KANSAS Wildlife & Parks

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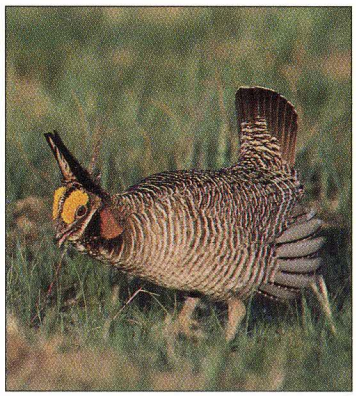

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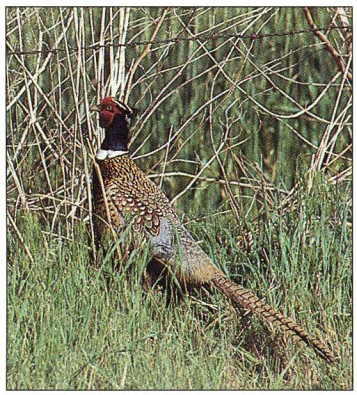

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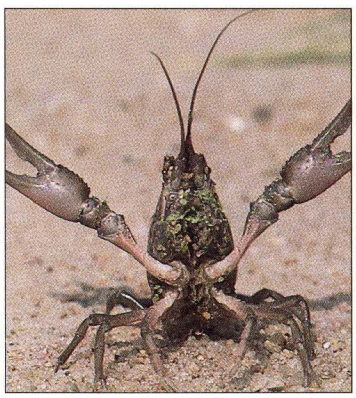

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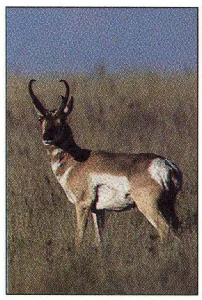


About The Covers

Front: Alerted to a nearby buck, a pronghorn stands watch on a September morning. Mike Blair photographed the pronghorn near Ashland. Mike used a 600mm lens. Aperture was f/8, shutter speed 1/250. See related story on Page 2.

Back: Once native to Kansas, elk are found in several parts of the state, including Morton County. Mike Blair used a 600mm lens. Aperture was f/5.6, shutter speed was 1/125. See related story on Page 8.

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

Equal opportunity to participate in and benefit from programs described herein is available to all individuals without regard to race, color, national origin, sex, age, or handicap. Complaints of discrimination should be sent to Office of the Secretary, Kansas Department of Wildlife and Parks, 900 Jackson Street, Suite 502, Topeka, KS 66612.

THE BUCK STOPS HERE

The Masthead

Each issue, on the table of contents page, we run a vertical box called the masthead. Featured in our masthead is the governor's name, Department commissioners, secretaries, division chiefs and magazine staffers. Mastheads probably get read about as often as last week's newspaper, but I'd like to say a few words here about several of the names in our masthead.

Although many Wildlife and Parks employees regularly contribute to KANSAS WILDLIFE & PARKS magazine, six staffers have their hand on, so to speak, each issue.

Let's start with Kathy Gosser, because as you read this Kathy's no longer the circulation clerk. She was, however, since 1985, but in early August she, husband Major and 2-year-old son Curtis left Pratt for their new home in Pittsburg, Kan. Kathy also handled new subscriptions, renewals and address changes. Best wishes in Pittsburg, Kathy.

Bev Aldrich is the division secretary and in addition to the dozens of job duties she carries out (her job description reads like an ad for Superwoman), she enters the feature stories into our computer system.

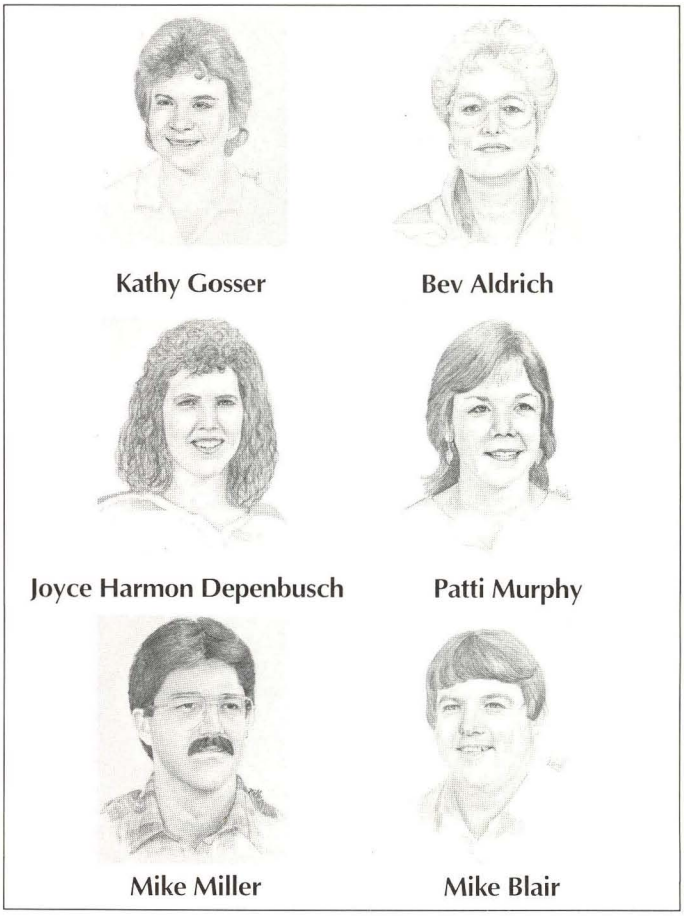
Joyce Harmon Depenbusch writes the Nature's Notebook pages for each issue. Joyce's instructional format is welcomed by teachers wanting to instill in their students an appreciation of the outdoors.

Patti Murphy has been the Department's illustrator for the last two years. Patti's illustrations, maps, graphs and charts appear in each issue, but she also serves as the Department's one-woman art department. So when a biologist, say, calls about needing a brochure, Mike Miller works up the copy and maps, then routes the material to Murph, who typesets the copy and arranges it into a layout.

Mike Miller is the associate editor. In addition to writing and editing the Center Section, Mike also is in charge of special publications and compiling the hunting and fishing regulations, to name a few of his duties. The illustrator before Patti came on board, Mike still enjoys creating neat things on paper, such as the lifelike pencil sketches shown above. And when we changed from KANSAS WILDLIFE to KANSAS WILDLIFE & PARKS, Mike steered Vance Story's efforts at Sun Graphics to produce our logo.

Photographer Mike Blair has been humping it over the state of Kansas since he came on board two years ago. Mike's quest for photographic excellence is evident in every issue; his work is frequently mentioned on the Letters pages. Recently Mike, who's taken top honors in several national photo contests, took second place in a competition of his peers at the other state's conservation agencies.

Special mention goes to staff writers Rob Manes (whose work has appeared in every issue for the last five years), Mary Kay Spanbauer, Bob Mathews and Martha Daniels.



Illustrations by Mike Miller

All four staff writers regularly contribute to these pages. Or contributed, in Martha's case. Martha resigned her position in early August to begin working for the Missouri Department of Conservation. All the best, Martha.

Also part of our staff are Jim Crouse and his crew at the State Division of Printing in Topeka. Rex Abrahams, Lloyd Wolgast and the good gentlemen at Edwards Typographic in Wichita provide our magazine separations, and Eugene Rexwinkle's force at Sun Graphics in Parsons prints this magazine six times a year. It's a group of folks I'm proud to work with. And I wanted you to know about them.

Paul

Paul G. Koenig
Editor

Pronghorns
On The Prairie

Our antelope project leader provides a brief history and some interesting facts about this swift-footed prairie species.

by Terry L. Funk
Antelope Project Leader
Hays

The absence of pronghorns in Kansas became evident to the old Kansas Forestry, Fish and Game Commission the late 1950s. By the early 1960s, the decision was made to do something about this declining natural resource. In 1962 the Commission hired a biologist to head Kansas' pronghorn project. The project was approached from three directions: (1) Determine the pronghorn's historic range; (2) Inventory the pronghorn population and remaining suitable range sites; and (3) Attempt to re-establish pronghorn herds on these suitable range sites.

History

Research into the historic range, distribution and population of Kansas pronghorns proved to be both interesting and rewarding to the pronghorn project leader. As our forefathers crossed Kansas during their western movements, they made entries in their daily journals about everything they saw. The references to pronghorns are frequent and well documented. These historic records provide us with not only distribution information but also some idea of what the overall population must have been like. These early travelers recorded pronghorn sightings as far east as the Emporia area and most points west.

Historic References

As Pike passed through present-day Anderson, Chase and Lyon counties in 1806, he noted that antelope were common. J.R. Meade, an early Kansas trapper, reported that in 1859, "Antelope were abundant everywhere, in the summer, migrating south in the winter to the Staked Planes."

Know (1875) reported antelope were "in great numbers on the western plains, in herds of ten or twenty."

* * *

In mid-April of 1867, Lt. Col. George A. Custer led eight companies of the 7th U.S. Cavalary in pursuit of several hundred Indians fleeing northward from their campsites at Pawnee Fort. The following incident probably occurred in present-day Ness County.

Here I will refer to an incident entirely personal, which came very near costing me my life. When leaving our camp that morning I felt satisfied that the Indians, having traveled at least a portion of the night, were then many miles in advance of us, and there was neither danger nor probability of encountering any of them near our column. We were then in magnificent game country, buffalo, antelope, and smaller game being in abundance on all sides of us ... from ***My Life On the Plains,*** by George Armstrong Custer

* * *

Fort Hays Military Reservation records indicate that pronghorn populations were declining by 1877. Lantz (1905) noted that antelope were "Fast disappearing. A recent law protects these animals, but the law is ignored by many of the settlers in western Kansas. A few small herds have been reported to me within the last year as occurring in the extreme western counties of the state."

Having established historic population distribution and density maps, the project leader's next job was a complete inventory of existing antelope popula-

Mike Blair photo

A barbed wire fence is no obstacle for this leaping pronghorn buck as it clears the hurdle in western Kansas. This photo is rare; pronghorns usually cross fences by ducking their heads and slipping under the wire.

Gene Brehm photo

The north-to-south boundary line in the map below denotes the easternmost historic range of pronghorns in Kansas. The Flint Hills has a potential of .5 pronghorns per section.

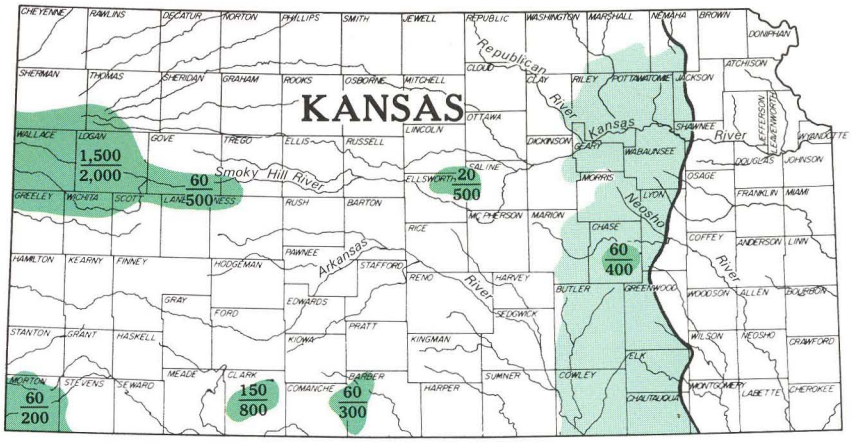
tions. Through follow-ups on public reports, landowner interviews and actual accounts, the leader determined that the Kansas pronghorn population consisted of 37 animals in Wallace and Sherman counties. These animals were nomadic and spent as much time in Colorado as they did in Kansas.

Further study showed that several areas in the state would provide suitable habitat for additional pronghorn releases. These areas were then ranked on the quality of habitat, man-made barriers to movement and public acceptance of the pronghorn. When the priority list was completed, public meetings were held to inform the public of our plans to release pronghorns in their area. Landowners received personal invitations, and the general public was informed through the media. If the re-introduction received favorable comments at the meeting, the site was put on a waiting list for pronghorns.

Through contacts with other states

Please turn to Page 6.

Antelope Distribution And Population Status



Patti Murphy map

Antelope Viewing & Photographing

Kansas antelope provide a photographer with endless opportunities to burn up film. Armed with a few good tips, you could return from a weekend trip with a new (or renewed) interest in wildlife photography.

My favorite areas to observe and photograph antelope would be Wallace and Clark counties. I've found the best concentrations in Wallace County north of Sharon Springs and 15 miles either side of Highway 27, and south of the North Fork of the Smoky River. The area 10 miles west of Ashland, on the north side of Highway 160 in Clark County, holds a herd of antelope that can be seen on most trips.

Remember that you must have permission to trespass on private property. Cooperating landowners can also point out the best places to view pronghorns.

Binoculars and a spotting scope will be a big help locating herds on the open plains. Once you spot a herd of pronghorns, you'll need to get within camera range. A small white flag held aloft on a stock will spark a pronghorn and should lure it into range. When all else fails, the old standby — stalking — will provide you with many hours of recreation.

September and October are good months to watch and photograph trophy-sized bucks in rut. January and February find pronghorns in larger herds and easier to find. Young pronghorns (fawns) may be observed from mid-May through July. — *Funk*

Gene Brehm photos

A pronghorn buck and doe are photographed in close quarters during the breeding season. Fawns (inset) weigh 5-7 pounds at birth.

Pronghorns Naturally

Pronghorns (*Antilocapra americana*), often called antelope, are the last remaining survivors of a family with fossil records that date back millions of years. The species is found only on the North American continent from Canada to Mexico. Unlike the African antelope, pronghorns shed the horn sheath annually; these horn sheaths are composed of fused hair. Evolution has left pronghorns without the dew claws found on our deer family.

Five sub-subspecies are recognized today: the Oregon, Mexican, Peninsular, Sonoran and the American, which is the most abundant and found in Kansas.

The head and body length of adult pronghorns range from 40 to 60 inches. The tails are 3-4 inches in length. At the shoulders, adult pronghorn bucks stand 35-40 inches tall. The horns of a Kansas buck will reach the 15-inch class; doe horns will seldom exceed 5 inches or have a prong. Coloration of the upper body ranges from brown to tan. Both sexes have black mane on their neck and white bands on the rump, underparts and under the neck. Unlike bucks, females lack the black cheek patch on both sides of the neck. The eyes of the pronghorn are roughly 2 inches in diameter and protrude from the skull such that the pronghorn can see nearly as well backward as forward. The body weight of adult pronghorn bucks range between 100 and 140 pounds; does are 20-30 pounds lighter.

Pronghorn hair is unique; each hair is actually a tiny air cell. These tiny air cells allow the pronghorn to regulate body temperature with ease. The white patch of hair on the rump also acts as a visual warning system. When alarmed, the pronghorn stands the rump patch hair up, effectively doubling the white and thus warning others of impending danger.

Pronghorns breed in September and October and have a gestation period of 250 days. A doe will generally have only one fawn the first birth and twins thereafter. Fawns weigh 5-7 pounds at birth and remain inactive their first few days but are able to outrun a man by the fifth day. Does breed at 15-16 months of age and may live for 10-15 years. Often called the swiftest North American animal, pronghorns can reach speeds of 40 mph for short distances and sustain speeds of 30 mph for greater distances. — *Funk*

Ron Spomer photo

Biologists herd antelope in a Colorado-Kansas trap-and-transplant operation.

Antelope Hunting In Kansas

A long-term objective of the antelope reintroduction project was to provide pronghorns for sport hunting. Kansas has had a pronghorn season since 1974. This table traces the historic and modern pronghorn harvest. — *Funk*

ARCHERY and FIREARMS, PRONGHORN HARVEST SUMMARY

Year								
1861-1902	Pronghorn were not protected. No harvest data available.							
1903-1920	No open pronghorn season.							
1921-1924	Pronghorn were not protected. No harvest data available.							
1925-1973	No open pronghorn season.							
			FIREARMS					
Year	*Dates Open*	*Days*	*Applications Received*	*Permits Available*	*Active Hunters*	*Man Days*	*Harvest*	*Percent Success*
1974	Sept. 28-30	3	492	80	72	82	70	97.2
1975	Sept. 27-29	3	288	80	78	88	76	97.4
1976	Oct. 1-3	3	524	80	77	91	72	95.5
1977	Oct. 8-10	3	501	100	96	106	91	94.8
1978	Oct. 7-9	3	596	100	97	111	90	92.8
1979	Oct. 6-8	3	688	100	94	100	91	96.8
1980	Oct. 4-6	3	749	160	148	170	142	95.9
1981	Oct. 3-5	3	853	190	180	314	169	93.9
1982	Oct. 2-4	3	838	190	181	454	171	94.5
1983	Oct. 1-3	3	984	390	362	430	321	88.7
1984	Sept. 29-Oct. 1	3	960	420	390	508	337	86.4
1985	Oct. 12-14	3	874	270	250	337	208	83.2
1986	Oct. 11-13	3	813	248	223	328	192	86.1
1987	Oct. 10-12	3	999	266	254	362	216	85.0
			ARCHERY					
1976	Sept. 25-29	5	54	50	42	131	7	16.7
1977	Oct. 1-5	5	59	60	52	182	4	7.7
1978	Sept. 30-Oct. 4	5	87	60	50	148	4	8.0
1979	Sept. 29-Oct. 3	5	86	80	73	211	2	2.7
1980	Sept. 27-Oct. 1	5	60	80	51	163	10	19.6
1981	Sept. 26-30	5	95	100	86	270	12	13.9
1982	Sept. 25-29	5	74	100	69	233	11	15.9
1983	Sept. 17-25	9	142	150	127	487	18	14.2
1984	Sept. 8-23	16	144	150	116	574	12	10.2
1985	Sept. 28-Oct. 6	9	99	150	84	274	6	7.1
1986	Sept. 27-Oct. 5	9	75	150	57	207	4	7.0
1987	Sept. 26-Oct. 4	9	62	150	51	191	8	15.7

having pronghorn populations, it was determined that surplus animals would be made available for our restoration program.

Trap and Transplant

With all the groundwork completed, the monumental task of attempting to rebuild the state's pronghorn population was under way. By mid-1963, agreements had been reached with the state of Montana to live trap and transport pronghorns to Kansas. In November 1964, 84 animals were captured, transported and released in Wallace and Sherman counties. Thirteen of these animals were known to have perished that same winter.

Colorado was next to come to the aid of the dwindling Kansas pronghorn herds by sending 61 animals to Barber County in 1966. Eight additional pronghorns were released that year on the Maxwell Game Refuge. In 1967, 50 pronghorns were removed from a semi-captive herd on a military compound in Nebraska and released in Ellsworth County. Upon release on open range, these animals dispersed up to 90 miles from the release site, resulting in a non-reproductive herd.

