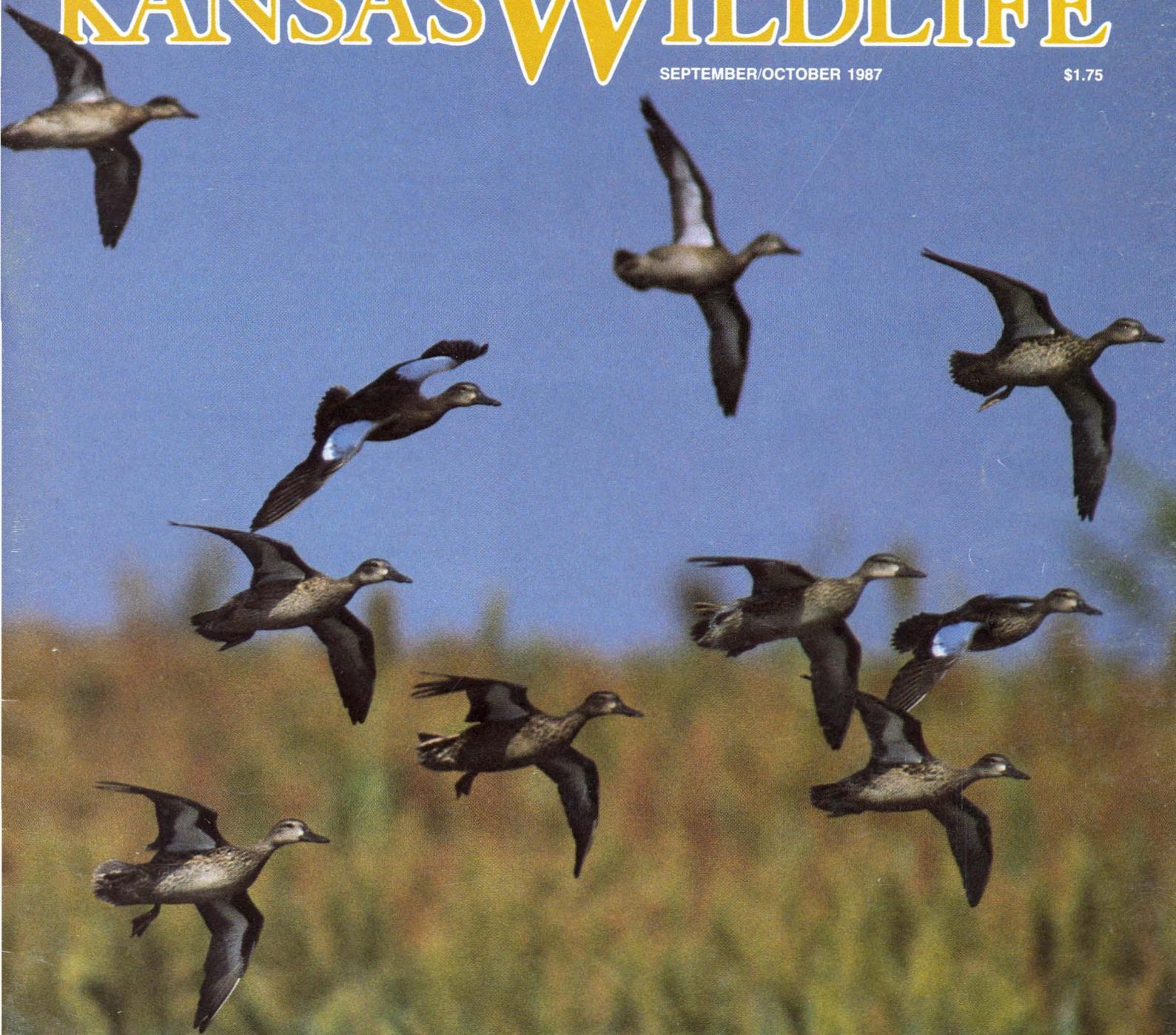


KANSAS WILDLIFE

SEPTEMBER/OCTOBER 1987

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KANSAS WILDLIFE

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

THE BUCK STOPS HERE



End Of An Era

Since 1977 and until recently, the familiar buffalo-and-sunflower logo stood as the symbol—the official seal—of the Kansas Fish and Game Commission. And, as emblems go, it was a good 10 years. The well-known cloth patch is attractive, vivid and instantly recognized. Most importantly, the emblem linked the former state conservation agency with Kansas' storied past and bright future.

