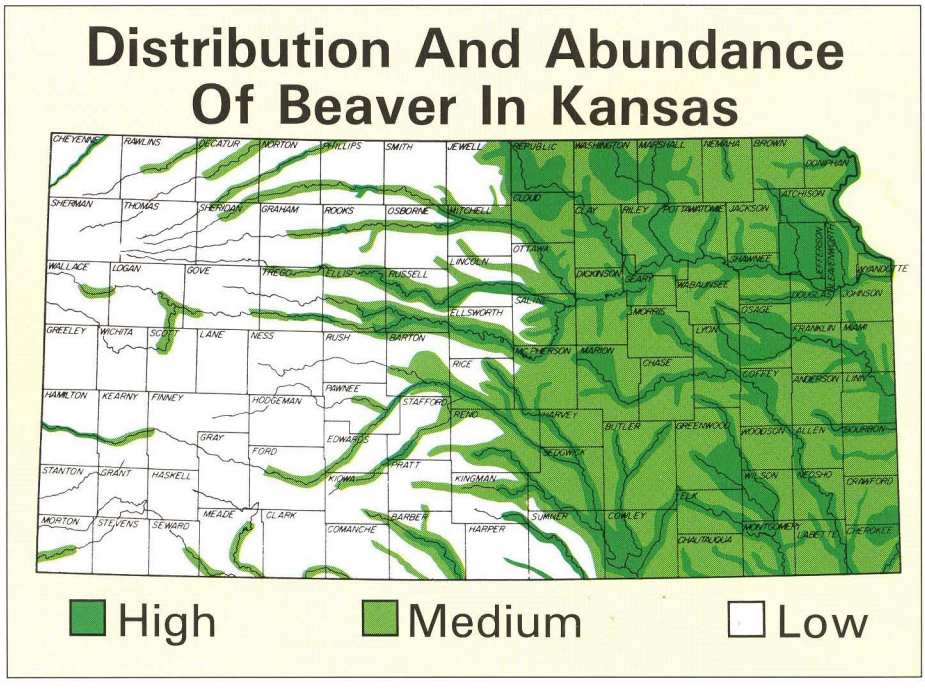
At the turn of the century, probably no more than 400 to 500 beaver remained in Kansas, mostly in isolated colonies in the northwest and north-central parts of the state. In 1911 the Kansas Legislature passed the first law to protect beaver. After that, we protected them with passion.

By the 1940s the ebb and flow of beaver numbers had turned the corner, but few people appreciated the consequences of what was occurring. When complaints from landowners began to accumulate, the old Kansas Forestry, Fish and Game Commission began to issue landowner permits, which allowed Kansans to trap and sell beaver. Beaver damage continued to increase so the state hired full-time trappers to trap and transplant beaver and to destroy problem animals. Eventually the number of complaints exceeded the state trappers' ability to respond.

A statewide trapping season for beaver was reopened in 1951 with a resulting harvest of about 3,000 beaver. The season was closed for two years and then reopened, resulting in a harvest of 6,000 beaver. Since that time, the fate of Kansas beaver populations has never been in doubt; the animal is secure from ex-

Lloyd B. Fox photo; Gene Brehm inset photo

These photos attest to the beaver's eating capacity. In the large photo, this single cottonwood is but one of more than 20 found along a 300-yard stretch of a Clark County creek. All the cottonwoods felled were the size of the one shown here. Beaver display their artistic dental work (inset).



Patti Murphy graphic

Among rodents, beaver are the most specialized swimmers. A beaver has webbing between the toes of its hind feet and can use its broad tail like a scull.

tinction. Now we face other problems such as: Where will all the beaver live? What will happen to them when the rivers run dry? Who will handle beaver-damage complaints, and what incentives will motivate these people to manage the species wisely? Answers to these questions, biologists believe, are attainable through long-term research.

Among rodents, beaver are the most specialized swimmers. They have complete webbing between the toes of the hind feet, and they have a broad, scaled tail, which can be used like a scull. Both traits aid in propelling a beaver at speeds of 5 miles per hour while swimming underwater. Beaver have nostrils that close, valvular ears, nictitating eye membranes and lips that close behind the incisors, all special adaptations that allow beaver to work efficiently underwater.

Life and death occasionally hinges on time and distance that a beaver can swim underwater. Other species have evolved mechanisms to allow their blood to hold more oxygen. Beaver survive with less oxygen for longer periods of time than most mammals. They can adjust their heart rate and circulation, particularly the flow of blood to body muscles. These adaptations of conserving oxygen allow beaver to swim underwater for up to 15 minutes. When coupled with their swimming adaptations, this translates into an ability to travel great distances underwater to search for food or safety.