Then in January 1978, a Kansas trapping crew traveled to Wyoming and returned with 100 pronghorns. Clark County received 63 of these animals, and the remaining 37 were released in Chase County. Trappers returned to Wyoming the following January and returned with the largest number of animals to date (351), which were returned and released in five different counties. Chase County received 98, Ellsworth 75, Clark 74, Morton 36 and 68 went to Gove.

Colorado became the donor state again in 1982 when they supplied the state of Kansas with 95 pronghorns. Chase County received 77 animals to bolster the 1979 release and Morton County received the remaining 18 pronghorns.

Part of the surplus pronghorn population was trapped and removed from the Wallace County herds in 1981 and 1983. Fifty were captured in 1982 and 53 in 1983. These animals were used to supplement earlier releases in Kansas.

Pronghorn Management

The current pronghorn management plan is threefold:

- Continue to expand existing populations to the land's carrying capacity.
- Provide sportsmen with the maximum number of hunting days and animals harvested without jeopardizing the population expansion goals.
- Provide non-consumptive opportunities to wildlife watchers and photographers.

The largest populations occur in Wallace and Sherman counties and are monitored annually by aerial surveys. A population count is conducted in late January or early February. This survey is flown north to south at one-mile intervals. The population figures derived from this flight are used to calculate the pronghorn population levels. Figures from these flights are then used to set the fall pronghorn season.

The second survey is flown in late July or early August to inventory the fawn production. As with the winter flight, the production flight is flown north to south but at one-half mile intervals. The timing of this flight is such that most fawn mortality has already occurred.

Antelope have always been a part of the Kansas wildlife scene. Our responsiblity to future generations is to ensure that this animal continues to flourish here. W&P

Pronghorn Antelope & Bindweed

In the fall of 1981, the old Fish and Game Commission informed the public of a possible pronghorn release. But members of the audience expressed concern that pronghorns were spreading bindweed. Landowners said they'd observed pronghorns grazing on bindweed-infested agriculture land. These animals were believed to pass viable seed through their digestive systems and thereby start new bindweed communities. In an effort to determine the role of pronghorns in bindweed dispersal, the Commission began studying the question that year.

Literature review revealed that field bindweed (*Convolvulus arvensis L.*) is found primarily in cultivated fields and that it flowers and sets seed from May through October, although it's known to bloom and set seed the year round in protected areas and reproduce from roots, rhizomes and seeds. Bindweed seeds can remain viable in the soil for more than 30 years. As far back as 1941, field bindweed was found in all 105 Kansas counties after being introduced from Europe. In 1981 the top field bindweed producing counties were Ellis, McPherson and Marion (all three counties were void of pronghorns at the time).

The first study undertaken was an attempt to document viable field bindweed seed in pronghorn fecal samples. Pronghorn hunters were asked to collect fecal samples from the animals they harvested during the 1981 season. Of the 145 samples collected, 122 were separated and examined for seed. Thirty-five of these samples contained various seeds, 24 contained only prickly pear, and nine contained other seeds such as wheat, milo and prostrate knotweed. Field bindweed seed was not found in any samples.

A second attempt to document pronghorn spreading bindweed was made when a Fort Hays State University student followed a band of pronghorns during the summer of 1982 and collected pellet groups. These samples were dried and examined just as in the first study, and the results were the same. No bindweed seeds were found.

A third study conducted by Ryan, Pojar and Townsend, out of Fort Collins, Colo., force-fed bindweed seed to tame pronghorns to determine if seeds could be passed and, if so, determine the viability of those seeds. Of the 2,000 seeds fed to the animals, only 369 (18.5 percent) were recovered (the rest were mechanically or chemically destroyed.) Germination tests were performed on the recovered seeds, and only 25 seeds germinated.

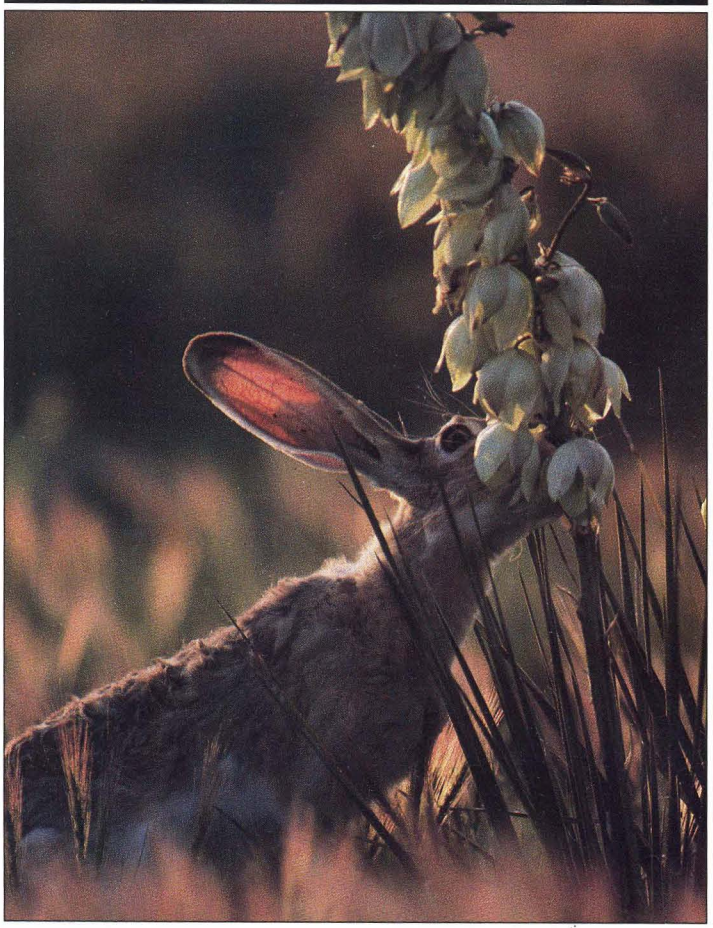
In addition, Mark Sexson conducted a two-year study of pronghorn diets in Kansas during 1977 and 1978. This research was conducted as part of a master's degree program at Fort Hays State University and has since been published. The conclusion reached was that field bindweed did not contribute to pronghorn diet; the study failed to find bindweed seed as a dietary item.

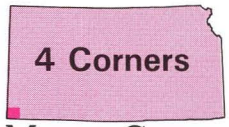
These studies and the records examined have failed to document that pronghorn spread bindweed. Those animals do eat some bindweed but mainly confine themselves to the plant parts and not the seed pods. When eaten, as noted by the Colorado study, pronghorns actually destroy the major portion of the seed ingested. — *Funk*

Studies have failed to document that pronghorn spread bindweed (below). One study failed to find bindweed seed as a pronghorn dietary item.

Mike Blair photo

lesser prairie chicken photo by Gene Brehm





Morton County

The Cornerstone Of Kansas

Morton County is a land rich in history, landscape and wildlife.

by Joe Hartman
and
Mechele MacDonald
U.S. Forest Service
Elkhart

photos by Mike Blair

The cornerstone of Kansas — why is this motto appropriate for the southwest corner of Kansas? Morton County is proud of this motto, which was adopted for the county's 1986 centennial celebration. Let's take a look at perhaps why this claim is true.

In 1541 Francisco Vasquez de Coronado traveled over portions of present-day New Mexico, Texas, Oklahoma and Kansas looking for the fabled seven cities of gold. After reaching the "Province of Quivira" northeast of the Arkansas River, Coronado headed back toward New Mexico. The exact route taken was hard to verify until an act of nature in 1941 revealed evidence showing Coronado did pass through the cornerstone of Kansas — Morton County.

In 1941 the Cimarron River overflowed its banks, washing away hundreds of years of accumulated soil near the base of Point of Rocks, a prominent landmark on the north side of the river. After the flood, Morton County residents George Hayward and son Jack found a signature in Spanish along with the numbers 1541 scratched in the soft sandstone. The signature was later identified as an authentic signature of Coronado. The fact that the signature was old was affirmed by William Baker of Boise City, Okla., who was considered an authority on rocks and fossils. History books indicated that Coronado did pass through this area about that time.

Discovery of this signature soon spread, and many visitors made trips to look at it. Plans were made to enclose the rock area surrounding the eroding signature with protective steel bars. But before work could start on the protection, the rock containing the date was cut out and removed by local people. Since the signature had eroded away and the date removed, this bit of historical evidence was lost.

Until about 1830, this corner of Kansas was known only to the Indian tribes who passed through the area and used the Point of Rock area as a lookout. Buffalo and other wildlife roamed the area.

The first temporary settlement in Morton County was made in 1877 when Bates and Beals, who later operated the L-X Ranch in Texas, camped at Point of Rocks to pasture their herds during the summer. In the fall they removed their droves of cattle to the Canadian River north of Amarillo, Texas, as that county afforded more water and protection.

The Cimarron Valley's luscious grass was viewed from the Point of Rocks, and probably tempted many cattlemen looking for new pasture. But none ventured to claim the prize until 1879, when the Beaty Brothers of Manzanola, Colo., arrived with a herd. Under the leadership John W. Beaty, the brothers established the famous Point of Rocks Ranch.

During 1885 and 1886, the federal government opened the area to the homesteaders. In the spring of '86, dwelling houses appeared in gold-rush fashion all over the county. Few of them had any appearance of permanence, and most of them were built of the sod itself and were only the unescapable ground in another form. Many built dug-outs, and but for a piece of rusty stovepipe sticking up through the roof, you could have walked over the roof of their dwellings without dreaming that you were near a human habitation. Some proved up their homesteads without defiling nature any more than the coyote that had lived there before them had done — not a shed, not a corral, not a well, not even a path broken in the grass.

Four of the many sights (see adjoining page) native to Morton County include (upper left) rosering gaillardia, a common prairie flower; the lesser prairie chicken, a bird of the sand-sage and mixed grassland communities; (lower left) the jackrabbit, which the county has in abundance; and gorgeous sunsets.

Those who hoped to make Morton County their permanent abode dug wells, some of them 60 to 200 feet. Hand pumps were installed if finances were low, but here and there stood a windmill gaunt against the sky. This class of settlers proposed to make Morton County into a modern farming country. For a time, developments went forward promisingly, and hopes were high. The population increased to between 4,000 and 5,000.

In 1889 the settlers discovered how hard it was to cultivate and develop farms when the weather is unfavorable. It was a period of drought and failure — the weather was fatal to all plant life. Seed could not germinate in the dry soil, and the grass actually cracked when walked over.

Farmers lost everything. The whole country was discouraged. Some men felt that they were too weak to make any mark here; that the land wanted to be let alone, to preserve its own fierce strength, its peculiar, savage kind of beauty. They were glad to prove up their claims, offer them for sale and return to a region that had proved habitable. The opening of the strip in Oklahoma lured away many of the discouraged settlers.

With the removal of most of the colonists, the towns were abandoned. The population dwindled until scarcely 200 families remained in the county. Richfield was the only real trading post left on the map.

The early 1890s were years of hard work and careful planning. The settlers were constantly menaced by prairie fires. Fireguards were plowed about every homestead, but during high winds the flames leaped a great distance. Fires were almost a monthly occurrence, and on these occasions men, women and children turned out to fight fire. The most effective method was to have two men ride on either side of the blaze with chains attached to their saddle horns. Sometimes when chains were not available, a cow was shot, split and dragged back and forth across the blaze until the carcass was worn out.

By 1895 the Morton County population had decreased to no more than 500.

In 1905, 400 quarters of land were sold at tax sale for $1 per acre. After the sale, land values rose steadily. With the rise in value, the government land seemed worth the proving up. Another regiment of homeseekers flowed to the county, and all land suitable for cultivation was soon homesteaded. This was not a superboom such as was experienced in 1886, and the settlement was more permanent.

About that time a group of the Richfield people became enthusiastic over the possibilities of artesian water for irrigation. E.C. Wilson, then publisher of the *Richfield Monitor*, was young and enthusiastic. Through his paper, he boosted the project along until a well was put down. The well is located in the southwest part of Richfield and for years has been pouring forth a stream of water that's been used to irrigate about every conceivable sort of vegetation. The well would irrigate 30-80 acres, depending upon the crop.

Another artesian well, which has never been developed, is continuously pouring water out on the prairie just about two miles south of Richfield.

Few prayers were ever addressed to the Throne of Grace as fervently as those from the settlers, who prayed that some railroad company might be moved to build their railroad into Morton County. They had long dreamed that shipping points would be established in the county where they could sell their produce and do their marketing. In 1912 their dreams began to materialize with the survey of the A.T. & S.F. for the extension of its branch from Dodge City to a point on the southern boundary of Morton County. This extension was completed in 1913.

With the coming of the railroad, new towns built up rapidly. Elkhart, Rolla and Wilburton were thriving little villages within a year.

The farming industry, which had never been encouraged because of the great distance from market, immediately developed. For several years, most of the farming was carried on south of the Cimarron River. The sandy soil is especially adapted to such crops as corn, milo maize, kaffir corn, broom corn and watermelons.

Highways and good bridges were constructed and maintained, and about 1920 the unscarred face of the prairies north of the Cimarron River underwent change. The advent of the tractor, combine and truck made the farming of large acreages possible, and thousands of acres of pasture land became wheat farms. Thus the development of a wild land into a productive farming country was accomplished. For almost a decade, the harvest season was a busy time.

Drought was a common enemy of the settlers in southwest Kansas, but by 1905 the last dry cycle had ended and the people of Morton County began to experience a wet cycle that would last for 25 years. Wheat farmers with tractors, one-way plows and combines purchased after the phenomenal crop of 1926 began plowing and planting as never before. In Morton County, 33,009 acres of wheat was harvested in 1930; the following year, 103,787 acres. Not only did the excess wheat supply force the price down from 68 cents in July of 1930 to 25 cents in July 1931, but the broken sod could not hold the soil in place and then, dirt . . . dirt . . . dirt!!!

The cloud rolled in the heaven. It was a dense black, darker than any cloud I had ever seen. Both of us were frightened. It seemed to be moving from the inside out and the edge was fringed as though with fire. There was no rolling sound. It moved in what seemed to be a death-like stillness. Suddenly we were enveloped. The air became charged with electricity. Darkness crowded about us as we sat in the parked car. I cannot see you, I said to my friend. I cannot see anything. He turned on the lights to the car. They were not visible. I held my hand before my face. I still could not see my hand. I soon became conscious that breathing was very oppressive. We took out our handkerchiefs, folded it as many times as possible and held it over our nostrils . . . we felt like we were smothering in dust. We sat in the car for an hour while the car rocked to and fro. Our equilibrium became confused, and it felt like the car had left the ground and we were flying. Most of the time I could hear nothing, although he said he had talked. About 3 hours, the storm began to lighten in its fury. We were able to discern the outline of the car and when the lights were

turned on we could see them slightly. We started to drive on, but discovered we could not move. The sand had drifted to the running board.

This descriptive paragraph, written by an anonymous writer and printed in the *Old Timer News*, is just one of the many stories describing "Black Sunday," April 14, 1935. Following is another unanimous reminiscence:

A wall of dust, without warning, rolled in from the north, dark as night. At 3 o'clock in the afternoon, lights were turned on but to no avail. Traffic stopped; tractors were left to be hidden by sand and silt; tumbleweeds jumped the fences; yards, pastures and fields were soon bare of top soil. Dust sickness blackened lungs, red eyes, dry creeks, shattered windmills. Tanks full of sand, cattle wandering blindly in search of protection and care . . . an uncontrollable adversity to be faced.

There were a total of 70 duststorms on the High Plains in 1933; 22 in 1934; 53 in 1935; 73 in 1936 and 134 in 1937. In May 1937, there were 23 duststorms alone. Of the 100 counties in the five-state area considered to be contained in the "Dust Bowl", Arthur H. Joel, who conducted a survey for the Soil Conservation Service, considered Morton County as the most seriously damaged county in the Dust Bowl with 78.4 percent of its total acres seriously damaged by erosion due to the wind and weather. Northwest Morton County suffered most from lack of precipitation during the 1930s. The Richfield weather station recorded only 116.5 inches of moisture from 1930 to 1939 inclusive, or an annual average precipitation measurement of 11.62 inches per year. The driest year recorded during the dirty 30s at any of the weather reporting stations in the Dust Bowl was 4.96 inches recorded at Richfield.

Static electricity was also a problem resulting from the dust storms. Not only did it cause a problem from car ignitions, but was one of the contributors to crop damage. Static electricity played havoc with young, tender shoots of wheat, destroying the roots. Enough static electricity was produced on Black Sunday to power the city of New York for all of its electrical needs for 24 hours at present-day use, with enough leftover to power the entire state of Connecticut for a similar time period.

Georgia Tucker Smith writes in her book, *Leave It To Miss Annie:*

The sky would darken and heavy black billowing clouds of dust would approach like a huge wall that boiled and crumbled as it advanced, burying crops and producing almost total darkness. To go from house to house, it was necessary to wear a dust mask and carry a flashlight. Sometimes the wind was so strong one could scarcely advance in the face of it . . .

An old-timer said that a horse tied to a post near the skating rink in Elkhart had been completely buried in sand and that two children who were playing after the storm noticed a rope tied to the top of the post that protruded above the mound, and on pulling it found a horse tied to the other end.

There was no solution or stopping the cyclonic winds, which were kicking up the dirt on the ground and hurling it 20,000 feet into the air. At the same time the roller was churning dirt in a cylindrical fashion, in what local observers termed a "sidewinder" or "horizontal tornado". The "roller," on April 14, 1935, was some 1,000 miles wide, traveling 1,500 miles south-southeast before it finally broke up and scattered into the Gulf of Mexico. The roller appeared to be traveling about 15-20 miles per hour, although the weather bureau estimated the winds overhead and behind the roller at 100 mph.

The Dust Bowl demanded immediate attention. The Bankhead-Jones Farm Tenant Act was approved by the 75th Congress. Under this act the Resettlement Administration started buying up the worst of the Dust Bowl area in Morton County in 1936. By 1939 the government had purchased 107,000 acres.

George Atwood was hired in 1938 to oversee the Land Utilization Project. He once made the statement, "You could stand here and look all the way to Colorado without seeing a living piece of vegetation except for an occasional clump of sagebrush."

The Soil Conservation Service administered the project until Jan. 1, 1954, when administration was transferred to the Forest Service. In 1960 the Land Utilization Project in Morton and Stevens counties was made a part of the National Forest system and called the Cimarron National Grassland, composed of 108,175 acres.

Morton County and the Cimarron National Grassland have prospered in a partnership through the years. In 1978 Morton County had a total valuation of more than $103 million with farm, family business and personal property valued at $4.1 million and oil and gas coming to $67 million of the total. Also in 1987 the U.S. Forest Service took in revenues totaling $22.3 million on the Cimarron National Grassland. The Forest Service returned 25 percent of these revenues ($4.5 million) to Morton and Stevens counties to be used for roads and schools.