Even at that, the logo's days are numbered. On July 1, an Executive Reorganization Order transformed the Kansas Fish and Game Commission into the Kansas Department of Wildlife and Parks. It's a safe bet the new Wildlife and Parks secretary (scheduled to report for duty Sept. 1) will order a new official emblem to reflect the merging of the Kansas Park and Resources Authority with the Fish and Game Commission. And the buffalo-and-sunflower patch as we know it will be put out to pasture.

When the 10-year-old emblem is removed from caps, jackets, shirt sleeves and state vehicles sometime down the road, several Wildlife and Parks employees who entered the patch design competition in 1977 could rightly say, "There goes the patch I helped create," although only one, Gary Heskett, a wildlife conservation officer (WCO) based in Mankato, can say his was *the* winning design.

Early in 1977, newly appointed director Jerry Conley announced an agency-wide competition aimed at creating a new emblem. As incentive, Conley would provide the winning entrant with a steak dinner. In May of that year, Conley and a few hand-picked judges carefully studied all the entries. "We liked some of the ideas that came from a variety of (suggested) patches," says Conley, now the director of the Idaho Fish and Game Department. "But Gary's was the closest to what we were after."

What they were after was a patch that illustrated the green plains of Kansas. So one day Conley and then-commissioner Bill Hawes sat down on a park bench for lunch and began discussing in detail the ideas submitted. Beginning that day, the patch slowly began to take shape. A buffalo, the state animal, would be placed on a green 3-D outline of Kansas, and an all-encompassing sunflower would brightly color the patch. The sunflower, outlined in green, would be set in a field of brown that was also outlined in green thread. The words "Fish and Game" would be embroidered above the buffalo, "Commission" below.

It's interesting to note that the prairie chicken was most often depicted on the patch designs. Conley had nothing against prairie chickens but concedes the upland bird was never seriously considered. "We could imagine everybody saying, 'Here comes one of those chicken wardens.'"

Conley decided to go with the buffalo because it was symbolic of the state's prairie heritage. That plus the fact that he probably hadn't heard any good buffalo jokes recently may have influenced his decision.

And since the Commission was embarking on an era of renewed confidence and high visibility, Conley ordered the patch to be worn on both sleeves. The old black-and-yellow Forestry, Fish and Game Commission patch had been worn



Patti Murphy illustration

on just one sleeve. Conley had seen too many newspaper photographs of Fish and Game employees doing their jobs only to have the sleeve without the patch be in the photo.

The dual-patch system may have been good for newspaper coverage, yet the enlarged sunflower on the side of patrol vehicles drew criticism from several WCOs. Beautiful patch, they said, but that bright yellow will surely tip our presence when we're trying to be discreet. What was needed was an emblem that spoke loudly when it needed to but could disappear instantly. Someone suggested the stick-on vehicle patch be magnetized. It was, and the gripes ceased.

And whatever became of Gary Heskett's steak dinner? He never got it. After Heskett was informed of his winning design, he casually mentioned to Conley that he'd rather have something he could show to his kids, something that would last. A book was suggested, and Conley sent Heskett *Land of the Post Rock*. The inscription read, in part:

... Your recognition of the importance of the buffalo in Kansas history and our responsibility as an agency to ensure a wildlife heritage for future Kansans is, hopefully, reflected in our new patch design ...

That it was.

Paul

Paul G. Koenig
Editor



Early Teal

Warm weather and comfortable hunting conditions make the September teal season a welcome end to summer.

by **Marvin Kraft**
Waterfowl Project Leader
Emporia

photos by **Mike Blair**



Each year since 1965, many Kansas waterfowl hunters have welcomed September as the time when the summer heat slacks off and they have their first chance of the season to hunt ducks. This first duck hunt is commonly called the special September teal season. Or teal season, for short.

Although teal are officially classified as ducks and the gear is the same stuff used during the regular duck season, a September teal hunt is different. The main contrast, outside of the fact that only teal may be taken during this special season, is probably the weather. Instead of the cool, crisp or downright cold temperatures associated with a late-season hunt, a teal hunt usually involves warm weather, green vegetation and mosquito repellent. This is hunting that can be en-

joyed by hunters who are sensitive to the cold, harsh weather characteristic of late-season hunts. And teal season is an excellent occasion to introduce a son or daughter to the sport of duck hunting.

The idea of a special September teal season originated in the late 1950s, when biologists from the Central and Mississippi flyways began shifting their efforts from the broad category of waterfowl management to species management. The emphasis on species management provided greater protection to ducks such as canvasbacks (which were in need of additional harvest restrictions or special management efforts) and allowed more liberal regulations for species that could stand additional harvest. The point system was one product of the species-management approach. An-

other product was the September teal season.