Beaver are highly specialized in their food habits. Ask any budding naturalist what beaver eat and we're quick to answer the beaver eat trees! Look around any beaver colony. The evidence — felled trees and peeled branches — is obvious. The intricacies of beaver food habits are complex, however, and can even modify the environment. I remember a beaver colony in Canadian Shield country. Upslope for about 100 yards from the edge of the beaver pond was a profound abundance of red spruce and balsam fir but no aspen and few deciduous trees. Closer examination of the area revealed numerous aspen stumps. Through the years beaver simply eliminated their preferred food species, leaving the less palatable evergreens.

Why didn't the beaver continue to cut trees farther away from the water? The same adaptations that make beaver so effective for travel in the water make it hard for them to travel on land. Their behavior restricts their use of habitat to within a few yards from the water's edge. While this behavior reduces the danger of predation from species such as wolves, lions and bears, it concentrates beaver movements. This makes beaver more vulnerable to man.

Beaver are choosy feeders. Researcher Stephen Jenkins summed up his years of study on beaver food habitats when he called the beaver an "opportunistic herbivore." After observing and testing beaver behavior, he concluded beaver preferred herbaceous plants over woody vegetation. Given a choice, beaver will eat waterlily rhizomes before tackling any tree bark.

Beaver generally feed on leaves and herbs during the spring and summer and then switch to woody material during the fall and winter. Landowner complaints about beaver problems have a time and type predictability to them. September usually brings complaints about beaver building dams, flooding areas as well as plugging road culverts and water-structure devices. At that time beaver are expanding their water world. During October, when beaver are cutting and storing food for the winter, complaints center on tree damage. Trees are especially important food sources during winter because beaver can store them on the bottom of their pond near their den. Food is available then, even when the pond is frozen.

Food preference can change from year to year. One researcher noted that one colony of beaver fed predominately on birch trees one fall but the next fall had switched to oak trees. He also observed that the first year the oak trees had been heavy with acorns but that the second year there were few acorns. Nutrients in a tree are not uniformly distributed. During years when there is heavy production of mast, the nutrients in the bark is low. Apparently beaver can detect these changes and adjust their food habits to take advantage of the situation.

Beaver have a specialized digestive system and behavior to allow them to prosper on their diet. I wonder if part of the reason many Indian tribes respected and envied the beaver, might have developed as a result of the powers of the beaver's digestive system. Hunger was known and feared by the Indians, who knew they were near starvation when forced to eat roots and

bark. How they must have envied the beaver, which could eat these items and stay fat and healthy. No wonder Indians thought beaver possessed magic.

A discussion of the history of men and beaver in Kansas would be incomplete without mention of the conflicts over water. There are about 10,000 miles of stream and 100,000 ponds, lakes and reservoirs in the state. In eastern Kansas the most common conflict occurs when beaver build dams or plug water-level devices and flood areas that man wants to keep dry. People in western Kansas are less likely to complain about beaver ponds. The benefits of these areas for man are many. The problem in western Kansas during the last 20 years has been an overall lack of sufficient water to support beaver. Man's activties have reduced the flow of water, which has decreased beaver habitat. It is ironic that the stronghold for beaver at the turn of the century is now the area that faces the greatest threat.

Mike Blair photo

Birth of beaver kits occurs sometime between March and June. Typically the litter contains from two to four kits, but litters as large as nine young have been recorded. Litters larger than four will result in a waiting line at the nursery as the female has only four nipples located between her front legs. At birth the kits weight 12 ounces to a pound. Their next 60 days of life are spent nursing and making high-pitched whines, whimpers and whistles. Beaver vocalization is interesting as it occurs in the young. The adults, however, are generally silent except for hissing sounds when they are threatened and their characteristic tail slap used as a warning signal. Frequently you can hear the young inside a den during the first couple months after birth. About a month after birth, kits will eat solid foods, generally leaves.

Beaver are social animals. They live in extended family groups called colonies. The colony is a convenient unit of measure; generally beaver within a colony occupy the same pond or length of stream, use the same dens or lodges and share the same food. Beaver use secretions from their scent glands, called castors, to mark locations within their colony. These scent marks signal other beaver that an area is occupied. Generally there is a distance between colonies where no family units of beaver live. Typically a colony consists of an adult male and female, the kits or young-of-the-year and the yearlings or young of the previous year. Occasionally an older offspring will remain with the colony. An average colony contains about six individuals. Colony size increases in high-quality habitat and where exploitation and disease have not disturbed the norm.