Of Morton County's 464,000 total acres, farmers have put 87,996 acres into the Conservation Reserve Program (CRP) within the county; another 311,356 acres are crop land. And Morton County residents are proud that the Cimarron National Grassland has most of its 108,175 acres in the county. The Cimarron National Grassland is the largest parcel of public land in Kansas and the only land in Kansas administered by the Forest Service.

The Forest Service presently allows 120 farmers to graze 5,000 head of cattle for six months on the Cimarron National Grassland. When you consider that in 1938 only 4,000 of the 108,175 acres contained grass, the local farmers and the Forest Service have come a long way. The Grassland has 496 miles of fence, 33 wells and 125 windmills to manage the livestock. The first oil well was drilled in 1929. The well was a dry hole but if the well had been drilled 1,000 feet deeper, the fruitful interstate field would have been discovered a quarter of a century earlier. The Grassland also is home to 424 oil- and gas-producing wells and about 300 miles of pipelines.

The Cimarron National Grassland provides plenty of recreational opportunity. There are 23 miles of the Santa Fe Trail including the historic Point of Rocks and Middle Spring. Visitors will also find 12 fishing ponds stocked

with black bass and channel catfish. There are also several picnic spots and a self-guided auto tour. The Grassland had been a local recreation secret for a long time, but it's been discovered by the rest of Kansas. Hunting, bird-watching and photography, for example, are major recreational attractions.

Journals of early-day explorers and settlers indicate that wildlife was abundant in the area. Buffalo and antelope were common. Before 1886 this area was a hunting ground for the Kiowa and Comanche Indians. Later it was open range for cattle. Wildlife numbers declined rapidly in the late 19th century because of market hunting and the large herds of cattle using the area. The antelope, buffalo and wild turkey were eliminated. The Rio Grande turkey was reintroduced in 1966, and a hunting season was opened for them in 1974. Antelope were reintroduced in 1979; a hunting season opened in 1987.

Drought, overgrazing and early-day farming seriously damaged or destroyed most of the historical habitat for small game and birds. With the re-establishment of grass and grazing management by the Forest Service, plus some wildlife reintroduction by the Kansas Department of Wildlife and Parks, the numbers and ranges of quail, turkey, pheasant, lesser prairie chicken and deer have increased. The Service also plans to work with groups such as Quail Unlimited and the Safari Club to improve wildlife habitat.

Good populations of bobwhite quail and scaled quail exist on the Cimarron National Grassland. Lesser prairie chicken populations are thriving, and pheasants are abundant throughout Morton County.

Deer populations were small when the first white men came through the area; brush and timber were nearly non-existent in western Kansas. But trees have grown on the Cimarron River since 1942, and there are presently 20,000 acres of tree-covered riverbottom. Mule deer were transplanted in the early 1940s and gradually increased as the cover developed. White-tailed deer migrated into the area during the 1960s. Today, both white-tailed deer and mule deer are found on the Cimarron Grassland, primarily on the wooded riverbottom. Whitetails, which comprise most of the population, have increased to the point of overcompeting with mule deer in the prime habitat. Current harvest management in the Cimarron Grassland protects mule deer.

Management efforts to increase and maintain deer populations include: 1) a deferred grazing program on the river pastures to maintain good vegetative growth; 2) intensified food-plot development along the river; 3) increased law-enforcement efforts to reduce poaching; and 4) fencing selected woody draws on hardlands as fawning areas and travel lanes.

Before the homesteading era, antelope were plentiful in the area, and some remained until the early 1920s. Since then, a few have occasionally re-entered the area but never stayed. Antelope were reintroduced in January 1979 by the Kansas Department of Wildlife and Parks. The present population is estimated at 50 animals.

Elk were native to this prairie land but were gone before 1900. In January 1981 the Department reintroduced elk to the Grassland. The elk have done well despite early setbacks and now number between 40 and 50 animals. The herd size, by current agreement, cannot exceed 50 animals. An amendment to the agreement should be considered to increase the herd size to between 75 and 100 animals to improve management opportunities. Excess animals provide limited elk hunting. The first season, in 1987, provided a harvest of four bulls, all of them 6-pointers or better.

The Grassland encompasses about 25 miles of cottonwood riverbottom. Elk stay primarily in the area's woody habitat. Twelve elk were released in the initial stocking and supplemental stockings were made in 1982, 1984 and 1988. Plans are being made to release an additional 10 cows, which would increase the herd's genetic diversity.

Wild turkeys may not have been native to the area because of insufficient woody cover prior to the late 1940s. Wildlife and Parks introduced Rio Grande turkeys to the Grassland in 1965. Previously the flock was stable with each year's winter count ranging between 200 and 300 birds.

Lesser prairie chickens are present in moderate numbers. In Kansas this species rarely occurs where sand-sage prairie is not present and even then in low numbers. Unlike the greater prairie chicken, the lesser requires brushlands in order to exist. Nationwide, the range of the lesser prairie chicken has been greatly reduced by agriculture. As with other prairie grouse, the lesser requires large acreages of native grassland vegetation. Good prairie chicken management is closely associated with proper range and soil management.

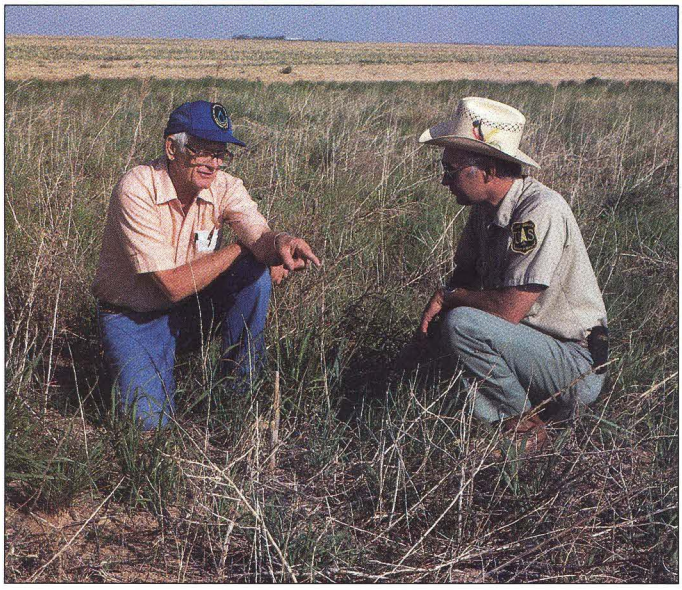
Prairie chickens occupied both sand-sage and mixed grassland communities before settling in in area. The stories of their early abundance parallel those of the buffalo. Large expanses of big bluestem and other native grasses provide ideal prairie habitat for this gamebird, but as major changes in land use and agricultural practices were made, the chicken's range was destroyed. Today the bird is restricted to only those areas where extensive natural grassland remains.

Mourning doves are the most abundant breeding bird on the Grassland. While some are present all year, the largest numbers are found from April through September. Doves are prolific breeders, nesting either on the ground or in trees. More doves are shot by hunters on the Grassland than any other gamebird present. Since the number available far exceed the demand of local hunters, no additional management has been planned.

Bobwhite quail are found throughout the Grassland but especially along the river and in the sandy lands adjacent to private croplands and old homesites. A major limiting factor for bobwhites is winter cover, but an adequate winter food supply is the most important limiting factor.

Scaled quail are found on upland sites adjacent to private croplands where sufficient winter cover (old homesites, woody vegetation or brushpiles) are present. Scattered coveys in the uplands use the oil and gas developments as a home base. The bird is native to the area but appears to prefer moderately grazed and otherwise disturbed sites adjacent to native grassland.

Extensive quail management efforts have been implemented on the Grassland because of public demand. There are more hunter days of quail hunting on the Grassland than all other forms of hunting combined. A total of



Author Joe Hartman (right) and district conservationist Don Folkerts discuss CRP plantings in Morton County, which ranks third among Kansas counties in erodible acres entered into the program.

This "Ah! Kansas" sign greets northbound travelers in Elkhart as they enter Kansas from Oklahoma. Point of Rocks is one of the best-known landmarks in Morton County.

83 guzzlers have been built to provide shelter and water. Twenty corner areas have been fenced to provide cover adjacent to private croplands, and 34 development areas have been fenced for quail. Numerous brushpiles, shelters and old homesites have improved the habitat for the birds. Management efforts are planned to continue this work.

Important mammals include the black-tailed jackrabbit, desert cottontail, coyote, bobcat, beaver, raccoon, porcupine, kit fox, badger, prairie dog, kangaroo rat and numerous other species of small mammals.

Other wildlife species including 286 species of birds and 49 species of mammals and reptiles are abundant on the Grassland. Because the area is surrounded by large, unbroken tracts of farmed land, the prairie setting is an important breeding, wintering and staging area for resident and migratory wildlife. It's also an important wintering area for golden eagles, hawks and prairie falcons in addition to numerous wintering prairie songbirds. During the spring and fall migration, many species of birds migrate through the area. In late spring and summer, large numbers of prairie birds breed on the Grassland.

Birdwatchers travel to Morton County and the Cimarron National Grassland for its unique bird life and scenery. The flowing grassland, sagebrush, wind-swept yucca and wooded riverbottom provides diverse homes to many bird species found no other place in Kansas.

Typical hawks found are the Ferruginous and the fast-flying prairie falcon and kestrel. Great horned, burrowing, long-eared and barn owls can be found. Northern harriers, Mississippi kites and Swainson's hawks are also present.

Additional thrills for the birdwatchers can be found from seeing rock wrens and the white-throated swifts among the Point of Rock cliffs. Also among the cliffs and butts along the Cimarron River are many towhees, finches and western-type thrashers. The list goes on and on. The Forest Service offers a free pamphlet titled "Birds of the Cimarron National Grassland." Another free pamphlet, called "Checklist of Amphibians, Mammals, Reptiles and Fishes," also is available. Joseph T. Collins, a zoologist with the University of Kansas, is working with the Forest Service to update this list.

Morton County can easily justify its claim of being the Cornerstone of Kansas. From the Morton County Museum in Elkhart to the Cimarron National Grassland with all its natural beauty, you'll enjoy the county and its friendly towns. For more information, write to the Elkhart Area Chamber of Commerce, P.O. Box 696, Elkhart, KS 67950 or USDA, Forest Service, Cimarron National Grassland, P.O. Box J, Elkhart, KS 67950 or Morton County Historical Society Museum, Highway 56, Elkhart, KS 67950. W&P

District ranger and author Joe Hartman administers the Cimarron National Grassland. Mechele MacDonald is the Grassland's office business manager. The authors thank the Morton County Historical Society for its assistance in preparing this story. Hartman and MacDonald also drew from the printed works of George Atwood, E.M. Dean and Bertha Carpenter Hjort. Historical reports in this story were taken from the book ***Morton County 1886-1986 Cornerstone of Kansas.***

Hog Tight, Horse High & Bull Strong

Osage orange has played an amazing role in Kansas history. The inside scoop on hedge apples.

by Jean Caldwell
Olathe

photos by Mike Blair

My next-door neighbor has in his backyard a female Osage orange tree, a prolific one at that. The other day I overheard him through the privacy fence trying to coax his Labrador retriever into carting his hedge apples over to my backyard. The dog wouldn't hear of it. Then I heard the thunk of boot to apple and a muttered "useless things."

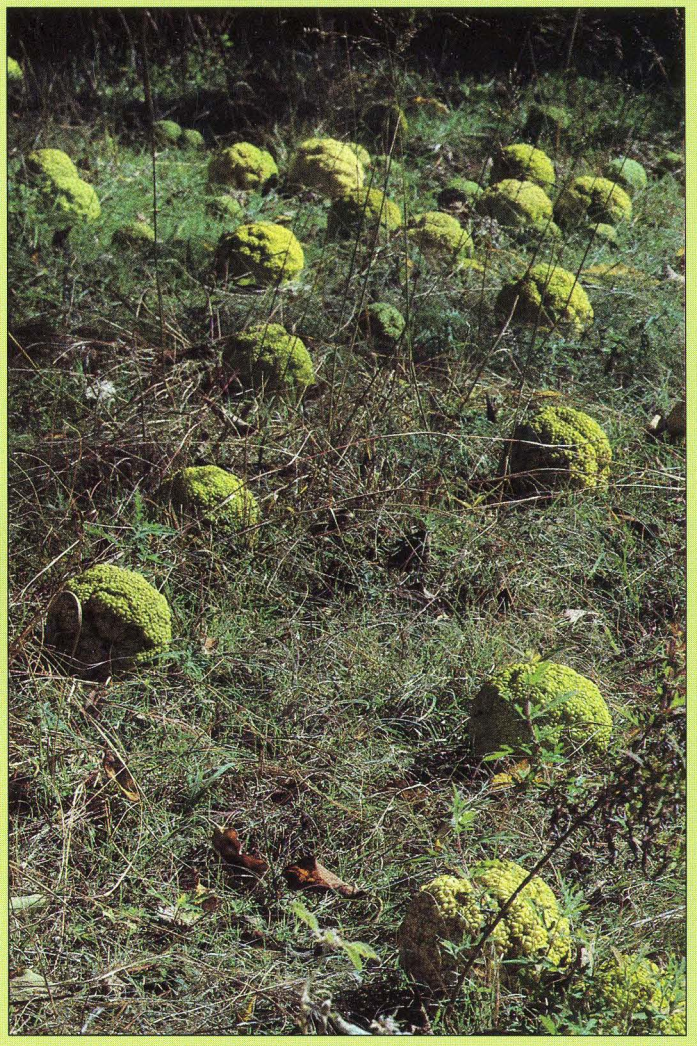
But for some strange reason that got me to wondering about Osage oranges, so I did some ferreting in the library, and, to my astonishment, learned that the Osage is a famous Kansas resident and has played an amazingly important role in Kansas history.

For one thing, it was at the very center of the notorious range wars. Homesteaders were encouraged to improve their land by building fences, but they greatly resented having to do so since the fence law favored ranchers, whose stock ranged free. So farmers grudgingly built fences to keep the range cattle out of their cropland.

But in 1867, Gov. Crawford signed a bill that provided a bounty of $2 for each 40 rods of fence when it would resist stock. Encouraged by the bounty, farmers fenced and cross-fenced their farms with Osage hedge — 6,000 miles worth, in fact.

Kansas Farmer, the Grange paper, ran many articles about the art of hedgerow growing. Controversies flared about whether to cut the saplings and bend them over or plant seedlings close together and trim off the tops. One fellow modestly claimed that his method produced a fence that "no rabbit can pass through."

Regardless of the method, though, the standards for a fence were important to farmers because they wanted the



Some folks consider Osage orange hedge apples a nuisance. But consider one of the practical uses of this hedge fruit — they look great when dried and placed in floral arrangements.

The twigs of Osage orange are spiny, making it an excellent natural fence. Inset photo shows a hedge ball up close and in the flesh.

bounty as soon as possible. Township assessors were to judge whether a fence came up to legal specifications. A good hedge fence should be "hog tight, horse high and bull strong." These specs, you can be sure, were the source of some mighty lively debates.

During the 1860s, hedge seedlings were in such demand that Osage orange made up the greatest volume of all the nurseries in Kansas. Thousands of farmers had their own nurseries for propagating the seedlings for themselves and their neighbors. The price of the seed ranged from $8 to as high as $50 a bushel.

By the end of 1866, hedge was the top fence in Kansas, and it continued to be until the late 1800s. Barbed wire was introduced in Kansas in 1874, but even when it became popular, the nurseries still grew Osage orange because hedge posts were regarded as the best farmers could buy. The posts, though crooked, are extremely durable and insect resistant.

The tree is renowned for its strength but at the same time cursed for its crookedness and the difficulty of cutting it. But it was perfect for making wagon felloes. By the early 1900s, wagons with Osage wheel rims were manufactured by the thousands each year. In fact, the U.S. Forest Service was seriously concerned that we would run out of hedge.

Railroad companies sought the rare, long, straight trunks for bridge pilings, and many homes were built with underpinnings of Osage blocks set on end. Osage telephone poles dotted the countryside. Even the insulators on the poles were made of hedge, as were gun stocks, parquetry floors, street pavements, pipe bowls and policemen's billy clubs.

Squirrels and other critters eat hedge apples. Osage orange windbreaks (below) are tools of the conservationist. These windbreaks reduce soil losses from wind erosion.

Today most of the hedgerows have been jerked out to make way for improvements of one sort or another, but for a long time Osage served other purposes besides windrows and fencing. During the early 1900s, hundreds of tons of Osage roots were grubbed out along Kansas roadways to be shipped to dye factories. The roots contain morindin, the source of gold and khaki dye, and they were in great demand during WW I as the color for military uniforms.

Osage orange was prized long before white men began fencing Kansas. When Coronado visited the site of Lyons, Kan. in 1541, he reported that the Quivirans made admirable bows from the wood of the Osage orange, which the Spaniards called *arbol de arco.* (The French followed the Spaniards, calling the wood *bois d'arc.* It is still commonly known as bodark.) The bows were made with the heartwood facing the string; the Spaniards reported that this bow was so strong that an arrow could be shot into a buffalo, or a man, right up to the end of the arrow fletching. The Arikarees of the Dakotas and other distant tribes prized the wood so highly that they traveled to what is now Kansas to buy it. And it didn't come cheap. The going rate for enough wood to make a bow was one horse and one blanket.

Squirrels and other rodents eat hedge apple seeds, but most folks, like my neighbor, consider the apples a nuisance. Some roll them into corners to repel bugs, and others slice up the apples and bake them till dried for use in floral arrangements. But perhaps man's need to find a "use" for hedge apples will soon be satisfied. Maybe they will be used once again to grow more hedgerows and not just in Kansas either.

When farmers rooted out their hedgerows, they gained a little land but lost the windbreaks that helped prevent soil erosion. And we pay a heavy penalty for those wide open fields. The United States loses more than 6 billion tons of top soil each year because of it. Kansas alone loses soil to wind erosion at the rate of 2.9 tons per acre per year. The Cooperative Extension Service at K-State translates that into an annual loss of $23 million to Kansans.

But now, once again, farmers are being offered a bounty of sorts for growing trees for windbreaks. The Soil Conservation Service encourages farmers by offering cost-sharing plans, inexpensive seedlings and individual planning. The Service encourages farmers to use about 5 percent of their cropland for windbreaks. Although it takes a few years to offset the cost of planting the windbreak and the land taken out of production, the savings in the long run are well worth it.

Windbreaks stabilize the soil and provide cover for birds and other small critters — creatures eminently worth preserving.

Who knows, perhaps we shall witness the renaissance of the Osage hedge. And I sure would give a horse and a blanket to see that happen. W&P

Jean Caldwell, a freelance writer, is the self-appointed inspector of hedge apples for Olathe, Kan.

Osage orange was often planted as a natural fence for dividing property or subdividing fields.

the center section

Edited by Mike Miller

LETTERS

LAND LAWS

Editor:

I would like to see some changes made in the way private property is posted in Kansas. For example, when you see a no hunting or no fishing without permission sign, no address and no phone number is given to help you contact the landowner. When you stop at the nearest farmhouse, nobody seems to know who owns the land.