Family life during the first summer is mundane for the kits but exciting for the older siblings. The 2-year-olds will disperse sometime between April and September. This activity may take them 150 miles from their parental home range.

The advent of more sophisticated tools has given us a better appreciation of the beaver social system. In 1983 Peter Busher and his associates at the University of Nevada-Reno published a study that examined beaver social systems in two locations. At their high-density study area, seven of eight colonies had two adult females that were nursing young. Prior to their study, there had been only one other known colony that had more than one lactating female. They found more breakdown in the normal social system when they examined the movements of beaver. All adult males and two of seven adult females in the high-density area were found to be sharing more than one colony. Some of our sacred-cow beliefs about monogamy, territoriality and population regulatory mechanisms in beaver populations will need to be re-examined in light of these findings.

Beaver management has progressed a long way since the 12th century in England or even the 19th century in North America. We are no longer satisfied to manage the resource with extinction of the species as our only concern. Today we are concerned about maintaining populations within limits that are tolerated by landowners and at levels where the species fills its ecological niche. Esthetic, ecological as well as traditional consumptive values must be considered. As new information is developed, refinements in our management will be possible.

Wildlife management is influenced by historical and social perspectives as well as biological facts. Stability comes from knowledge of the past. However, as an ancient warrior once noted, "You never step in the same river twice." So, too, it is with wildlife management, where we are dealing with factors and force through time and space. We must continue to explore and monitor our river less the safe ford established years ago become the dangerous eddy of tomorrow. KW

Beaver Traits & Trivia

Scientific name
Castor canadensis missouriensis

Size (largest rodent in North America)

Total length	45-50 inches
Tail length	9-13 inches
Tail width	4-7 inches
Hind foot length	6-7 inches
Ear length	approx. 1 inch
Weight	40-60 pounds
Food consumption	1,500 to 2,000 pounds per beaver per year

Reproduction (lowest potential of any rodent in North America

Mating system	monogamous (mate for life)
Reach sexual maturity	2-4 years old
Breeding occurs	March
Gestation	approx. 105 days
Litter size	2-4 young
Litters per year	1
Time of birth	March-May
Birth weight	12-17 oz.
Nursing	suckle for up to 60 days approx. 10 times a day for 5-10 minutes

Mortality (long-lived, few predators and diseases)

Life span	15-20 years
Predators throughout the beaver's range	wolves, bears, wolverines, river otter, lynx and lions
Predators (Kansas)	coyote, bobcat and man

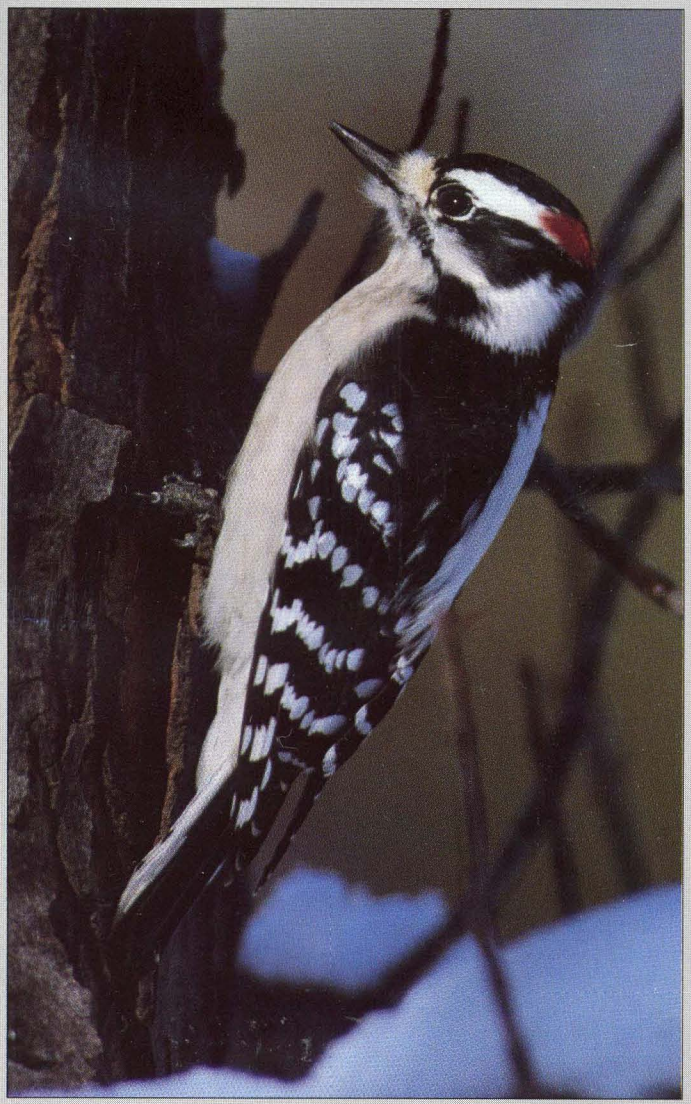
Engineering Feats (second only to man)