Another confusing example is when you come to an intersection with one side of the road posted, but the opposite is not. You believe the same person owns both sides, but there's only one posted sign. Does the posted sign apply for both sides of the road?

I also have a question concerning fishing along the Missouri River in Doniphan County. If a farmer owns property along the river, does he own it right up to the water line? Can he stop you from walking along the bank?

Benton L. Hollingsworth
Atchison

Dear Mr. Hollingsworth:

You pose some very common and timely questions. With the hunting seasons opening this fall, I'm sure many hunters must be asking the same ones.

To begin with, you must consider all private land in Kansas as posted. By law, you must have permission to hunt or fish on all private land, posted or not.

Secondly, the burden of supplying hunters and fishermen with landowners' names is not with the landowners, but with sportsmen. The best way to do this is to purchase a county map from the local county abstract office. These maps have ownership boundaries marked and landowner's names on all county property. And I'm sure if you take the time to get to know several landowners in an area, you'll find one that will know who owns most of the land. Many long-lasting friendships have developed through landowner-sportsman contacts, and usually the sportsman finds more than enough land to hunt on.

The landowner who gives you permission to hunt or fish is providing you with a privilege. If a man you'd never seen before asked to park his vehicle in your driveway, you'd probably say no. But if a neighbor or friend asked, you'd probably say yes. Approach getting hunting and fishing permission this way. First get to know the landowner, and you'll be much more successful.

Landowners along the Missouri River own the land up to the highwater line. They can control access to the river across their property. And if you're in the river, you must stay within the highwater lines.
Miller

ALLOW NONRESIDENTS

Editor:

I agree with Jerre Porter of Rock Springs, Wyo., whose letter appeared in the July/August issue of the magazine. (He wrote asking that nonresidents be allowed to hunt deer in Kansas.) I have hunted antelope and deer in his great state with 100 percent success over the years. I wish our state would allow out-of-staters to hunt our deer, now that we have a good population. In some places, there's too many deer, and they're doing considerable damage. My own place included. If some of the people who don't want nonresident deer hunters had to suffer some of the deer damages, they might change their minds and not be so greedy.

Paul F. Gabel
Kansas City

DEFENDS RESIDENTS

Editor:

I am writing in response to the (July/August) letter from Jerre Porter of Rock Springs, Wyo., who wants to hunt deer in Kansas. I am getting more than a little tired of Kansas and its residents being put down because we don't want nonresident deer hunters. Porter mentioned we will be allowed two permits this year, but he won't be allowed one. I think many states that allow nonresident deer hunting already allow two or more deer permits to their residents.

As for allowing former residents to purchase lifetime licenses . . . there must have been some advantage in moving out of Kansas, so they must also accept the disadvantages.

Kansas resident hunters have supplied the resources necessary for management of our deer, so it's more than fair that we be the ones that reap the benefits. If other states wish to stop nonresident hunting, I say so what? We've got plenty of good hunting right here at home.

Alan Thornton
Neodesha

LIKES NEW MAG

Editor:

Just wanted to let you know that your "new" magazine is a great improvement over the other. I liked your publication before, but my wife, who is not much of an outdoor enthusiast, finds many of the articles very interesting. I'm afraid I'll accumulate a lot of the magazines, as I hate to throw them away.

C. R. Schreiner
Larned

UNHAPPY CAMPERS

Editor:

My wife and I love to fish and camp, and we do this in the various state parks in Kansas. We purchase the annual park stickers for our campers and towing vehicle.

On July 4, 1987, we had the misfortune of going to Glen Elder State Park, where my daughter, her husband and their three children were to join us. I went to the campground early hoping to get a campsite near the restroom. There were plenty of campsites when I arrived at the park on July 1. I set up my camper and went to the park host to pay. But I was surprised to be told that a local person had reserved that site, along with seven others, and that another person had reserved four more sites. I was told to move, but there really wasn't any sites open.

I believe this is an unfair practice. It's 120 miles from Hutchinson to Glen Elder, and I had to pull back to Kanopolis to find a campsite.

Danniel J. Hamsby
Hutchinson

Dear Mr. Hamsby:

I assure you that it is not our policy at Glen Elder State Park to reserve campsites. Sites are sold on a first-come, first-served basis. A circumstance you might encounter is an occupied sign. These are used when campers owning a van, minihome or motorhome must leave their site to use the dump station or take on water.

I'm sorry you didn't find suitable facilities available on your trip to Glen Elder. However, in 1987, high-water conditions kept many campers away, and we had electrical sites available, even during holiday weekends. The preferred sites (those near restrooms) are usually taken at least a week in advance of the holiday weekend. *Charles W. Burger, Glen Elder State Park manager*

DISAPPOINTED

Editor:

I was disappointed to read in the July/August issue about the rules for applying for bowhunting permits this year. The good news is that a bowhunter may get two permits. The bad news is that the hunter must apply for the unit (second) archery permit AND buy a regular permit over the counter, both before the season begins. This constitutes an investment of $61 for bowhunting deer and an additional $20.50 for an archery turkey permit.

Combine those fees with a spring turkey permit ($20.50), a hunting license ($10), a federal duck stamp ($10) and a state duck stamp ($3), and you have spent $125 on resident fees to go on three types of hunts.

It is also my understanding that only a small percentage of this money goes to the Kansas Department of Wildlife and Parks, the rest to the state's General Fund.

Maybe it is time we start patterning our conservation policies after some of the more successful states such as Pennsylvania, Florida and Missouri. Residents of these states are not burdened by outrageous permit fees and rules that require an extra outlay of cash in order to take a chance of filling one tag in hopes of using the other.

B. Gleeson
Leawood

Dear Mr. Gleeson:

It might be inconvenient for you to purchase both bowhunting permits before the season, but there is a good reason. It would be difficult to monitor the number of permits a hunter purchased if the permits were on sale all season long. Also, there is the possibility of a hunter not purchasing a permit until after the deer is killed.

Hunting fees, as with everything else, have reflected the rising costs in today's economy. Proper wildlife management isn't cheap. License and permit fees do go to the Department. It's our fine monies that go into the State's General Fund.

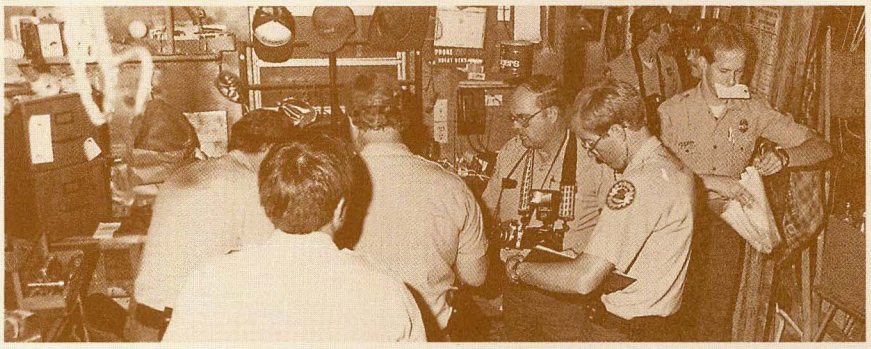
The states you mentioned as being more successful than ours all have the benefit of many more hunters. In Pennsylvania, nearly 1 million hunters are in the field during deer season. More than 250,000 of those are archers, but their success rate is only 2 percent. In Missouri, 74,000 bowhunters enjoy only an 8 percent success rate. In Kansas, 13,000 bowhunters enjoy one of the best success rates in the country: 35 percent. Hunting areas are less crowded and hunting is generally better, but with less licenses sold, they cost more. Also, Missouri benefits from a state sales tax, which allows the conservation department to charge less for permits.

In many ways, Kansans enjoy some of the best outdoor opportunities in the country, but providing those opportunities is costly. We're doing our best to use permit and license fees to manage the state's wildlife and to provide quality outdoor experiences. *Miller*

WRITE US

We welcome comments from readers. Please send letters to Letters to the Editor, Kansas Department of Wildlife and Parks, RR 2, Box 54A, Pratt, KS 67124. All letters are subject to editing in the interest of clarity and brevity.

THE LAW



Conservation officers sort through evidence while serving a warrant. Charges were brought against 20 Kansans after a year-long investigation called "Operation River Fish."

POACHERS STUNG

Things are seldom as they seem. Just ask the 20 or so people who were greeted at 6 a.m. June 29 by uniformed officers bearing search and arrest warrants. The warrants resulted from undercover poaching investigations that started more than a year ago. "Operation River Fish," as Department of Wildlife and Parks officials dubbed the scheme, was initiated because Cowley County officers had been frustrated in stopping known poachers.

It all started in early July of last year, as a plainclothed Wildlife and Parks officer sat fishing on the Walnut River bank near Winfield. A weathered-looking stranger ambled toward the disguised officer. "Wanta' buy some fish?" inquired the stranger. (Wildlife is a public resource and may not be bartered for profit.)

"That depends," replied the officer, glancing up only briefly. "How many and how much?" The officer paid $10 for a 10-pound flathead catfish and accepted an offer to buy more the next morning.

The stranger was late for their morning appointment. When he arrived, he apologized, saying he'd spent the previous day's fish money at a local tavern. The stranger told his new-found business associate he could telephone up (electrically shock) the fish before evening. The stranger's word was good, and he sent the undercover game warden on his way with two more flatheads weighing a combined 45 pounds.

In Great Bend, the now-familiar stranger introduced the covert officers to members of a local motorcycle club. One of them, a fur dealer, told the officers he could sell them all the fish they wanted. He bragged of times when he fooled uniformed wildlife officers and boasted, "Them game wardens are gonna' hafta' get up pretty early to catch me." The suspect also offered beaver, raccoon and deer. The covert officers eventually bought all of these species and more. Before the wardens were finished gathering evidence against him, they purchased a huge snapping turtle, a bobcat and more than 1,000 pounds of illegal fish. Responding to the outlaw furdealer's request, the officers provided him an Oklahoma bobcat tag to make an illegally taken Kansas animal appear legitimate. That opened the door for a felony charge against the man, because he had solicited consumers (undercover officers) to assist in an unlawful business act.

The Great Bend suspect also told officers how he and friends fooled game wardens while taking multiple limits of walleye. Then he invited the officers to a fish fry to conduct more business and sample some fish. The illegal walleye was tasty — so good, in fact, that an undercover officer bought a meal "to go." That meal is now frozen in a Wildlife and Parks Department evidence freezer. The culprit had also sold barbecued raccoon and beaver.

When fall came, the Winfield stranger introduced the covert officers to a deer poaching ring. Unshaven and shabbily dressed, the officers met the stranger at a tavern in Fredonia. From there, they drove several rural miles before one of the poachers ordered them to stop and turn off the headlights. The poachers looked nervously around for signs of someone following. Then, sure the way was safe, they escorted the officers down a pasture trail to a shed made of old box cars. Inside, the first of 18 illegal deer was purchased for about $100. The poachers told their new business associates not to buy deer from anyone else in the county, as it was their territory.

As the investigation expanded, new suspects were encountered in northeast Kansas. A Topeka bait dealer paid officers $2 per dozen for large bait fish, though he knew they were taken illegally. Another undercover officer bought some of the same fish from the bait dealer, paying $6.50 per dozen.

Back in Winfield, the undercover officers' seedy acquaintances put them in touch with another bait dealer who was illegally selling catfish. The ensuing transaction implicated both the bait shop owner and an employee.

The undercover operation also grew to entail an unrelated group of Montgomery County poachers who specialized in using spotlights to take deer at night. Two more officers were called in and posed as traveling contractors to gain the suspects' confidence. The officers witnessed and documented sale of deer, killing hawks and owls, and much more wildlife resource abuse. In all, four people were charged with nearly 80 violations as a result of that investigation.

When Operation River Fish came to a close, more than 40 Wildlife and Parks officers and numerous local authorities served warrants on those who had been caught in the sting. In eight Kansas counties, suspects were awakened by the officers' 6 a.m. knock on the door. Many of the suspects were jailed under bonds ranging from $100 to $25,000. In all, about 300 charges stand against more than 20 Kansans, and investigations are pending against several more. They face fines up to $1,000 and possible six-month jail sentences. *Rob Manes, wildlife education coordinator*

HUNTING

UPLAND FORECAST

Small-game biologists have been on a roller coaster trying to predict the 1988 upland bird season. Last spring, things looked promising. Excellent numbers of pheasants, quail and prairie chickens enjoyed heavy cover conditions and survived last winter's mild weather. A dry, warm spring pleased biologists who believed the birds would nest early. Chicks hatched in early June are more likely to survive scorching temperatures that usually hit in late June, and they're out of the nests before the combines hit the wheat fields.

Everything looked rosey, until we realized that the long dry spell was turning into a drought. Or was it? The television and newspaper told us Kansas was in a terrible drought, and people worried how the wildlife would be affected. In some areas of Kansas, conditions could have reduced hatching success and may have been tough on young chicks. But biologists are optimistic that since the 100-degree days didn't come until late June, many of the chicks were old enough to withstand the heat.

Another problem associated with dry weather is sparse weed growth and poor insect production. But there appears to be plenty of grasshoppers and insects for the chicks to eat, and with the rains we received in early July, cover shouldn't be a problem.

Now we're back where we started: optimistic about the upland bird seasons.

"We may have dodged a bullet," small-game biologist Randy Rodgers said. "I have changed my outlook dramatically. The July rains may take care of cover conditions."

Rodgers said that we may, in fact, be experiencing an ideal year for pheasant production. "We really won't know until the brood-count surveys are done in August," he said in mid July, "but the outlook has improved. A dry spring and wet midsummer are usually very good conditions for pheasants and quail."

Biologist Kevin Church echoed Rodgers' sentiments. "There's every indication that we will see a very good quail and prairie chicken season this year," he said. Church, who works in Emporia, said that insects were plentiful in the grasslands and that chicks should have little trouble finding a meal. According to Church, the food sources and cover growth were also his biggest concerns during the dry period. But the midsummer rains have eased those concerns. In fact, Church expects quail hunting to be at least as good as last year in the east and better than last year in the central and western regions.

Keep your fingers crossed. It would take a disaster to change the upland bird outlook now. If the weather cooperates, we might be heading into one of our best bird seasons in several years. *Miller*

BOWHUNTER BONUS

Kansas archery deer hunters should be looking forward to the 1988 season with added enthusiasm. Not only can they look forward to the same quality hunting, provided by a growing deer herd and trophy-sized bucks, but some hunters may also take two deer.

Bowhunting deer in Kansas just continues to improve. That's evident as Kansas bowhunters continue to have one of the best success rates in the nation, and by the huge bucks taken. Just to be included in the state's Top 20 list, a hunter must kill a whitetail with a rack that scores more than 170 Pope and Young points. That's a tremendous buck by any hunter's standard, but several are taken each year by Kansas bowhunters.

Last year, Kansas bowhunters enjoyed a 35 percent success rate. In contrast, bowhunters in many Eastern states never reach a success rate above 10 percent. There were 12,385 active Kansas bowhunters in 1987, and they killed 4,329 deer, 68 percent of which were bucks.

Information supplied by bowhunters' report cards gives hunters some insight on when their hunting time is best spent. From Nov. 7-22, 34 percent of the total harvest was taken. In other words, one-third of the season's deer were killed in just 16 days. Those days coincide with the rut or breeding season in Kansas, and deer, especially bucks, are much more active.

1988 should be another good year for bowhunters. The herd continues to grow in most parts of the state, and this year there's a bonus. Bowhunters in many parts of Kansas will be able to apply for a unit (second) archery permit that will allow them to take an antlerless deer in addition to a deer they may take on their regular permit.

To receive a unit archery permit, bowhunters must first buy the regular-season permit. Those are sold over-the-counter from July 1-Sept. 30. Then they must apply for the unit archery permit from Sept. 6-30. The unit archery permits are sold by management units (same as firearms) and require the hunter to hunt with that permit in the specified unit. There are units that have no unit archery permits available, units

with a limited number available and some units with unlimited permits available. The permits will be sold on a first-come, first-served basis. Applications are included in the Big Game Application brochures, which are available at most Department of Wildlife and Parks offices and wherever licenses are sold. *Miller*

BANNER DOVE YEAR

Kansas is usually one of the top dove states in the U.S. Last year Kansas was the No. 2 dove state in the U.S., behind North Dakota. A survey, which counts dove coos along a 20-mile route, is done each summer to give wildlife managers an idea of the number of breeding birds present.

In 1988, Kansas regained its No. 1 dove state status.

Another encouraging fact from the survey is that both Kansas and North Dakota saw increases in dove numbers this year. Couple that with ideal nesting conditions in early summer, and you've got the ingredients for a banner 1988 dove season. Doves are extremely prolific. Some adults will nest up to three times in a summer, and doves hatched in early spring may even nest by late summer. The biggest problem nesting doves encounter are severe summer storms. Doves are weak nest builders, and high winds associated with thunderstorms often destroy nests.

Another important factor needed for a good dove season is dry, hot late-summer weather. It only takes a light cool snap with a little rain mixed in to start the doves south. If August is hot and dry, though, Kansas dove hunting will be fantastic.

If dry weather persists, hunting near farm ponds and livestock tanks will be excellent. Waterholes are usually best in early morning and late evening. At midmorning, doves can be found in open farm fields feeding on sunflowers or wheat stubble. Remember that doves prefer open, sparsely vegetated ground. And that goes for waterholes, too. Find one that has a flat, mud bank around it, and you've probably found a popular dove oasis.

The 1988 dove season will open Sept. 1 and run through Oct. 30. Shotguns must have a plug in the magazine to hunt doves, although no migratory bird stamp is required. The daily bag limit is 15, and the possession limit is 30 after the first day. *Miller*

FOR WHAT IT'S WORTH

Inhumane Disasters

by Gene Brehm, audio-visual technician

Much has been written about the inhumanity of hunting and trapping. I must say that I quite agree. Some of the worst predicaments I've gotten myself into have been the direct result of such pursuits.

Take trapping, for example. During my younger days, beaver trapping was an activity that seemed quite challenging. Reading sign and learning the beaver's behavior appeared relatively safe (and quite harmless for most beaver, too). But one day while I was checking traps on the Neosho River north of Emporia, I started across the frozen river on a log jam. Now I'd been crossing at that spot for several days and since the outside temperature was near zero, I felt safe. (What a fool.) I was near midstream when the bottom fell out. I don't remember much of what followed except that when my feet hit the river's bottom, my mind must have disliked the possibilities. The next clear memory is of my body catapulting up through the hole in the ice. It's amazing what adrenalin can do for the spring in your legs. At that point, I decided that trapping was definitely inhumane and assumed hunting would be a much safer sport.

I remember one hunt that was to be a real thrill. I announced to all my relatives that I planned to hunt elk with a muzzleloader in the Colorado mountains, alone. (All my friends had learned to steer clear of me by this time.) One of my brothers commented, with no humor in his voice, "You don't go elk hunting by yourself." So, now of course, I had to go solo.

Everything went well for several days. Just the normal torturous routine of a backpack hunt into a wilderness area. All great fun. But then I made a nearly fatal mistake: I shot a good bull. I remember walking around that magnificent animal and feeling the touch of remorse that most hunters understand. Quickly, though, my mind cleared and what was once remorse for the fallen quarry settled on the real animal in trouble. Me. That mountain of meat and I were five miles from the nearest road. Two days and four backpack trips later, I was able to come to a definite decision: You don't go elk hunting alone. (Actually, I still hunt elk by myself on occasion, but being a wiser man, I now hunt with a bow to reduce my chances of disaster to nearly zero.)

It's been my experience that while pursuing that most inhumane sport of hunting, a person can succumb to great perils. Even when he feels confident he holds all the aces. I recall one coyote-calling escapade that ended in tragedy. I was set up on one of the highest sandhills in Stafford County. (This reduces the chances of being pounced on from above.) Everything was going along just fine until the unexpected happened — a coyote came to my call. He came over a hill no more than 30 yards away. But he was downwind and immediately caught my scent. To get a shot at the fleeing coyote, I had to run to the opposite side of the hill. When I reached it, I saw a beautiful sight. The coyote had to cross 300 yards of open ground to reach cover. Being a serious rifle shooter, I know a person doesn't blast away at a moving target offhand. So I hastily took a sitting position and learned something that will always stick with me — the exact location of one of the very few prickly pear cactus plants in Stafford County. I never fired a shot and it took more than two hours to remove the spines. The next day, I took up wildlife photography. But believe me, therein lies a whole new diary of disasters.

FISHING

KANSAS BROWN BASS

You won't find a lot of smallmouth bass fishermen in Kansas. But that's not the fish's fault. Since it was stocked in state reservoirs in the 1970s, the smallmouth has done very well. And pound-for-pound, it may be the hardest fighting fish that swims in Kansas waters. The smallmouth is just overshadowed by a variety of other Kansas fish. Kansas waters offer good fishing for other more-popular species such as walleye, white bass, largemouth bass, crappie and striped bass. But once you catch a smallmouth, you'll be a fan.

Wilson and Milford reservoirs were the first Kansas waters to receive smallmouths. The fish grew and reproduced but went relatively unnoticed by anglers. Occasionally, a walleye or largemouth bass fisherman would hook one, marvel at the fish's fighting ability, then go on fishing for other fish. That's just fine with me, because I'm a die-hard smallmouth fan, and that leaves more of the brown bass for me to catch.

Smallmouths have also been stocked in other state waters including El Dorado (where the state record was caught), Big Hill, Glen Elder and a few state fishing lakes. The best smallmouth lakes are easily Wilson and Milford. Both have strong populations, with numerous big fish and relatively light fishing pressure. And El Dorado, where the largemouth bass gets all the attention, also has a strong smallmouth population.

Smallmouths prefer cooler, deeper water than largemouths do. Instead of weeds or timber, smallmouths prefer rocks and ledges. They spawn in cooler water than largemouths: around 60 degrees. Look for smallmouths along rocky shorelines, especially those with large rocks or boulders and deep water nearby. In Kansas, the riprap along dams and boat ramps makes excellent smallmouth habitat.

Smallmouths are aggressive feeders, and one of their favorite meals is crayfish. It's no surprise, then, that most of the smallmouths caught in Kansas are caught on crayfish-colored crankbaits. Crankbaits are great in early fall when the fish are in water less than 12 feet deep, but jigs will work better when the fish are deeper.

The old largemouth standby, the jig-and-pig, can be deadly on smallmouths. Try a brown rubber-skirted jig with an Uncle Josh's No. 11 orange pork frog attached. Slowly hopping this combination through the rocks might entice a big smallmouth.

A rubber-bodied grub hooked on a one-eighth- or one-quarter-ounce jig is also a good choice. Try the rootbeer- or olive green-colored bodies. When fishing off the face of the dam, a shad-imitation jig is effective. Smallmouths will readily feed on gizzard shad. Remember to check the regulations at the lake you fish. Many have a length limit on black bass, which includes the smallmouth. *Miller*

OVERLOOKED BASS

Much has been written about the virtues of fall fishing. The most appealing aspects may be that the summer crowds are gone, the weather is comfortable and the fish are active. But one fact about fall fishing that's often overlooked is that older, normally turbid reservoirs clear up and offer great largemouth bass fishing in the fall.

Kansas reservoirs such as Fall River, Toronto, Elk City and others will often fluctuate with inflows during the spring and summer when most anglers are fishing for bass. Because of the water fluctuations, the reservoirs are muddy and offer poor bass fishing. In fact, few anglers even attempt to fish for largemouth bass on these waters, believing that because they haven't caught them in the spring, the fish aren't there. But when the water level stabilizes in the fall and the clarity returns, bass fishing can get hot.

Concentrate your fishing at the upper ends of the reservoir, near the creeks and rivers. This is where the best habitat and structure is often located. Shad-colored crankbaits, spinnerbaits and jig-and-pig combinations are the best baits. And bring your heavy bass tackle. These fish have been overlooked so long that many have reached trophy sizes. *Miller*

NEW WICHITA AREA

Wichita anglers recently gained a new public fishing area at Chisholm Park. The Kansas Department of Wildlife and Parks built the 3-acre pond in cooperation with the Wichita Park Board of Commissioners.

The pond is currently stocked with channel catfish, largemouth bass and other species, according to Doug Nygren, fisheries biologist for Wildlife and Parks. On July 1, 1,300 channel catfish, each measuring 7-10 inches, were released in the pond.

Chisholm Creek Park is at 3238 North Oliver, and the public fishing area is located in the southeast corner. Parking areas and restroom facilities are available. The park is open from sunrise to sunset. All anglers aged 16 to 65 are required to have a fishing license. *Martha Daniels, wildlife information representative*

ISSUES

AGENCY STRUCTURE

In July, Kansas Department of Wildlife and Parks Secretary Robert L. Meinen announced the reorganized agency's new structure. The new plan calls for increased wildlife education efforts and stepped up law enforcement. The plan also reduces the Department's divisions from six to five and reduces the number of administrative regions from six to five.

According to Secretary Meinen, the goals of the restructuring were to provide better public services while smoothly and efficiently combining the two agencies. Limitations of the reorganizational process included limited financial resources, separate locations of the main administrative complex (Pratt) and the office of the Secretary (Topeka) and the need to continue to separate dedicated funding sources of parks and wildlife.

The two former agencies had different and sometimes conflicting missions. A new mission statement will be developed to form a more cohesive agency. A new management concept will also be implemented. The Department of Wildlife and Parks exists to provide resource protection/enhancement and service to the public. Recreation days provided to the public are a primary product. All of the agency's areas will be evaluated to maximize the opportunities provided. For example, in high-use state fishing lakes, park facilities may be developed, and public hunting opportunities may be provided in park areas with low use in the winter.

Major structural changes will occur in the next year, including reducing the number of Department divisions. The new divisions include: Fisheries and Wildlife Division; Wildlife and Parks Law Enforcement Division; Education and Public Affairs Division; Parks and Public Lands Division; and Administrative Services Division. Each division will be supervised by a division chief and regional supervisors. The regional supervisors will report directly to the division chief, significantly shortening the current chain of command.

The Parks and Public Lands Division will assume responsibility for all land under the control and management of the Department. This will include all state parks, wildlife areas, state fishing lakes and other lands. Groups of agency controlled or owned areas will be placed under single managers whenever possible. The staff in each region will include the current park managers, area wildlife managers, maintenance conservation workers, general maintenance repair technicians and various other technicians, clerical and office staff. This will allow the wildlife area manager to call on a variety of expertise represented on the staff. For example, the wildlife area manager would help develop and execute the land and vegetation management plan for a state park, and the park specialist would help plan and develop the visitor facilities found on state fishing lakes.

By having the variety of expertise available on a single management unit, all the Department lands will be better managed, and the public will be better served.

The Fisheries and Wildlife Division will be directed primarily at the management of wildlife and fish on private lands, research and technical analysis, evaluation of fish and wildlife populations, statewide regulatory efforts, environmental services and other functions. The fish and wildlife experts in this division will also provide technical assistance to the Parks and Public Lands Division.

The Wildlife and Parks Law Enforcement Division will be responsible for all enforcement activity in the Department. Some park rangers will be transferred to this division, and park rangers and wildlife conservation officers will be known as conservation officers. A special investigations unit will also be formed. All conservation officers will be actively involved in parks and wildlife education.

The Education and Public Affairs Division will provide a comprehensive program of public education and media relations. A network of conservation education centers will be developed to increase public education. Each regional office will include an information representative from this division.

The Administrative Services Division will continue to assist other divisions, with some of its employees in Topeka and some based in Pratt. The integration of services has already begun to increase efficiency and improve overall operation of the Department. Payroll and personnel functions are being consolidated.

The Department's major reorganization changes will occur soon, but it will probably be 1989 before all changes are finalized. The public should benefit from this more efficient operation. More recreational opportunities will be made available as the Department of Wildlife and Parks steps into the future. *Miller*

DU FIGHTS CORPS

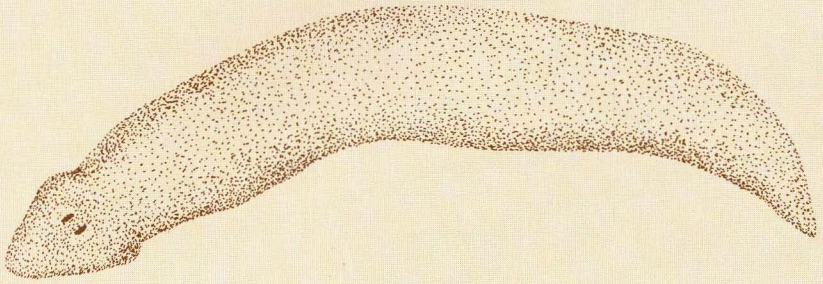
Ducks Unlimited (DU) has voiced its opposition to the U.S. Army Corps of Engineers draining of the Yazoo Basin in Mississippi. One of the most important wetlands in the state of Mississippi, the Yazoo Basin is a critical wintering area for waterfowl in the Mississippi Flyway.

Corps plans, which will cost $700 million to complete, will impact 1 million acres in the basin. According to DU, these projects will create marginal agricultural land at a time when Mississippi is already burdened with more than 90,000 acres of farmland in foreclosure.

DU opposes the extensive destruction of fish and waterfowl habitat and the loss of bottomland hardwoods that the Corps' Upper Yazoo project will cause. Of the Mississippi Delta's original 4.1 million acres of hardwoods, only 400,000 acres remain. The Upper Yazoo project will further jeopardize this resource by removing more than 31,500 acres of bottomland hardwoods. The project will destroy up to 50 percent of the existing winter waterfowl habitat.

The Upper Yazoo project is one part of 50-year-old plan to drain and develop the Lower Mississippi Delta. It does not reflect sound environmental practices, and it flies in the face of current legislation designed to protect wetlands and reduce agricultural surpluses. *Ducks Unlimited*

NATURE



SPLIT PERSONALITY

Hack this creature in two, and each piece grows to be whole again. Slice it twice, and you'll have three of them. Cut off its head, and the tail will grow a new one. The head can grow a new body, too. If you'd chop a hunk out of this strange animal, the missing part would soon grow back.

It lurks under the rocks and bottom debris of Kansas' cooler, cleaner streams. Sometimes they're found in caves, having no eyes at all. These creatures may also inhabit spring-fed ponds, clinging to the undersides of leaves and any other objects that shade them from the sun's penetrating rays.

Dangling a piece of liver in the water, you might attract one, or several, of these creatures. You'd find them hanging from your bait, sucking its decaying juices out with strange, protruding mouths.

Actually, these frightening creatures seldom grow to more than a third of an inch long, and many species can only be seen under a strong magnifying glass or a microscope. Called planaria, they are common in waters of the nation's eastern half. There are many planaria species, most of which are either saltwater animals or parasites. This article considers only a few of the free swimming, fresh water varieties that may be found in Kansas.

Most planaria are elongated or oval flatworms with arrow-shaped heads. Two eyes are generally located on top of the head. The planaria's mouth is usually situated far back from its head, about halfway down the underside of its body. Its mouth also serves as an anus. They range in color from pink to dark gray to almost transparent. The planaria's underside is usually covered with tiny hairlike "legs" called cilia, although some planaria are completely cilia-covered.

Planaria are smart creatures (relatively speaking). Researchers have proven that these tiny animals can learn responses to certain stimuli, and they can master simple mazes.

The most curious trait of planaria is their ability to regenerate body parts. Cut one in two, and each half will become a new animal that is genetically identical to the original one. Dehead one, and the body will sprout a new head, while the head grows its own replacement body. Even when cut into several pieces, a planaria can live by regeneration. Very small body parts may not be able to regenerate complete heads, however, particularly if the pieces come from the rear of the animal's body.

Planaria are commonly studied by college zoology students. They can be grown in shallow dishes or small aquariums, as long as the water is changed every two or three days and the sunlight isn't too intense. They'll eat small pieces of meat, chopped earthworms, crushed snails and other animal matter. They can be collected from local waters or ordered from science supply companies.

Some planaria species can reproduce without mates, using a splitting process called fission. Others form coccoons after mating. The cocoons rupture, and each one releases several young.

Though they require water for survival, certain planaria species are able to withstand dry periods by forming cysts, or rigid sacs, around their bodies. Some are able to swim (being covered entirely with cilia), while others only inch along the bottom.

One species, the blind planaria, was recently proposed as a threatened species in Kansas because it's currently known only to inhabit a Butler County spring. But it wasn't included on the threatened species list because not enough is known about the elusive creature. *Rob Manes, wildlife education coordinator*

CHEYENNE LISTED

The Kansas Department of Wildlife and Parks has filed a petition with the U.S. Fish and Wildlife Service to list the Cheyenne Bottoms Wildlife Area as a wetland of international importance. If accepted, Cheyenne Bottoms will be recognized by the Convention on Wetlands of International Importance.

The Convention was created in 1971 in Ramsar, Iran, when 40 (there are now 51) nations signed a treaty setting wetland conservation as an international goal. The Convention encourages member countries to designate significant wetlands for worldwide listing. Cheyenne Bottoms would be the first nonfederal wetland in the U.S. to be listed. U.S. wetlands already listed include Ash Meadows National Wildlife Refuge in Nevada, units of the Edwin B. Forsythe National Wildlife Refuge in New Jersey, Isembek National Wildlife Refuge and State Game Range in Alaska and the Okefenokee National Wildlife Refuge in Georgia and Florida.

According to the International Shorebird Survey, Cheyenne Bottoms is one of the most important sites in the Western hemisphere for migrating shorebirds. It is estimated that 45 percent of the North American shorebird population stops at Cheyenne Bottoms during migration. The survey further estimates that more than 90 percent of the North American populations of white-rumped sandpipers, Baird's sand-

pipers, stilt sandpipers, long-billed dowitchers and Wilson's phalaropes rest at the Bottoms during migration.

Long known as a top waterfowl hunting area, Cheyenne Bottoms is also a popular birdwatching site with more than 300 species of birds frequenting the area. The Kansas Department of Wildlife and Parks has emphasized management of the area as well as increased public awareness. The Department has been battling water shortage problems as well as budget limitations in its effort to maintain the wetland. To include the public and outside conservation organizations in this project, the Department has spotlighted the Bottoms in the Kansas media. The listing of Cheyenne Bottoms as a wetland of international importance site will promote the area on a national and international level.

According to Larry Mason, Chief of International Affairs with the U.S. Department of the Interior, the petition for Cheyenne Bottoms will be sent first to the Interior's regional office for approval. Then he will recommend submittal to the Director of the Interior. If all is approved, the petition will be presented to the Convention's Standing Committee when it meets in October.

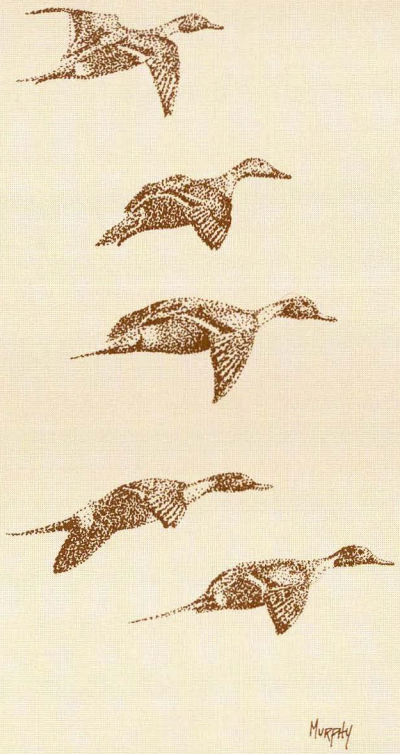
The Convention does not override national or state legislation to protect wetlands, but helps to support that legislation by drawing international attention to threats of serious damage to listed wetlands. So far, no listed sites have been lost, and a number have been saved, partially due to the strong international assistance that the Convention creates. *Miller*

KANSAN FEATURED

Jan Garton of Manhattan was one of seven persons profiled in *National Wildlife* magazine for safeguarding wildlife and the environment. *National Wildlife* is a bimonthly publication of the National Wildlife Federation.

Garton has worked extensively to bring attention to Cheyenne Bottoms Wildlife Area near Great Bend. In 1983, she organized a conference of conservationists and state officials to discuss the area's water problems. She led the way in lobbying state legislatures, who eventually appropriated $75,000 to fund a feasibility study of restoring water supplies to the wetland. It was the first time Kansas had allocated general revenue monies for a natural resources conservation effort. In honor of her work, the Kansas Wildlife Federation named Garton its Conservationist of the Year in 1984.

Garton has stayed active in conservation efforts, especially in drawing public attention to Cheyenne Bottoms. The Kansas Department of Wildlife and Parks has put management of the important wetland as a top priority and will depend on the support of outside organizations and individuals such as Garton. *Miller*



PINTAILS

The male pintail duck is a dapper duck, sporting a bright-white forefront that extends upward to the back of the head. Its tail is its trademark — a pair of long, black feathers called centrals, flanked by six shorter plumes on each side, forming a wedge. The hen is mottled brown, similar in color to female mallards and gadwalls. The pintail is efficiently streamlined, with its small bill and head, long neck, tear-shaped body and trailing tail. The bird's arrow shape helps it cut through the air and also makes it easily identifiable in flight.

While the pintail can't compete with the speed of the canvasback, it certainly takes honors in the long-distance competition. Pintails from the Arctic and Siberia have been picked up on Palmyra Island, 1,000 miles south of Hawaii.