Lodges	6-8 feet high and 20-40 foot in diameter
Bank dens	30-150 foot long
Canals	3 feet wide, up to 6 feet deep and hundreds of feet long
Dams	4 feet high and 75 feet long; some dams more than 1,000 feet long and 18 feet high at highest point; 100-200 tons of material
Ponds	25-30 acres
Logging	200 trees per beaver per year
Food cache	100 cubic feet of branches and twigs

KANSAS WILDLIFE Gallery

photos by Mike Blair

Male goldfinches (left) trade their bright yellow plumage for more subdued winter coloration. These birds readily visit winter feeders and prefer thistle seeds and smaller sunflower seeds to larger grains. Shot with 400mm lens and extension tubes, f/6.7, 1/125. The downy woodpecker (right) is a common permanent resident of Kansas woodlots and orchards. Often described as friendly and industrious, this bird frequently visits backyard feeders on cold and snowy days. Shot with 400mm lens and extension tubes, f/9.5, 1/125.



The common flicker (yellow-shafted variety shown above left) uses its long bill and sticky tongue to extract wood-boring larvae from trees. Other winter foods include blueberries and grain. The flicker is intensely curious, one of the first birds to investigate a disturbance in the woods. Shot with 400mm lens and extension tubes, f/9.5, 1/125. Harris' sparrows (right) winter in Kansas and also are common visitors to backyard feeders. Their clear whistles in springtime signal that migration is near. Shot with 600mm, f/11, 1/125.

The soft notes of the white-breasted nuthatch (left) are a common sound on winter days. Nuthatches, like woodpeckers, are often seen foraging for insects on tree trunks. Nuthatches are permanent residents in Kansas. Shot with 400mm, f/6.7, 1/250. Male cardinals (right) provide welcome accents of color against the drab winter landscape. Shot with 400mm, f/11, 1/125.

Fine Time For Pheasants

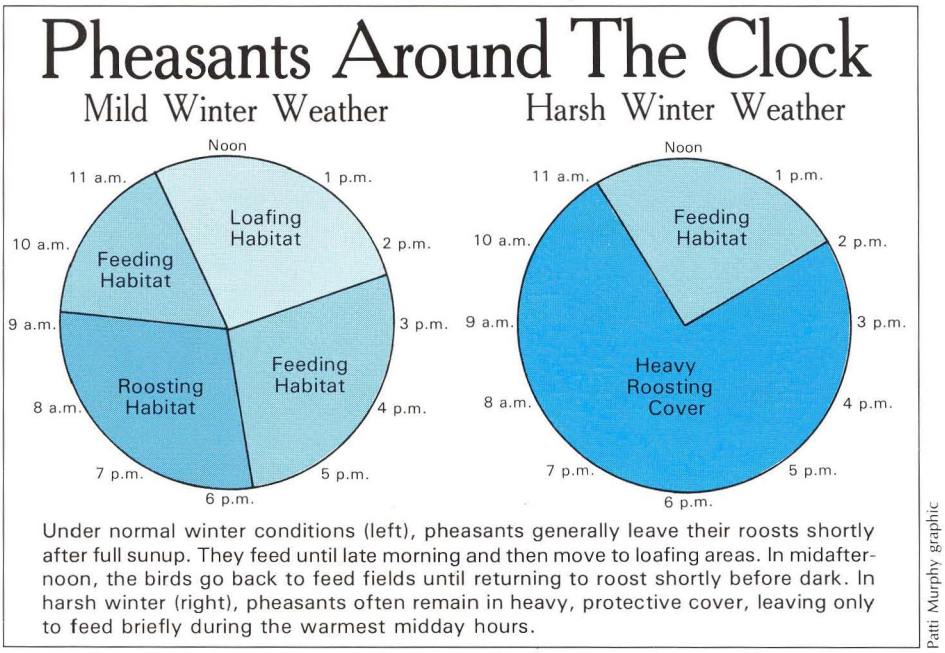
January is the coldest month of the Kansas pheasant season, but it can also be the best if you know a rooster's time schedule.