This duck prefers vast, open-water areas to swampland rushes, which is why the Western states are so popular with wintering pintails. The largest concentration of these migrants is found in California's Central Valley, where the birds arrive during the first half of September. *Ducks Unlimited*

DU FUNDING

Since 1985 Ducks Unlimited (DU) has made $288,420 available to the Kansas Department of Wildlife and Parks through the Matching Aid to Restore States Habitat (MARSH) program. MARSH provides funds for wetland acquisition and enhancement to states, which are then required to match the funds. Through the first three years of the program, budget constraints made it difficult for the Department to take advantage of the money allocated. But proceeds from print sales of the Kansas State Waterfowl Habitat Stamp program have qualified Kansas as a no-match state now.

DU's MARSH program has allowed the Department to acquire wetlands and create additional marshes on wildlife areas. Projects that are started or have been completed include the acquisition of 160 acres at the Texas Lake Wildlife Area and work at Marais des Cygnes, Jamestown, Neosho, Mined Land, Copan and John Redmond wildlife areas.

In addition, $51,622 from the proceeds of the state stamp program has been made available for work at Cheyenne Bottoms Wildlife Area.

DU's MARSH program has opened the doors for exciting possibilities in acquiring and developing wetland habitat in Kansas. And the cooperation between the Department and DU will continue as more projects have been approved and more still submitted for approval. *Miller*

NOTES

SIGNS AVAILABLE

The Kansas Department of Wildlife and Parks and *Kansas Farmer* magazine have cooperated in making signs available to landowners. "Hunting by Written Permission Only" signs cost $2 each, or you can purchase three for $5. Send orders to the Kansas Department of Wildlife and Parks, Attn: Kathy Pritchett, Rt. 2, Box 54A, Pratt, KS 67124, or *Kansas Farmer,* 3310 S.W. Harrison, Topeka, KS 66611. *Miller*

WILDLIFE EDUCATION

The Kansas Department of Wildlife and Parks reminds all teachers, librarians and parents that a series of K-12 wildlife education materials is available to all schools. For the first time, a set of the materials will be available to each teacher who requests them. In the past, supplies were limited to just one set of materials per school.

A K-6 curriculum with teacher's guide and corresponding student booklets, a compilation of the "Nature's Notebook" series and audio-visual materials from the free-loan Wildlife Reference Center are available at the elementary level.

A 7-12 curriculum, a compilation of "Nature's Notebook," aquatic education manuals and audio-visual materials from the Wildlife Reference Center are available for the secondary level.

Middle schools have received the 4-12 material, as well as the "Nature's Notebook" series and the reference center catalog.

Check with your school librarian or principal for the location of the materials. If the non-consumable materials have been lost, contact the Department of Wildlife and Parks for duplicates. Materials for out-of-state or personal use are available at cost.

For more information about the Wildlife Education Service contact: Joyce Harmon Depenbusch, Wildlife Education Coordinator, Kansas Department of Wildlife and Parks, Rt. 2, Box 54A, Pratt, KS 67124. *Joyce Harmon Depenbusch*

OGT SIGNS

The Kansas Department of Wildlife and Parks has developed signs that send a message to wildlife law violators. The signs say that sportsmen and landowners in the area will call Operation Game Thief if they see any law violation.

The quality plastic signs are available for $3 each or $5.50 for two. Landowners and sportsmen's groups are encouraged to put the signs up on private property to let poachers know that crimes won't go unreported. The signs may be purchased at Department regional offices or at the Operations office in Pratt. *Richard Harold, assistant chief, Law Enforcement Division*

WILDLIFE ART EXPO

Some of the finest wildlife artists in the Midwest will show and sell their works Sept. 24 and 25 in Wichita. The 1988 Kansas Wildlife Art Exposition, conducted in conjunction with National Hunting & Fishing Day, will take place at Cessna Activity Center, 2744 George Washington Blvd.

It's a great opportunity to begin (or add to) your collection of wildlife art. A variety of media will be represented: paintings, drawings, metal sculptures, wood carvings, handcrafted knives and photographs. The event is free and open to the public. For more information, contact the Kansas Wildlife and Parks office nearest you. *Bob Mathews, assistant chief, Education & Public Affairs*

FALL CAMPING

If you're a camper and usually make it to one of our 24 state parks during the holiday weekends, you probably have visions of lots of people, hot temperatures and activities galore. Usually, the last hurrah at our state parks is the Labor Day weekend in September. After that, park areas are quiet, uncrowded and peaceful.

Fall camping is one of the best kept secrets in Kansas. You'll have your choice of camping sites and all the privacy you want. And September and October usually offer some of the most comfortable weather of the year. Kansas state parks generally stay open and offer full services until mid-October, or until freezing weather hits. After that, the parks are still open, but water and electrical services are shut off.

Fishermen know that fall fishing can be great, and there's much less competition for your favorite spot. And public hunting ground is usually not far from most state parks, so you may plan a hunting outing along with your camping trip. *Miller*

WILDLIFE CALENDAR

If you have an outdoor person on your Christmas list, here's the perfect gift: A KANSAS WILDLIFE & PARKS magazine calendar. The 1989 calendar will feature outstanding color photographs taken by our staff photographers along with tidbits of information about wildlife, hunting, fishing, camping and Kansas outdoors in general.

The calendar will be available in late October and will cost $5 each. Order yours by contacting KANSAS WILDLIFE & PARKS magazine, Rt. 2, Box 54A, Pratt, KS 67124. *Miller*

HUNTING/FISHING DAY

"For the Tradition . . . and for The Fun" will be the theme for 1988 National Hunting and Fishing Day. Sportsmen around the nation will celebrate the event on Sept. 24 this year, recognizing the contributions hunters and fishermen have made to conservation.

Sportsmen's groups in Kansas will sponsor events ranging from open houses to exhibits displayed at local shopping malls.

If you're interested in participating in some of the events planned in Kansas on Sept. 24, watch for notices in local newspapers or contact the nearest Kansas Department of Wildlife and Parks office. *Wildlife Management Institute*

NATURE'S NOTEBOOK

by Joyce Harmon Depenbusch, Wildlife Education Coordinator

WETLANDS ARE NOT WASTELANDS

Contrary to popular belief, wetlands are not wastelands. The image of stagnant, mosquito-infested marshes that should be avoided has long plagued wetlands. Consequently, they have been drained, filled and rearranged to allow agriculture, industry, housing, and businesses to expand. Drought has also caused a reduction in the quantity and quality of wetlands.

Wetlands come in a variety of forms. They vary from cranberry bogs to prairie potholes to hardwood swamps. Some wetlands are wet only during parts of the year. The appearance of the wetland depends on the environmental conditions of the area. All forms of wetlands are essential wildlife habitat. In Kansas, wetlands such as Cheyenne Bottoms are home to a variety of plants and animals. Red-winged blackbirds perched on cattail stalks are a common sight, but there is so much more. Muskrats, mink, ducks, geese, deer, beaver, hawks, pheasants, bald eagles, falcons, bullfrogs, turtles, snakes and salamanders are just a few of the wildlife species living in or near marshes.

Besides being valuable for wildlife, wetlands help people by reducing water pollution and soil erosion, replenishing underground water levels and providing people a chance to see a wild area.

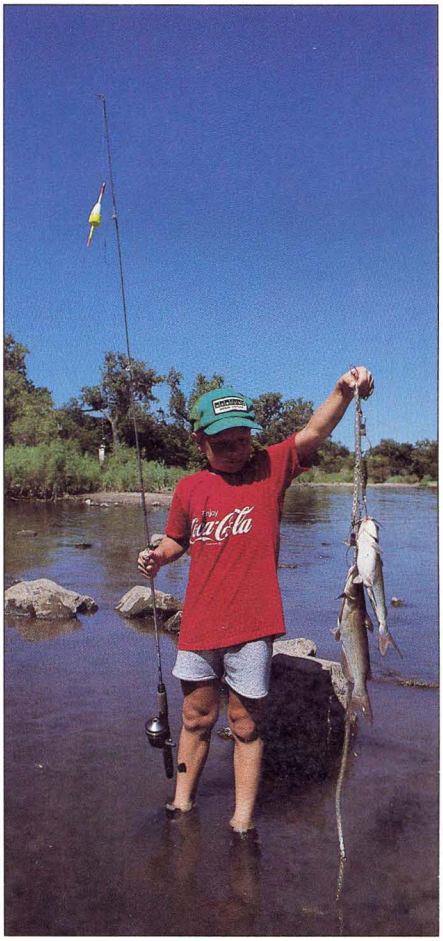
Managing a wetland such as the Cheyenne Bottoms Wildlife Area is a difficult balancing act between having too little or too much water, doing what's best for game and nongame species, trying to please all wildlife enthusiasts and staying within a limited budget. It's not an easy task, but an interesting one.

It is essential that the public be aware of how valuable wetlands are. You can help by telling people, including your legislators, more about this valuable natural resource.

WILDLIFE & WETLANDS

Color the wetland scene. Try to learn more about wetlands and the species that live there. Visit a wetland and see how many wildlife species you can find.

This aerial photograph shows the Yankee Run area of Kanopolis. Shoreline fishing is said to be good here. A youngster (below) raises proof.



Kanopolis State Park

Diamond In The Rough

Kanopolis State Park, Kansas' first state park, is now in its 30th year of operation. This gem still shines.

by J. Mark Shoup
Wichita

photos by Mike Blair

There is the presence of something very old at Kanopolis State Park, something that can be sensed in the mysterious petroglyphic inscriptions etched in the soft Dakota sandstone hundreds of years before the arrival of the first Europeans. Without getting too mystical about it, one feels the richness of life in this land and the cycles imbedded in its geology, history and mankind's often creative struggle to both use and preserve his natural environment.

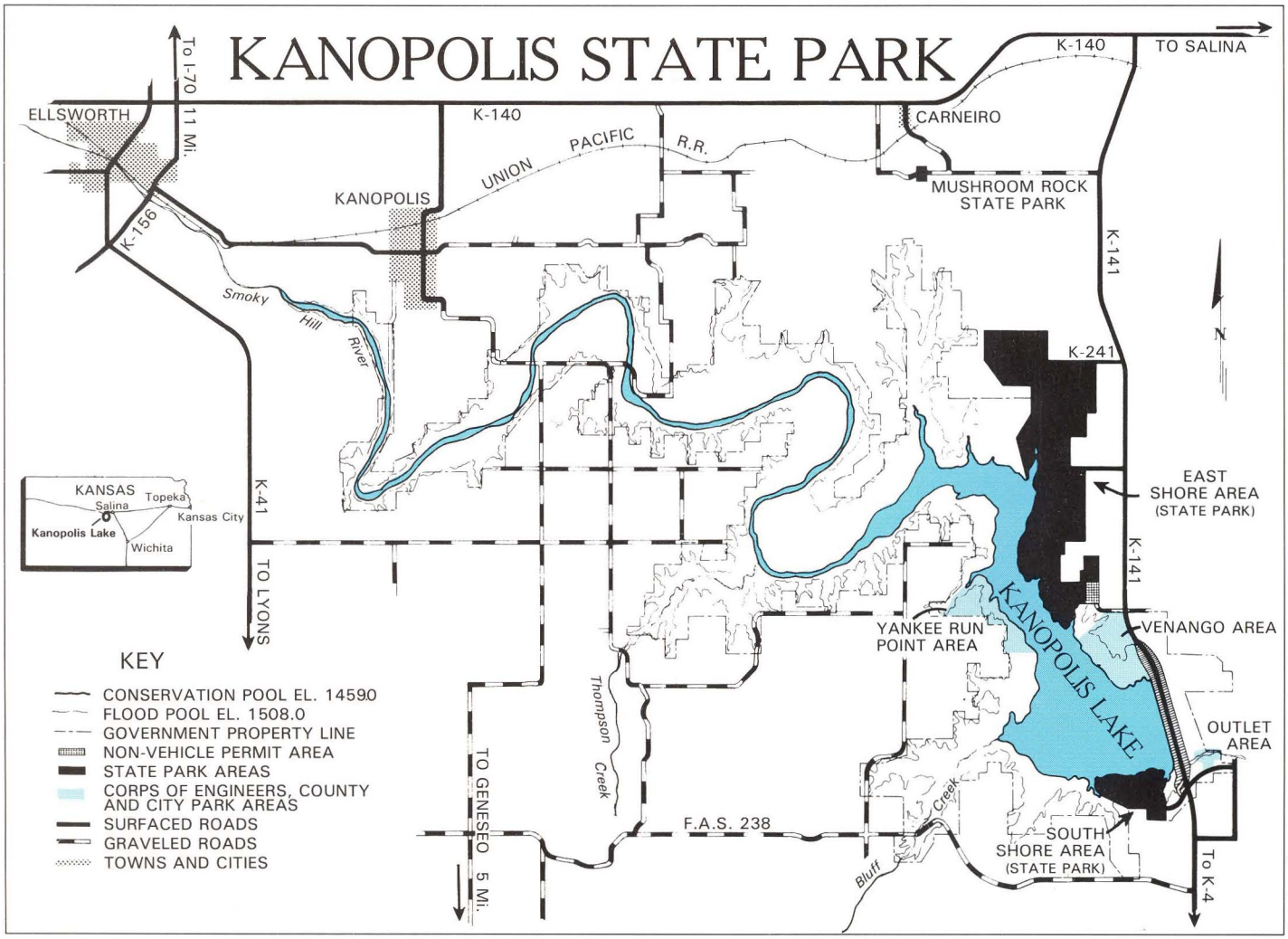
Some 600,000 to 700,000 years ago, glaciers plowed their way into

the northeastern portion of the Kansas, damming the drainage system in the northern half of the state and creating what we now know as the Kansas river system. As a result of this glaciation, a tributary of the Kansas intercepted the Smoky Hill, which had previously flowed south, and carried it to the east. Since that time, the Smoky Hill River has carried waters through this area from the Rockies, reshaping the land and carving 150-foot Dakota sandstone cliffs. These cliffs, in turn, became the natural tablets for the Wichita and Pawnee Indians inhabiting this area as early as 750 A.D. A model of one of these petroglyphs can be seen at the U.S. Army Corps of Engineers office below the dam. Other examples can still be observed by the intrepid hiker willing to explore some of the more than 13,000-plus acres of federal land that surround the lake.

The Pawnee and Wichita, of course, have long since relinquished this territory to other nations, other travelers and tenants of the land. The first European was Coronado, whose expedition came near Lindsborg in 1541. Then came Zebulon Pike, who crossed the Smoky Hill near the present site of the park in 1806. He was followed by John C. Fremont in 1844. Several buildings of Fort Harker, established at the town of Kanopolis in 1871, offer a historical point of interest for those wishing to explore rest stops for the likes of "Buffalo Bill" Cody and Generals Sheridan, Sherman, Grant and Custer.

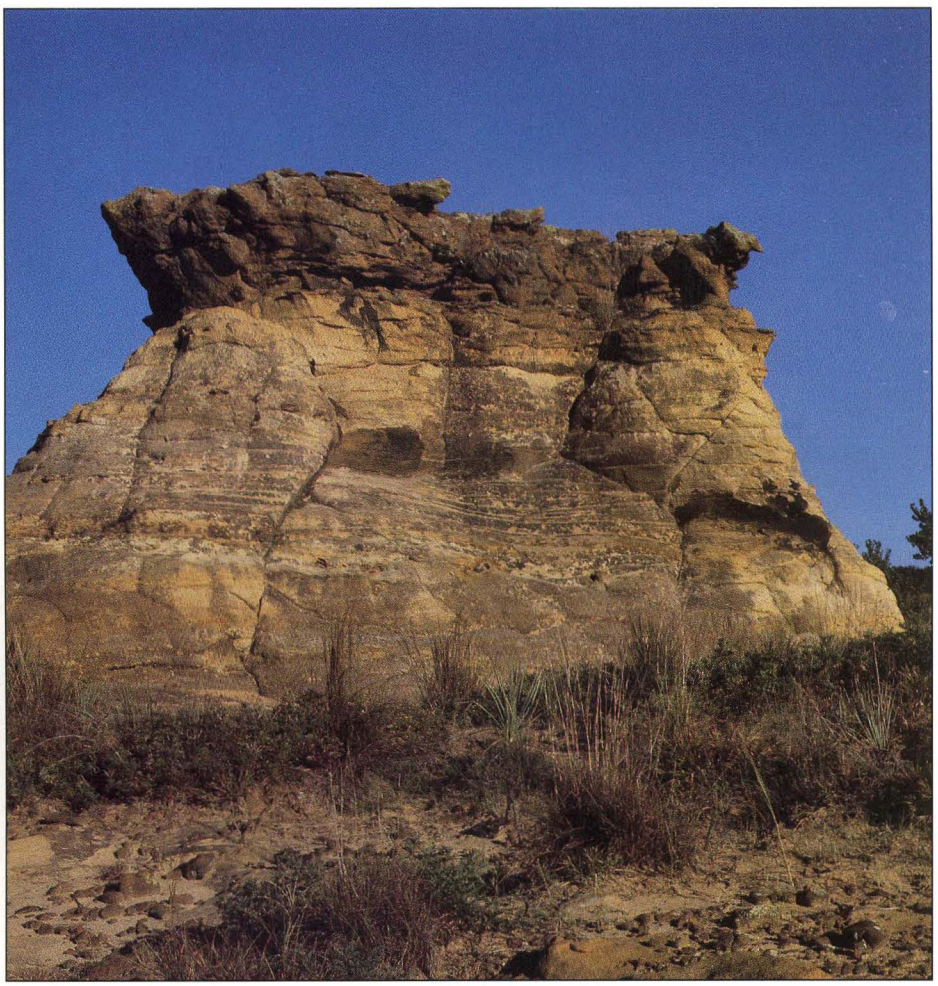
The Faris Caves homestead — hand-carved in the base of 60-foot cliffs from 1888 to 1890 — is one of the most interesting pioneer sites still in existence in Kansas. These caves served as blacksmith shop, milkhouse (complete with natural spring), and schoolroom for the Faris family and other early settlers. Petroglyphs rise above the site, perhaps telling of the arrival and demise of earlier tenants of the land. Guided tours of this area can be arranged through the Ellsworth County Historical Society.

By the time the 20th century was well under way and this country had begun to pull itself out of the Great Depression, the concerns of agriculture and flood control had to be addressed. With prosperity came greater emphasis on recreational land use, in turn creating new interest in conservation. On Dec. 29, 1940, ground was broken on the Kanopolis Reservoir Project. Although work was halted in 1942 because of World War II, effort resumed in July of 1946. Sufficient progress had been made by October that, according to Corps of Engineers documents, "a large volume of water was stored in the reservoir during a flood, thereby preventing an overflow at Salina."



Kanopolis State Park has plenty of picnic pavilions to accommodate your family and friends.

Park sites to be seen: its prairie dog town, rugged beauty, and motorcycle club track.