by Rob Manes
Education Coordinator
Pratt

January may be my favorite month of pheasant season. Most often hunting with my Brittany and maybe one other buddy, I find that the scenery, solitude and success of mid-winter hunts keeps me at it year after year. Few tricks for finding late-season pheasants are guarded secrets, so I'll try not to waste your time telling you what you probably already know. Instead, I'll offer some facts about why pheasants behave the way they do in winter. Some of this information may help you increase your pheasant hunting success. Let me start with an inspirational yarn, which I hope will sound familiar . . .

A snow-quilted switchgrass cluster, barely 3 feet across, focuses the bird dog's attention. "No way there's a pheasant in that," I mumble. But the dog's rock-solid point is convincing. Only two steps from the bird's alleged hiding place, my boot crunches through the crusted snow. Then, as in slow motion, the switchgrass stirs, the dog lunges forward, and a bold cock explodes into the frozen January air. Powdered snow billows from the pheasant's wings and glitters like countless diamonds in the brilliant winter sun. Through the sparkle, I can almost count the bird's gaudy feathers — light blue, purple, golden, deep brown, iridescent green — all finely detailed in black and white. Its long,

Mike Blair photo



Under normal winter conditions (left), pheasants generally leave their roosts shortly after full sunup. They feed until late morning and then move to loafing areas. In midafternoon, the birds go back to feed fields until returning to roost shortly before dark. In harsh winter (right), pheasants often remain in heavy, protective cover, leaving only to feed briefly during the warmest midday hours.

Patti Murphy graphic

pointed tail is bent slightly upward as its beating wings carry the bird almost beyond shotgun range.

Awkwardly I shoulder my pump gun, fire twice and miss. I'm barely aware of two more cocks clamoring from the cover at my feet. Then all around me, hens and cocks escape from every nearby switchgrass clump. One of the roosters gives me an easy straightaway shot, which I make. The dog finishes his retrieve, and I realize that I'm grinning ear-to-ear.

One reason I often hunt alone on late-season outings is because being quiet lets me get within shooting range of more pheasants. The ones that survive the first half of the season are generally more wary than young November birds. So it helps to keep the noise down.

I consider a controllable, close-working dog essential for this type of hunt. You're at a big disadvantage without one, but it sure doesn't help if your dog spooks the alert birds before you're within shotgun range. And you're not much better off if you have to holler constantly to keep the dog close. Both hunter and dog should work slowly, checking every piece of likely cover. Working into the wind is important, too, because it helps dogs scent birds and carries noise away from the pheasants.

In winter, pheasants are concerned with four basic habitat types: feeding areas, roosting areas, shelter and loafing areas. Depending on the time of day (and severity of weather) you hunt, you'll likely concentrate on one or two of these areas. A brief look at why and when pheasants use each habitat, and which vegetation provide the best of each habitat, may help you find more birds. Let's focus on typical January hunting conditions — short days, freezing temperatures and some snow.

A favorite winter pheasant cover is switchgrass, preferred because it retains its leaves in winter and its stems don't break and lie flat under the snow's weight. The result is that snow-covered switchgrass forms a canopy — a sort of pheasant tent — above the ground. Other native grasses also provide important habitat but tend to break and lie flat under heavy snow, leaving few pheasant hiding places.

Two other hard-weather favorites are Kochia weed and Russian thistle. Kochia is a large, branching plant that stands up well under the snow. Russian thistle is the common tumbleweed, which also provides top-notch winter cover. Dense stands of either plant are likely spots for winter pheasants. Russian thistles are especially good cover when they're piled in dense mats against fences or other obstacles.

Another plant that provides winter pheasant cover is the cattail. In marshy draws and low areas, cattails may offer the best winter cover available. Their strong stalks arch over and form ideal pheasant shelters under the snow. The main requirements for harsh-weather pheasant cover is that it blocks the wind and keeps most of the snow off the birds. While other types of plants will meet these standards, switchgrass, Kochia weed and Russian thistle are common pheasant favorites.

In blizzard conditions, pheasants may even roost in these three vegetative covers. But in mild winter weather, they generally use slightly different roosting sites. Pheasants prefer roost habitat that provides some protection from the wind and predators, but they want enough clearing overhead to allow quick vertical takeoff.