The project was completed in early 1948, and on May 30, 1959, Gov. George Docking dedicated Kanopolis Reservoir and 1,915 acres of adjacent land as the first state park in Kansas.

Naturally, many people today are attracted to this area because of the lake. Its 41 miles of shoreline are mostly fine sand and rock. The 3,815-acre multipurpose pool plus three boat ramps and one low-water ramp provide ample entertainment for the water sportsman. Fishing, sailing and water skiing are very popular. Most summer days find the beaches and parking lots brimming with activity.

Picnic tables, open-air shelters, both primitive and full hook-up campsites, water, R.V. dump stations, toilets and bathhouses can be found on both north and south sides of the lake. Grills and fire rings are provided. There's even a friendly town of black-tailed prairie dogs near the east shore bathhouse. Says park manager Kurt Reed: "We try to give campers the flexibility to find a campsite that personally appeals to them." Extended stay permits of up to 14 days are also available.

Reservations can be made for either of two shelter houses overlooking the lake. Both shelters have large fireplaces and accommodate more than 50 people each. Both sides of the lake have amphitheaters. For airborne travelers, there is an airstrip on the east shore, which annually hosts the Kansas Flying Farmers Convention. (Reed advises anyone wishing to use this 1,800-foot strip to brush up on soft, short-field landings.)

Bill "Muff" Barrow's Tower Harbor Marina provides a variety of facilities for boaters and campers, including docks, a gas stop, a market, and a new service and repair shop for boats and motors. Certified mechanics are on hand, and boat sales and auto parts are available. From April 1 through Oct. 21, Muff also provides service to a number of mobile home leases near the marina.

The marina sponsors an annual mud volleyball and horseshoe tournament in July, culminating in a Saturday night street dance. With the ball diamond and beach nearby, this July weekend usually sends visitors home tired and happy.

Boating isn't the only motor sport to be enjoyed at Kanopolis State Park. Without having to purchase a park permit, motorcycle enthusiasts can take advantage of the three-eighths mile Engdahl Race Track. The track is oiled, virtually dust-free, and encloses two spring-fed fish ponds for the angler to enjoy between heats. The track is operated by the Salina Coyotes, the fifth-oldest chapter in the American Motorcycle Association. Four or five races are held per year. Sixty to 75 riders per day compete for prizes, trophies and Kansas Motorcycle Sportsman's Association points. Classes include TT scrambles, mini-class, 125cc, 250cc, 500cc, open motor, A.T.V., and "over 30" and "over 40" on any bike. National championships were held here in 1977 and 1980.

For the naturalist, Kanopolis reveals one of the richest varieties of landscape and wildlife anywhere in the state. According to Corps of Engineers ranger Mike Butler, diversity is this area's greatest asset. The lake is surrounded by miles of valleys, canyons, cliffs, caves, buttes, mounds and upland prairie. Fremont's clematis, evening primrose, wild rose, sunflower and yucca are among the many wildflowers that paint the landscape. Cottonwood, oak, elm, Osage orange and hackberry are in abundance along the numerous springs and waterways around the lake. State wildlife biologist Jim Hays oversees much of the continuing introduction of woody vegetation, with an emphasis on nut-producing trees. The result is an excellent mix of food and cover timber for wildlife.

As you might expect, this habitat supports an abundance of game as well. Hunters on the federal land around the lake find good numbers of quail, pheasant, greater prairie chicken, turkey and deer. For the birdwatcher, meadowlark, dickcissel,

Kanopolis has an abundance of prairie wildflowers that provide color throughout the season.

A group of flying farmers meets annually at Kanopolis. About half a dozen Kansas farmers take advantage of the park's grassy airstrip.

brown thrasher, cardinal, bluebird and northern oriole are only a few of the many bird species in the park. Bald eagles winter here, golden eagles are common, and osprey and snowy owls have been reported. Muskrat, beaver, coyote and bobcat also thrive.

Much of this landscape and wildlife can be observed in a single hike up Horsethief Canyon on the Buffalo Track Canyon Natural Trail. Hikers can lose themselves in nature here, surrounded by the often stunning, often simplistic beauty of the rugged prairie cracked open by springs and beaver ponds, enclosed by cliffs and caves, eagles and hawks whistling in the wind.

If all this were not enough for the naturalist, Mushroom Rock State Park is only a few miles to the north. A significant landmark for both native Americans and white men (Kit Carson called it his "favorite little place"), the park boasts several unusual mushroom-shaped rocks, some as large as 27 feet in diameter. The mushroom "caps" of hardrock are balanced on softer pedestals and were created by eroding Dakota sandstone. Picnicking and toilet facilities are provided.

Due to years of erosion control and a comprehensive Water Level Management Plan, the water at Kanopolis is clearer now than ever, says state fisheries biologist Bruce Zamrzla. This water clarity adds to the delight fishermen experience on one of the finest white bass and walleye lakes in the Midwest. Zamrzla says that the whites are "normally very large," up to 4 pounds. Walleye, which grow well in these waters, are the second-most numerous species. Crappie are abundant in season, and channel catfishing can be good. The wiper population, first stocked during 1981-1982, is beginning to establish itself. Catches in the 8- to 12-pound range have been reported. Shoreline fishing is good off the dam, Bolt's Bluff, Yankee Run, and from Kimball's Point to Loder's Point. Good icefishing is also available to winter sportsmen, according to Zamrzla.

Three freshwater ponds in the park complement the fishing in the lake. The South Shore area has a 4-acre kids' pond where a Father's Day fishing tournament and kids' fishing clinic are held each year. In the fall, this pond, the lake outlet and the creek in the seep wells are stocked with rainbow trout.

The future looks good for fishing at Kanopolis. High water in 1987 created grassy vegetation and other cover, making an excellent nursery for spawning and protection for smaller fish. A smallmouth bass stocking has been planned for the lake's tremendous rock banks.

Experts seem to agree that Kanopolis is an excellent fishing lake. Zamrzla calls it "a major draw" because fairly large fish can be caught year-round. He adds: "I have never seen a year when there was not good fishing of some kind." Of 1988, Muff Barrow reports: "Fishing has been great. I've never seen the boat ramp so full." Park manager Reed goes a step farther, calling 1988 at Kanopolis "the best fishing year I have heard of for Kanopolis."

If Kanopolis is a great park today, look for it to get even better. Road resurfacing and building rejuvenation projects are under way. Silt removal and riprap construction projects demonstrate the on-going commitment to erosion control. Wildlife habitat should continue its present growth through the establishment of more native grasses, trees, wildflowers and forage. Game and nongame populations are on the rise and will most likely continue to increase as the development of more Conservation Reserve Program land begins to complement Department of Wildlife and Parks and Corps of Engineers projects. All efforts are directed toward conservation and re-establishment of the natural Kansas landscape.

Life is recycling itself in the rugged landscape in and around Kanopolis. The endless patience and energy of the Smoky Hill seem to be manifested in the efforts of these new tenants, charged with balancing the needs of man with the needs of the earth. Those needs don't seem to be at odds here, and that's the enduring attraction of Kanopolis State Park — what makes her, like all natural beauties, a diamond in the rough. W&P

The author, who grew up in Larned, is an avid outdoorsman.

Fencerows

They crisscross the state, and most importantly, fencerows provide a home for many species of wildlife.

by Mary Kay Spanbauer
Wildlife Information Representative
Kansas City

Thousands of miles of fencerows crisscross Kansas. The vegetation associated with these fencelines is extremely valuable to wildlife, providing food and cover habitat. In Kansas, where 95 percent of the land is devoted to crops and livestock production, fencerows often constitute most of the wildlife habitat on the farm. Unfortunately, the value of fencerow vegetation to wildlife is often overlooked. The modern trend has been to remove this valuable cover.

As Kansas was settled, fences began to spring up across the countryside. Built to delineate property boundaries and to keep livestock in or out, fences were constructed

Old stone fences, with their attendant vegetation, were (and remain) attractive to many wildlife species.

with whatever materials were available. Split-rail and log fences became common in eastern Kansas. In central and western Kansas, however, settlers used limestone to build 4- to 5-foot fences. Farmers put in "living fences" of Osage orange, other shrubs, trees, vines and forbs in areas with adequate water and fertile soil.

Early fences provided wildlife with several types of cover. Wooden rail and stone fences with their attendant vegetation were attractive to many wildlife species. Perhaps the biggest boost to wildlife came with the planting of the living fence. These fences provided valuable wildlife habitat.

The real fencing revolution on the Kansas plains began with the development of barbed wire. Although patented in 1868, it wasn't until the mid-1880s that barbed wire became widely available and affordable. Barbed wire offered landowners a quick and efficient way to fence their property. Unlike earlier fences, barbed wire was useless to wildlife unless vegetation grew up in the wire.

As agricultural technology advanced and machinery became more efficient, the small family farm began to disappear. Average farm size doubled from 1940 to 1975. Many of the trees and the fences with their associated vegetation were torn down to consolidate crop acreage. Fencerow-to-fencerow farming became a popular practice in the 1970s as high crop prices gave farmers an incentive to put more land under the plow.

These expanded agricultural practices began to take their toll on wildlife. Conflicts developed between agricultural needs and wildlife and other natural resources. Wildlife that had thrived during the initial agricultural development began to show signs of decline. Even the resilient pheasant began to feel the loss of permanent habitat.

Today Kansas has many different fences and fencerow habitats. Most of the remaining fences consist of 100-year-old stone walls, electric fences, hedgerows and barbed wire. Fenceline vegetation varies across Kansas depending on geographic characteristics and climatic conditions. Fencerow habitat can usually be separated into three broad categories 1) herbaceous — grasses and forbs 2) herbaceous with occasional shrubs and trees 3) continuous shrubs and trees.

Eastern Kansas has all three types with a predominance of shrubby fencerows. Fencerow habitat differs in traditionally treeless western Kansas. Fencerows there usually consist of grass with few shrubs and trees. A unique type of fencerow occurs in western Kansas, where blustery winds blow tumbleweeds into woven wire fences. These tumbleweeds lodge in the fence, forming a fenceline of scrubby vegetation. These self-made fences provide decent cover for wildlife and pose few problems to the landowner.

An unusual type of fencerow habitat resulted from disagreements between neighboring landowners, often when a boundary dispute existed. Each landowner would erect a separate fence — anywhere from a few feet to several yards apart. These so-called "spite" or "feud" fences provide an excellent area for wildlife. Sometimes used to drive cattle to and from the range, these fences, when left undisturbed, provided travel lanes and other cover needs for wildlife.

Mike Blair photo

Ring-necked pheasants are just one of many species that are drawn to fencerows habitat. Bobwhite quail and cottontail rabbits, for example, also seek shelter in fencerows.

Fencerow habitat is often thought to be insignificant because it's long, relatively narrow and doesn't appear to cover a large area. But these fencelines with their associated vegetation provide critical travel lanes close to food, nesting and refuge areas. Deer and other wildlife use travel lanes as escape cover to flee from disturbances.

Fencerow habitat gives edge-loving wildlife a variety of nesting areas, loafing cover, protective cover and food. Fencerows provide brushy winter cover for game species such as pheasant, quail and cottontail rabbits. An Iowa study documented bird usage of fencerows. The study indicated pheasants and quail heavily used fencerows with scattered trees and shrubs in spring and fall, and fencerows with continuous trees and shrubs in the fall. These gamebirds were often the highest number of any bird species present. The study found that 62 different species, gamebirds as well as warblers, sparrows, woodpeckers and other nongame birds, used fencerows during the spring, summer or fall. The researcher reported that without fencerows the total number of species in a given area could be less than 10.

It's hard to estimate the loss of fencerows statewide, but landowners as well as professionals acknowledge it is substantial. It's not always apparent that fencerows are important to wildlife because of the linear nature of fencerow habitat. But according to one researcher, when a small section of fencerow is removed and this action is repeated throughout the region, enough habitat is lost to cause a significant reduction in wildlife.

So why are we losing fencerows? A number of reasons exist, but it's usually a matter of economics. Economic pressures on today's agribusinessmen cause them to continually develop more land. This causes encroachment

into marginally productive areas such as those adjacent to fencerows, even though returns are often minimal. Though all types of fencerows are being destroyed, we're probably losing hedgerows at an accelerated pace.

Today most remaining fencerows are intensively managed. Unwanted vegetation receives an array of herbicides. In cattle regions of the state, fenceline grazing significantly impacts fencerows, making them unsuitable for wildlife. Newer fences such as the electric fence are being erected. This allows the farmer to graze or work the land right up to the fencerow, in many cases right up to the road. Fencerow-to-fencerow farming has evolved into sectionline-to-sectionline farming in western Kansas.

Few will dispute the value of hedgerows to wildlife. But in Kansas a real problem of moisture and nutrient competition between the fenceline vegetation and adjacent crops does exist. Hedgerows will occasionally sap moisture and nutrients from adjacent cropland, which can result in reduced yields. However, there is now an effective solution to the problem: root plowing.

Root plowing involves severing the hedgerow lateral roots with a heavy-shanked chisel about 15 feet from the hedge trunks. Once severed, the roots no longer compete for moisture and nutrients. The Kansas Department of Wildlife and Parks has more than 50 root plows throughout the state, available on a free-loan basis to all landowners. Contact the nearest Wildlife and Parks office for more information.

Yield increases of up to 240 bushels have occurred adjacent to one mile of hedge that was root plowed in the dry summer of 1980. Even during wet years, yield increases of 25-30 bushels per half mile can be realized. Operational costs of rootplowing are minimal, about $25 to treat a half-mile of hedge. According to those who have used the plow, it's easy to use and doesn't pull the tractor.

Most hedgerow roots lie in the top few feet of soil. Two passes with the equipment is recommended for effectiveness; the objective is to dig a trench at least 2 feet deep. This is also a good time to cultivate over the rootplow furrow to keep the hedge from suckering (sending up new hedge growth). Check with local authorities for pipelines and buried cables before using the plow.

Some landowners recognize the importance of fencerows to wildlife. Merton Ikenberry of Gove County farms about 5,000 acres and realizes that wildlife is especially dependent on fencerows in western Kansas. He knows fencerows are valuable, especially to birds, because they provide edges and key permanent cover. Ikenberry has noticed a significant decline in fencerows in Gove County in the last 15-20 years but has no doubts that wildlife and agriculture can coexist successfully. An avid hunter, he believes that with a little bit of effort, landowners can really help wildlife. Ikenberry, who uses a root plow in combination with other wildlife practices on his land, has noticed an increase in wildlife where he provides permanent cover.

Ikenberry also relays a philosophy held among some landowners about fencerows. Farmers detest weeds, and fencerows attract weeds.

"I'm sorry to say we want everything clean; I know this adversely affects wildlife," says Ikenberry. "And while wildlife may need the weedy areas, the farmer necessarily doesn't." This clean-farming philosophy has been around since the 1930s and is a significant cause of fencerow destruction. Vegetation on fencelines is removed to give farmlands a neat or clean appearance. A study done in Ohio in 1945 found that farmers would leave fencerows where possible if they believed they wouldn't be considered a poor farmer.

There are several advantages to leaving fenceline vegetation. According to Randy Rodgers, the Department's small-game project leader, what isn't always realized is that fencerow vegetation retards snow movement. This allows 80 percent to 90 percent of the moisture to soak into the ground for next year's crops. In areas that receive little moisture, snow accumulation is one of the best ways for getting water into the ground. Fencerow vegetation also reduces wind erosion of soil. In addition, the decrease in wind causes a decrease in transpiration, resulting in increased soil moisture savings. Rodgers believes that strategically placed fencerows contribute to higher crop production, despite the acreage lost to fencerow vegetation.

> "...A thing is right when it tends to preserve the integrity, stability, and the beauty of the biotic community. It is wrong when it tends otherwise."– **Aldo Leopold**

Another misconception of fencerow vegetation is that it harbors harmful pests. A USDA bulletin compared the relative wildlife population per mile in a sod fencerow versus a shrubby fencerow. The shrubby fencerow had a significant (one-third) decrease in the number of insects considered harmful to crops while the number of beneficial insects increased 40 times. In addition, the number of beneficial mammals (which feed upon insects) increased 3½ times in the shrubby fencerow and breeding birds (also insect-eaters) increased 14 times.

A return to grassy and woody fencerows benefits wildlife on the farm. When fencerow habitat is marginal, improvements can be made. There a several ways to improve or even develop fencerow habitat to make it more attractive to wildlife; these methods have little or no impact on agricultural practices.

One way is to increase the vegetation diversity and provide more edge. This can be accomplished by adding a variety of vegetative types and widening the fencerow. Larger fencerows provide a greater potential for variation in vegetative structure. Most researchers found that the wider the fencerow, the better for wildlife because it increased the plant diversity and makes the shelter more predator-proof.

Planting shrubs such as autumn olive, honeysuckle, chokecherry, plum and fragrant sumac provide excellent food and cover for many wildlife species. Permanent borders such as those between cropfields can be enhanced by planting two rows of shrubs for 50 feet and then planting 200 feet of native grass such as bluestem or switchgrass. Alternate this sequence along the entire length of

the fenceline. When the fenceline is between range and cropland, a row of red cedar on the range side and a row of high wildlife shrubs on the cropland side will take only 20-25 feet along the field edge. When possible, add a strip of clover or other legume along the field fence. These strips provide food and cover for wildlife on the less productive edges of the field and as an added benefit protect turnrows and field travel lanes from erosion.

Center-pivot irrigation dealt fencerow habitat a severe blow. Thousands of miles of fencerows were torn up to accommodate the big machinery required for the massive setup. But ironically, most fencerow management today in western Kansas is done on center-pivot irrigation lands. The 7-acre corners left by a center pivot are ideal for fencerow development. Shrubs planted along the fencelines, complemented with native grass plantings, provide invaluable wildlife habitat. If your cattle graze in the stubble, fence the corner to keep them out.

While barbed wire originally was a nemesis for wildlife, it can be used to benefit wildlife. By fencing off a pasture corner or field, you can provide undisturbed grass and shrubby areas for wildlife. Run the fence diagonally from the eight to 10 fence posts from each corner. This creates a triangular enclosure of fencerow habitat. Allow the area to grow wild, or plant native grasses and shrubs.

Fencerow management seems to be at least partially dictated by traditional practices rather than sound biological principles. Current farming practices threaten existing fencerows. But you can incorporate wildlife needs into agriculture land-use plans. Fencerow management is just one small element. Wise management of fencerows benefits more than wildlife; it also plays a major role in soil and water conservation.

Short-term economic gains can no longer dictate land-use practices. Aldo Leopold, the founder of modern wildlife management, recognized this more than 30 years ago: "Quit thinking about decent land-use as solely an economic problem," he said. "Examine each question in terms of what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and the beauty of the biotic community. It is wrong when it tends otherwise." W&P

Fencerows, CRP & The Root Plow

Mike Blair photo

The trend of removing fencerows and permanent vegetation for production of agricultural commodities may now be reversing due to the 1985 Food Security Act (Farm Bill). Two conservation provisions of the act "Sodbuster" and "Swampbuster" prevent conversion of grasslands and marshlands to cropland acres.

Under Swampbuster, converting natural wetlands to produce agricultural commodities after Dec. 23, 1985, (the date the bill was signed) means losing USDA program benefits the year the commodities are produced.

Sodbuster applies to highly erodible land that was not used for crop production during 1981-1985. To plant annual crops on this land, there must be an approved conservation program to maintain eligibility for USDA program benefits.

The Conservation Reserve Program (CRP) provides for returning highly erodible land back to grasses, trees and shrubs. Under 10-year contracts, the federal government makes annual rental payments to landowners who comply with the contract. There are currently about 2.5 million acres enrolled in this program in Kansas.

Conservation Compliance requires that highly erodible land must be managed under an approved conservation plan by Jan. 1, 1990. To remain eligible for federal farm benefits this plan must be fully implemented by Jan. 1, 1995.

These provisions improve or save wildlife habitat, thus benefiting both game and non-game wildlife populations across the state. — *Don Dick, Wildlife Management Supervisor*

A landowner using a root plow (at left) is able to sever windbreak tree roots that would sap moisture from adjoining cropfields. The Kansas Department of Wildlife and Parks has more than 50 root plows available to the public.

Gallery

by Mike Blair

Caught in the open, a pond crayfish assumes a defensive posture. Claws raised, the crustacean appears formidable but is actually an easy meal for any passing predator. Shot with 105mm, f/5.6, 1/125.

"Crawdads," as crayfish are often known, are common in streams, ponds and sloughs. Crayfish are a favorite prey of many gamefishes. Underwater, crayfish escape their enemies by swimming backward in powerful spurts. Shot with 105mm, f/16, 1/60.

Crayfish are able to breathe both in and out of water, at least long enough for short migrations to more suitable habitats. Where standing water can't be found, crawdads may burrow to moisture, leaving behind a telltale chimney of mud. Shot with 105mm, f/11, 1/125.

Clown Prince Of The Arkansas Basin

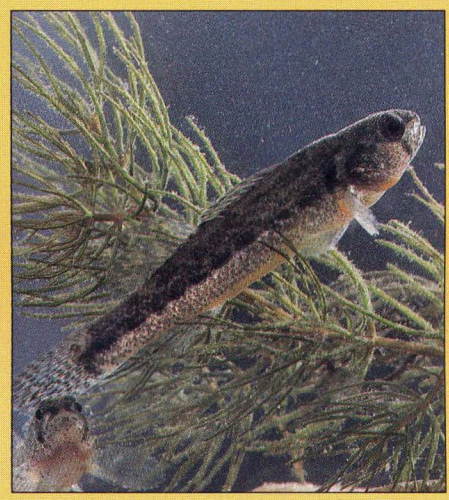
Kansas constitutes the primary range of the threatened Arkansas darter. A look at this circus clown.

by Larry Zuckerman
Aquatic Ecologist
Pratt

When you think of Kansas wildlife and want to name a colorful group of animals that's diverse, elusive and sometimes rare, you might think of birds. Maybe warblers, for example, or even hummingbirds. When you think of fishes in Kansas, you may list the mighty striped bass, largemouth bass or those species tasty to the palate — the channel catfish, crappie and walleye. But there is a group of small fishes in Kansas that rivals the beauty and variety of the warblers — the darters. Finding one 6 inches or longer might be considered a trophy. The darters are in the perch family with their larger cousins: walleye, sauger and yellow perch. In Kansas streams, there are 17 kinds of darter including the threatened Arkansas darter (*Etheostoma cragini*) and eight classified as Species In Need of Conservation (SINC).

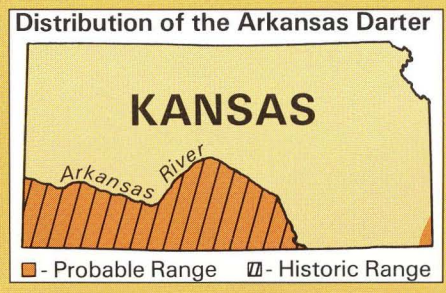
The male Arkansas darter, which looks like a circus clown, sports a brilliant breeding suit of orange and black and wedge-shaped marks below the eyes. These bright colors and patterns are used to attract the less colorful females.

Arkansas darters are endemic, or historically restricted, to the Arkansas River drainage in Colorado, Kansas, Oklahoma, Missouri and Arkansas. In Kansas, healthy Ark darter populations are found only in small streams and springs south of the Arkansas River and in the Spring River-Shoal Creek drainage of Cherokee County. Kansas constitutes the Ark darter's primary range.



Mike Blair photo

The Ark darter's primary range is south of the Arkansas River drainage.



Patti Murphy map

Arkansas darters prefer shallow, clear springs and headwater streams with sand and gravel bottoms. They occupy stream positions with little or no current and are most often found in aquatic vegetation such as watercress.

Arkansas darter populations are rare throughout the species' natural range. In Kansas and Colorado, Ark darters are listed as threatened, and in Oklahoma, as endangered. Much of their habitat in Oklahoma has been flooded by large reservoirs. Small ponds are often constructed at springs and in headwater streams, destroying this little fish's habitat. The darter's biggest threat in Kansas and Colorado is the continual depletion and pollution of groundwater, which supplies the clear spring flow. Ark darters fare badly when their springs become turbid or when predators are introduced and vegetative cover is reduced. Although Arkansas darters are found in several Kansas streams, the species is vulnerable to changes in the groundwater.

But all is not doom and gloom for this clown prince of springs. In Colorado, the U.S. Fish and Wildlife Service has successfully established a refuge for Arkansas darters on the Fort Carson Army Base. Ark darters thrive in a watercress-choked artificial spring-creek that's fed by a well pump. In fact, the darters share their well-guarded home with another rare fish, the greenback cutthroat trout, which resides in the downstream lake.

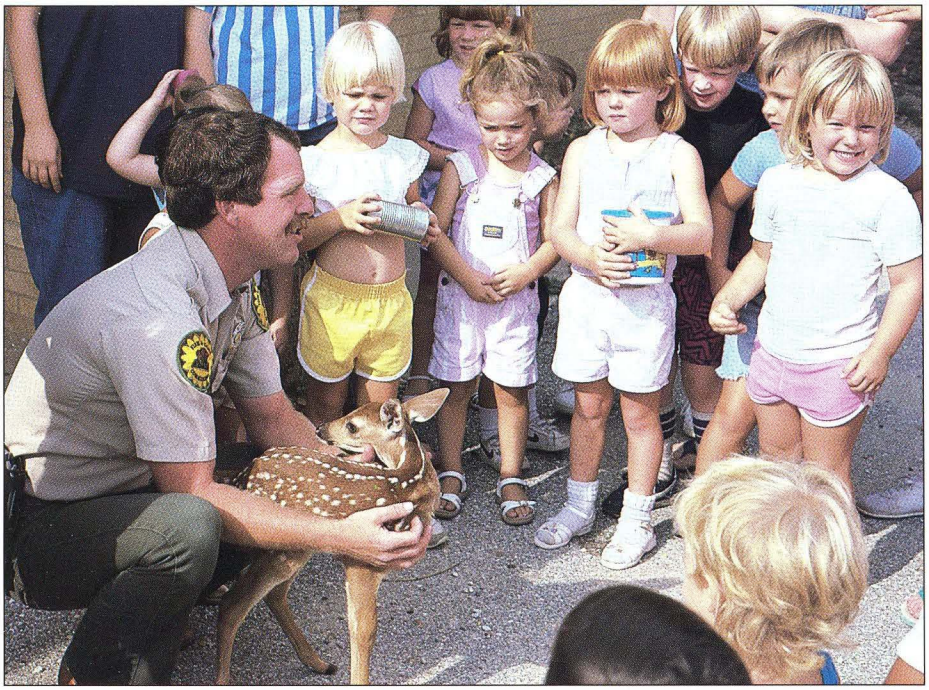
Since the Ark darter is protected under the Kansas Nongame and Endangered Species Conservation Act of 1975, the Kansas Department of Wildlife and Parks guards its welfare by protecting known populations from potentially destructive development (bridge and dam construction, for example). Future projects, funded in part by the Chickadee Checkoff program, will try to locate new populations, rehabilitate and protect existing springs and create preserves for this rare little fish. W&P

WILDTRUST

The Future Of Kansas

by Bill Hanzlick
WILDTRUST Coordinator
Topeka

WILDTRUST, a donation program of the Kansas Department of Wildlife and Parks, solicits and coordinates contributions of land, personal property, services and funds to the Department for the state of Kansas. Donors range from schoolchildren giving a dollar to Gulf Oil Corporation, which has donated more than 8,000 acres of mined lands in southeast Kansas. The WILDTRUST donation program allows you several ways to save our natural heritage — the great Kansas outdoors. WILDTRUST donations fall into five categories:



Buffalo roam on the Maxwell Game Refuge (on preceding page) thanks to a Kansan who donated property to preserve the native wildlife and prairie grass that covers the area. Other WILDTRUST donations have funded conservation education programs (left) and wetland habitat projects that benefit shorebirds (right).

LAND

Land donations have been for river access, outdoor education, public hunting and fishing, a big-game refuge, a fish hatchery and a state fishing lake, to name a few. A 100-acre land donation in Cowley County is pending, and numerous wills and estates list the Department as the recipient of the land when the owner dies. Land may be given outright or donated in increments over several years.

Land donors can reserve a life estate wherein they pass title to the state but occupy the property until death. Landowners may even grant the state a Conservation Easement that preserves the natural or undeveloped character of the land while retaining private ownership. Land donations take many forms and can provide big tax savings to the donor.

Private land donations are a vital element in preserving our natural resources, which are important for recreational and aesthetic purposes.

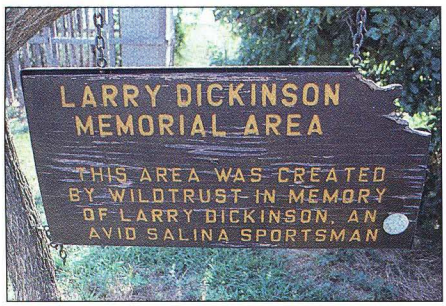
PROPERTY

Donations of equipment, tools or materials for use in specific projects are needed. Some examples include work boats for fisheries, plows, wildlife films for conservation education, a grass drill, rods and reels for youth fishing clinics, two-way radios, corn for captive goose flocks and fence materials, to name just a few gifts that have been donated.

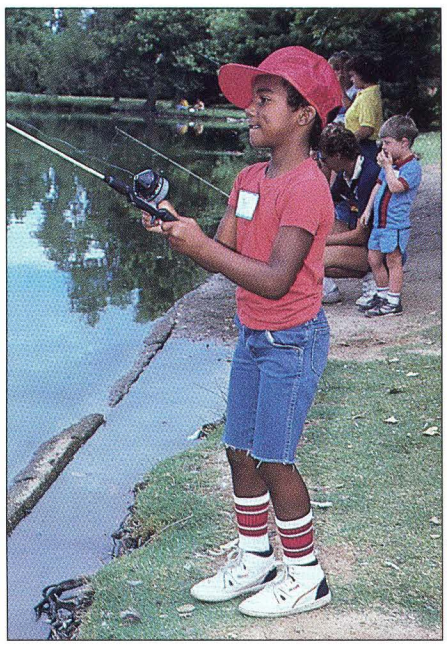
Many property donations result from contact between the donor and a field employee. A personal property form is needed for inventory and tax purposes (to record such donations). Donors include bass clubs, banks, oil companies, trucking firms, county commissions, tackle manufacturers, sportsman groups and concerned individuals.

SERVICES

Donations of such services as storage facilities for trees and shrubs, office rent, harvest of forb seed, slip rent for patrol boats and hauling gravel and pipe are only a few examples of services provided. Many of these services were donated because a Wildlife and Parks employee had a need and took the initiative to fill it.



Some property donations have been honored with a permanent sign (above). Cash donations have made fishing accessible to Kansas youths (below).



Mike Blair photos

Your WILDTRUST donation of money can be applied to the state's ongoing bluebird restoration project . . .

MEMORIALS

Memorials are established when family and friends donate money to commemorate a sportsman. The donor designates how he or she wants the money used. A few such examples include establishing a natural trail on a fishing lake, wild turkey and giant Canada goose restoration projects, hunter-safety programs, commissioning of a wildlife painting, establishing a walnut grove on public land, to name a few projects. Memorials are responsible for creating and subsidizing the present WILDTRUST donor recognition program.

FUNDS

Gifts of money are as varied as the

. . . or toward maintaining and preserving critical woody habitat that redheaded woodpeckers need to survive.

How WILDTRUST Can Benefit You Now

Tax laws have been undergoing changes in recent years, and several deductions have been eliminated. Changes in tax structure and their effect upon contributors will continue, so you may want to contact an attorney or accountant. The possibility of having insufficient deductions to itemize may exist, but a donor can change this situation by making a larger-than-usual gift in one year. This enables the donor to itemize not only charitable gifts but other expenses as well.

CASH

Gifts of cash and certain property are deductible (up to 50 percent of one's adjusted gross income in any one year) and any additional donations may be deducted over a five-year period.

REAL ESTATE

Real estate donations (if the property has risen in value and has been owned for a year) may allow a federal tax deduction for its full value, thus avoiding the capital gains tax. Donors of property that has decreased in value are often encouraged to sell, take a capital loss and give the proceeds of the sale. Gifts of real estate and securities have similar tax benefits.

LIFE INSURANCE

Donors can name WILDTRUST as a beneficiary of a life insurance policy, assign irrevocable incidents of ownership and assure themselves of a substantial gift at a small annual cost. Additionally, premiums are deductible items (on federal income tax returns) as charitable gifts.

LIFE ESTATES

Life estates are encouraged for donors planning to give property but wishing to live there until passing. This is proving particularly helpful for the retired property donor that has ceased (or wishes to cease) land management responsibilities but wants to stay on the "home place." The Department of Wildlife and Parks has personnel experienced in both farm and ranch management. Life estates can provide the donor a chance to see how the property is developed and managed for public use.

PERSONAL PROPERTY

Personal property donations are accomplished by contacting an agency employee and explaining the intent or desire to donate the items. Wildlife and Parks personnel will make the necessary arrangements and provide the donor with a personal property receipt that can be used for tax purposes.

Remember, donated personal property valued at $100 or more qualifies the donor for one of the special-edition art prints.

projects the donors specify. Virtually all funds are placed in a specific account and spent on the project the donor requests. WILDTRUST accounts are not subject to normal budgeting procedures and can be spent at any time, but formal expenditure guidelines must be followed.

Once a WILDTRUST account is created (the wild turkey restoration account, for example) Department personnel responsible for the project assume responsibility for timely expenditure of funds. Following is only a partial listing of current WILDTRUST accounts: Hunter Safety, Hatchery Improvement, Youth Fishing Program, Nongame, Goose Restoration, Wild Turkey Restoration, Otter Restoration, Clark Nature Trail, Cheyenne Bottoms Restoration, Habitat Development and Operation Game Thief.

WILDTRUST donors are recognized for their generosity in several ways.

Each year 500 limited-edition prints are produced from a wildlife painting, commissioned through the Department's WILDTRUST program. The original paintings are on display in Pratt, and the prints (there are now six prints: Canada geese, quail covey, wild turkey flocks, rooster pheasant, booming prairie chickens and mallards) are presented to WILDTRUST donors meeting certain requirements. The wildlife prints are given as a token of appreciation for donations to preserve and improve Kansas' natural resources.

Donors of property, services or funds totaling between $100 and $500 receive one WILDTRUST art print in addition to a brass plate (bearing the donor's name) affixed to the WILDTRUST donation exhibit in Pratt. Donations exceeding $500 receive the same attention, plus a special recognition plaque. Special news releases and media events are also held to publicly herald donations.

The agency has named properties after the donor: Maxwell Refuge, Wachs Wildlife Management Area (WMA), Green WMA, Harmon WMA and Garten WMA, to name a few areas. The agency also has affixed plaques and bronze plates to various properties to memorialize the donor. Some donors request anonymity while others desire a higher profile.

All such memorializing is done to reflect favorably on both the recipient and the donor.

Donations of money can be sent directly to WILDTRUST personnel with instructions for its use. Anyone who donates personal property must complete and sign the upper portion of a personal property donation form. This form as well as any information you may require is available at both the Topeka and Pratt offices. If you want to donate land, money or transfer life insurance, wills or annuities, contact the WILDTRUST administrator in Topeka.

We can enjoy our parks, our wildlife and our beautiful natural resources, but we must also ensure they will be everlasting. The WILDTRUST donation program provides an opportunity for the concerned outdoor enthusiast to become actively involved in this important effort.

WILDTRUST personnel at the Wildlife and Parks office in Topeka can answer your questions.

CONTACT:

WILDTRUST Administrator
Kansas Department
of Wildlife and Parks
900 S.W. Jackson
Suite 502
Topeka, KS 66612
(913) 296-2281

The Canada goose restoration project has been funded with WILDTRUST donations.

Gene Brehm photo

HIGH GROUND

by Ken Brunson

A Real Teal Deal

Gary Davison cartoon

Crouched on a stool, for an early fall outing,
alert is a fool, who is waterfowl scouting.
Decked out in full camo, 'midst dekes craftily set,
adorned with some ammo, and calls 'round his neck.

He waits with his dog, as the morning sun rises,
to burn off light fog, bringing feathered surprises.
Already astute, to one thing unexpected,
a leak in a boot, that was not pre-detected.

But hasten does he, to the marsh's first calling,
in spite of bad knees, weak from age and some falling.
What is it that stirs, such mature men of reason,
to be yearly lured, to the early teal season?

I think its the thrill, watching little ducks fly,
when wind is so still, sneaking in from the sky,
like tiny fast jets, performing air shows,
canted wings set, doing loops and snap rolls.

And quick power climbs, always seem so amazing,
coming straight in at times, with barrels swiftly raising.
Then a sudden alarm, from the corner of one eye,
just a swallow; no harm, and some huge dragonflies.

Then bluewings appear, banking in for a splash,
fumbling with gear, I sit there aghast.
But after a few rounds, I can get a fair shot,
and getting one down, I admit means a lot.

And then there are these, that will land near my feet,
my dog and I freeze, as our new guests we greet.
These birds will depart, conversation enjoyed,
but I have not the heart, to bag one so decoyed.

The hunt for these teal, is in some ways distraction,
and to end with fine meal, yes, is great satisfaction;
but the main thing I get, with first birds of migration,
is a preview of yet, larger coming attractions. W&P

Ken Brunson, a Pratt-based stream biologist and avid waterfowl hunter, wrote this poetic reminiscence of teal hunting before the early (September) season was canceled. And though teal won't be legal until regular duck season opens, we thought springing Ken's first published poem on you was fair game.