Native grasses offer excellent midwinter roosting cover, but so does untilled wheat stubble, often found in fallow fields. More dense than milo stubble, wheat stems block the wind and snow better without impeding easy upward escape from predators. Other roosting covers may include cane feed patches.

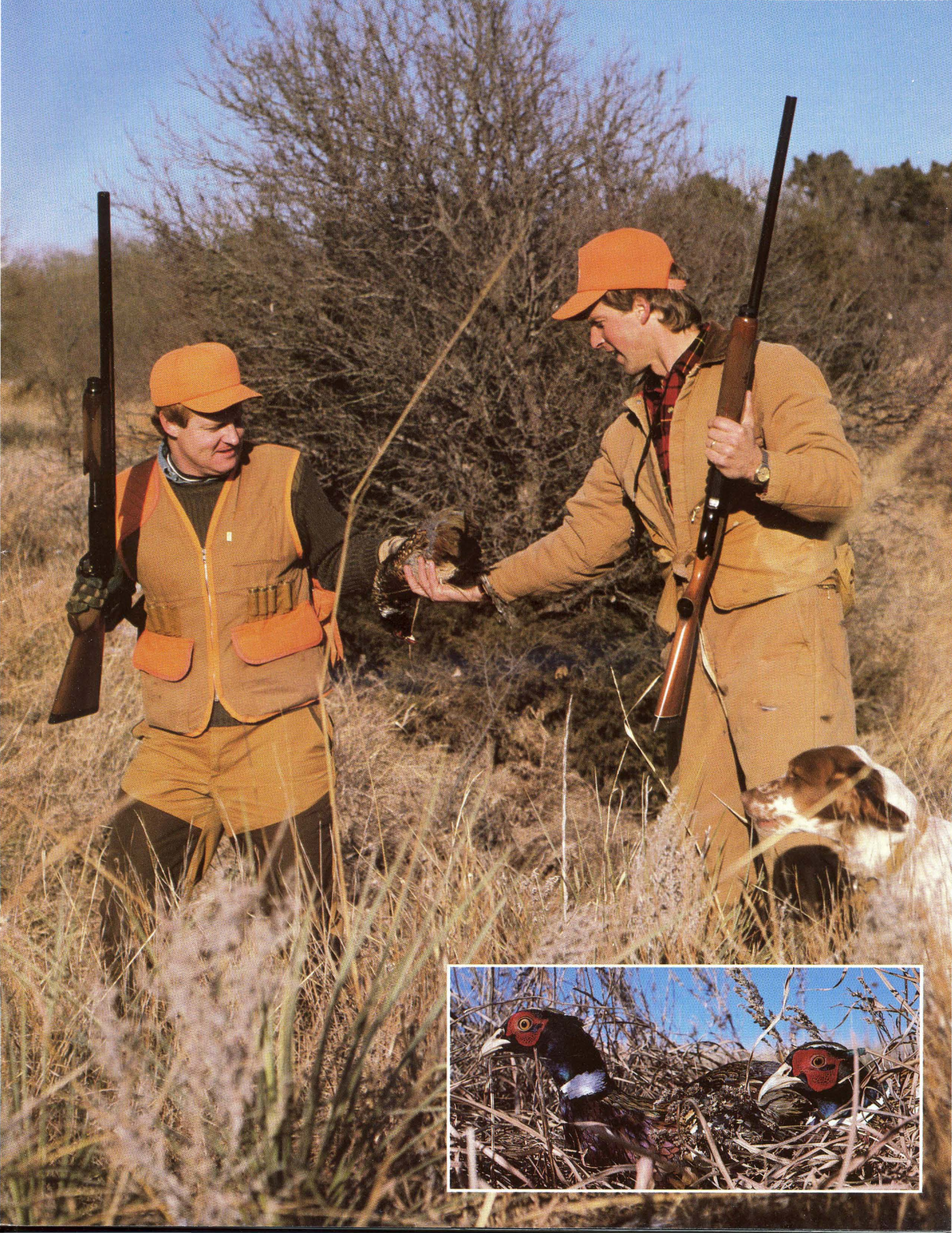
It's surely no great revelation when I say that milo stubble is a favorite pheasant feeding area. But presented with options, the birds may not head for this old standby forage. During harsh winter weather, pheasants need food that will give them the most energy for the least effort. While milo is certainly high in energy, it is equalled by a few other pheasant foods, including corn, wild sunflowers and soybeans. If these foods are readily available, pheasants will use them for winter sustenance. Pheasants also eat wheat, although this grain offers less energy than the other four.

A pheasant hangout sometimes overlooked by hunters is loafing habitat. These areas are typically stands of sandhill plum, smooth sumac or stunted willows. Sparse stands of giant ragweed and other tall annual weeds may also provide loafing areas. For loafing, pheasants seek cover that allows plenty of sunlight in and still provides protection from hawks. Openings in cedar tree stands also may be used for loafing.

The best pheasant hunting areas, of course, are those with the best habitat. This is so because good habitat supports more dense populations, but also because it concentrates the birds, especially during severe winter weather.

Prime winter pheasant areas are those that offer all four habitat components nearby. For example, a plum thicket (loafing area) in the middle of a tall stand of switchgrass (shelter), with

Ring-necked pheasants (inset at right) are fairly predictable during January. Be in the right area, put a good bird dog to work and scenes such as this are common.



a corn or milo field (feed) on one side and a fallow wheat field (roost) on the other should be ideal habitat. A small stand of cedars makes such an area even better.

Wildlife biologists call this arrangement of habitat components "edge effect," and developing edge areas is a critical part of pheasant management. The best winter pheasant habitat provides all the necessary feed and cover within about a quarter-mile radius. In tougher weather, it becomes more important that pheasants can get both food and cover without traveling far. You, of course, will find your best hunting success in these same areas.

Pheasant enthusiasts often find themselves hunting in only one type of habitat — feed fields. But pheasants don't spend all day eating, so feed field hunting is sometimes futile. It's important to hunt the right habitat during each part of the day. If you're an early riser who likes to hit the fields in the first moments of legal shooting hours, start with roosting areas — wheat stubble, cane fields or native grasses.

The bottom line of all this is: Know where the pheasants go, know when the pheasants go, and go where the pheasants are.

Winter weather makes following this all-too-simple rule easier. The birds become more predictable and hunters who understand pheasant habitat needs can take advantage of the situation.

Work slowly, giving the birds time to flush. It's especially important to give a dog plenty of time to work heavy cover when there's snow on the ground.

If the early morning roost sites prove unproductive, head for the feed fields. Follow any fresh tracks you find, and if you use a dog (you really should), trust it. Pheasants can become invisible in the sparsest stubble, but they don't often escape a good dog's nose.

Mike Blair photo

When the temperature and snow both fall, you'll find me and my dog in search of pheasants.

During the shortest winter days, when the air is cold and the snow is deep, pheasants may feed only at midday, abandoning their standard of midmorning and afternoon feeding. Under these conditions, they leave heavy cover only when the sun is highest and the air is warmest. This change in activity allows the birds to save energy.

Under normal winter conditions, pheasants move to loafing areas between feeding periods, usually late morning and early afternoon. So look for birds in plum and sumac thickets and other open shrubs near their feed areas. When pheasants are in this type of cover, it's especially important to approach them quietly. A sneak attack may afford you a shot when the birds might otherwise spot you coming and flush far out of range.

Midafternoon usually takes pheasants back to the feed fields, and the savvy hunter follows. If the weather isn't too severe, the birds will feed until just before sunset, when they begin to move back to their roosts. In the last minutes of shooting hours, you, too, should hunt roosting sites. This often provides success at the day's end.

The bottom line of all this is: Know *where* the pheasants go, know *when* the pheasants go, and *go* where the pheasants are. Winter weather makes following this all-too-simple rule easier. The birds become more predictable, and hunters who understand pheasant habitat needs can take advantage of the situation.

When the temperature and snow both fall, you'll find me and a good dog in search of pheasant country — places with feed, cover, roosts and loafing places. I'll be plodding slowly through a milo field or creeping up on a tallgrass waterway. I'll be watching and waiting for the first sight or sound of roosters. And, most likely, I'll be wearing a smile . . . KW

HIGH GROUND

by David E. Seibel

Birdman

I can't really say how it all began, but my earliest memory of birds is also one of my earliest memories, period. I was about 4 years old when my older brother and I retrieved a male cardinal, unharmed but for a broken wing, from the jaws of a neighborhood cat. Perhaps, had the cardinal died, I'd have forgotten the incident and lost interest in birds. But it didn't, and I didn't.

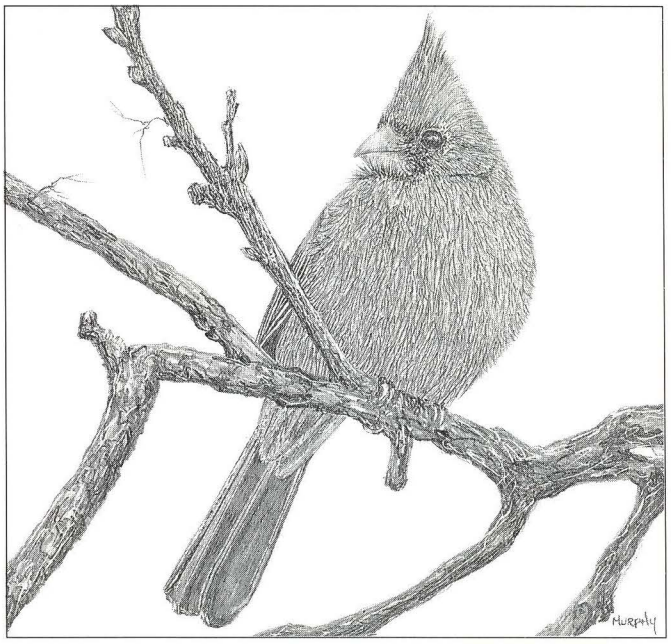
I am now completing my doctorate in ornithology (bird study) at the University of Kansas. Although I am admittedly an extreme example, I believe that much of the challenge, thrill, satisfaction, enlightenment, joy and deep-rooted concern that I've felt in interacting with birds is shared by all birders. Accordingly, birding is the nation's second most popular "passive sport," although calling birding passive or a sport is only partly accurate. Strictly speaking, birding — the competitive end of birdwatching — really *is* a sport, but far from passive. Many birders travel extensively and hone their field identification skills to the point of recognizing hundreds of species from the slightest glimpse or faintest "chip" of a call note.

My own most rewarding experiences have involved interactions with birds extending beyond merely recognizing and listing species. The short-term benefit of such interactions is often one-sided (the bird being either tricked, trapped or tolerant while the human enjoys the occasion), but in sufficient doses the awe and appreciation generated in the humans lead to long-term benefits for both.

Birdfeeders, birdhouses and natural landscaping provide wonderful opportunities for interactions between humans and birds. And the variety of birds in Kansas, even in towns, can be startling. As a child I saw more than a hundred species within a block of my Arkansas City home. The list includes nesting species from house sparrows to Mississippi kites and migrants from bald eagles to at least a dozen warbler species, including a Canada and a Cape May.

Since then, some of my most memorable interactions with birds have involved Eastern screech owls. I'll never forget the night I heard my first screech owl's eerie, descending tremolo settling over my parents' backyard and sounding amazingly like a flying saucer landing in our driveway. Several years later I watched a family of young screech owls bathing in a neighbor's birdbath at dusk. One at a time, each owl hopped into the shallow water and bathed vigorously while several others waited around the edge.

While bird banding a few years later, I caught a screech owl in a mist net one morning just before dawn. I managed to extract the owl gingerly without getting bitten or impaled by its needle-sharp claws and carried the bird back to my car. There I found that I'd locked my banding equipment inside. My keys were in my pocket, but trying to hold a wild, unwilling screech owl in one hand while fishing for keys with the other allowed the owl to equalize our interaction more than I would have preferred. The bird reached upward with its newly freed talons and sank them deep into the web of my thumb. I clenched my teeth, unlocked the car and



Patti Murphy illustration

prepared to band the bird anyway, only to discover that I had no bands large enough for a screech owl. I had to release the bird — or convince it to release me — unbanded.

I have since learned to imitate a screech owl's whistle convincingly enough to fool both owls and smaller birds. By imitating other bird sounds, especially "generic" scoldings, I have lured kinglets, gnatcatchers, chickadees and several species of vireos and warblers into practically landing on my nose. Once, when I "squeaked" at a Carolina chickadee, its scolding response agitated half a dozen other birds, which in turn excited a wave throughout the woods. Within minutes, dozens more had descended on the spot.

Birdwatching can be as intensive or as leisurely as one desires. Group activities such as Audubon Society Christmas Bird Counts and local field trips nurture beginners' interests and often establish lifelong friendships. Several organizations in Kansas promote birdwatching and bird study, including local Audubon chapters. The state organization specifically devoted to birds is the Kansas Ornithological Society, a great club for anyone interested in birds.

Birdwatching gives me the exuberance of my childhood, the wonder of discovery, the comfort of seeing beyond the jumble of humanity. Birds provide my favorite escape — not from reality, but to it. KW

The Lawrence-based author, an avid birder for more than 20 years, is vice-president of the Kansas Ornithological Society. For more information on this and other state wildlife and conservation groups, see Page 25.