Although all species of teal are legal during this special season, the hunting effort is directed primarily at the blue-winged teal. The first attempt at intensive species management was directed at the bluewing because: 1) it was one of the most abundant ducks in North America, and 2) it had a low harvest among hunters and therefore could provide additional hunting recreation. The lower harvest rate of bluewings was due to their early migration, which allowed them to escape gunning pressure over most of the

Two Kansas teal hunters fluidly spring into action as a small group of bluewings zip by their decoys. Bluewings (inset) are the earliest of the teal to migrate south.



United States. This early migration also tended to isolate bluewings from most other species of ducks in the autumn, making identification easier and reducing the accidental kill of illegal species. The two other teal species — greenwing and cinnamon — were included in the special season because biologists thought most hunters would be unable to distinguish between these two species. And since the greenwing is a later migrant, it would not be present in large numbers. Cinnamon teal are uncommon in the Central and Mississippi flyways, and biologists believed this species would not be adversely affected by the special season.

The September teal season is allowed in 15 non-production states. The season was well-received by Kansas hunters and has become a favorite for many of our sportsmen. In recent years, the statewide harvest has averaged around 32,000, but reached 73,000 in 1975 and 78,000 in 1970. Kansas usually ranks second or third in total harvest among those states offering this hunt.

The teal season has had its problems, however. During the season's first few years, the illegal kill of wood ducks prompted the Kansas Department of Wildlife and Parks to close the Marais des Cygnes and Neosho wildlife areas during this special hunt. These areas were again offered the special teal hunt in 1978, based on the belief that Kansas hunters had sharpened their duck identification skills. The point system, in effect during regular duck season, rewards hunters for being able to identify their targets before shooting. Close monitoring of these areas when they were reopened verified that hunters had improved their duck recognition and were more selective shooters. Since then, the September teal season has been open statewide.

Of the 28 species of ducks found in Kansas, the blue-winged teal is the earliest to migrate each fall. Bluewings are sensitive to cold temperatures and move out of their nesting grounds with the first August frosts, then travel leisurely south to their wintering grounds. Some bluewings make it as far south as central Chile and Brazil.

Greenwings are a hardier duck, often remaining north well into fall. During their southward migration they

often linger along the way until ponds are iced over and they must move to find open water. Their major wintering areas are in the Southern states and Mexico. Cinnamon teal are rare in Kansas, and few are taken by hunters. Their plumage is usually almost identical to blue-winged teal during the fall. Should a hunter harvest a cinnamon, he seldom recognizes it as such.

Teal are dabblers (shallow-water feeders) and are most abundant on sloughs, potholes, farm ponds and marshy areas. This shallow-water habitat is what hunters should look for when selecting a place to set up. Public lands in Kansas that usually attract and hold teal include Texas Lake, Lovewell, Cheyenne Bottoms, Jamestown, Neosho and the Marias des Cygnes wildlife areas along with the Quivira National Wildlife Refuge. When water is available, the small ponds and marshes found on the perimeter of Perry, Elk City and John Redmond reservoirs can also provide good hunting. Teal numbers in Kansas during the fall are often closely tied to late-summer rains. This raises water into the vegetation surrounding our reservoirs, sloughs and ponds. Some spectacular shooting can also be had in western Kansas when the playas and other shallow or sheet-water areas are flooded. This may be due to the fact that central and western Kansas is more directly in line with the main corridor of teal migration.

A teal hunt is typically a less arduous affair than a late-season duck hunt. The temperatures are milder, the clothing less bulky and the decoys usually lighter. Teal decoy well to mallard and other decoys, and although more is often better, especially when competing with other nearby hunters, most teal hunters are satisfied with one or two dozen decoys. Whether by nature or because Kansas is on the northern edge of the teal hunting states, teal are usually less wary than the late migrants and often respond well to as few as five or six mallard decoys set in a small marshy area. A duck call is optional, but in some instances seems to be effective. Teal, pintail and mallard calls as well as whistles are commonly seen draped around the necks of teal hunters. Surprisingly, a couple of quacks on a mallard call is often all it takes to get the attention of a flight of teal and head them into your decoys.

Getting teal into shooting range is only half the challenge. They often fly in closely bunched flocks, twisting and turning in unison. Their speed is deceptive. A hunter who forgets this is likely to fire at a bird near the front of

the flock only to miss or have one fall out near the back of the flock. This demonstrates how much the bird's speed is often underestimated.

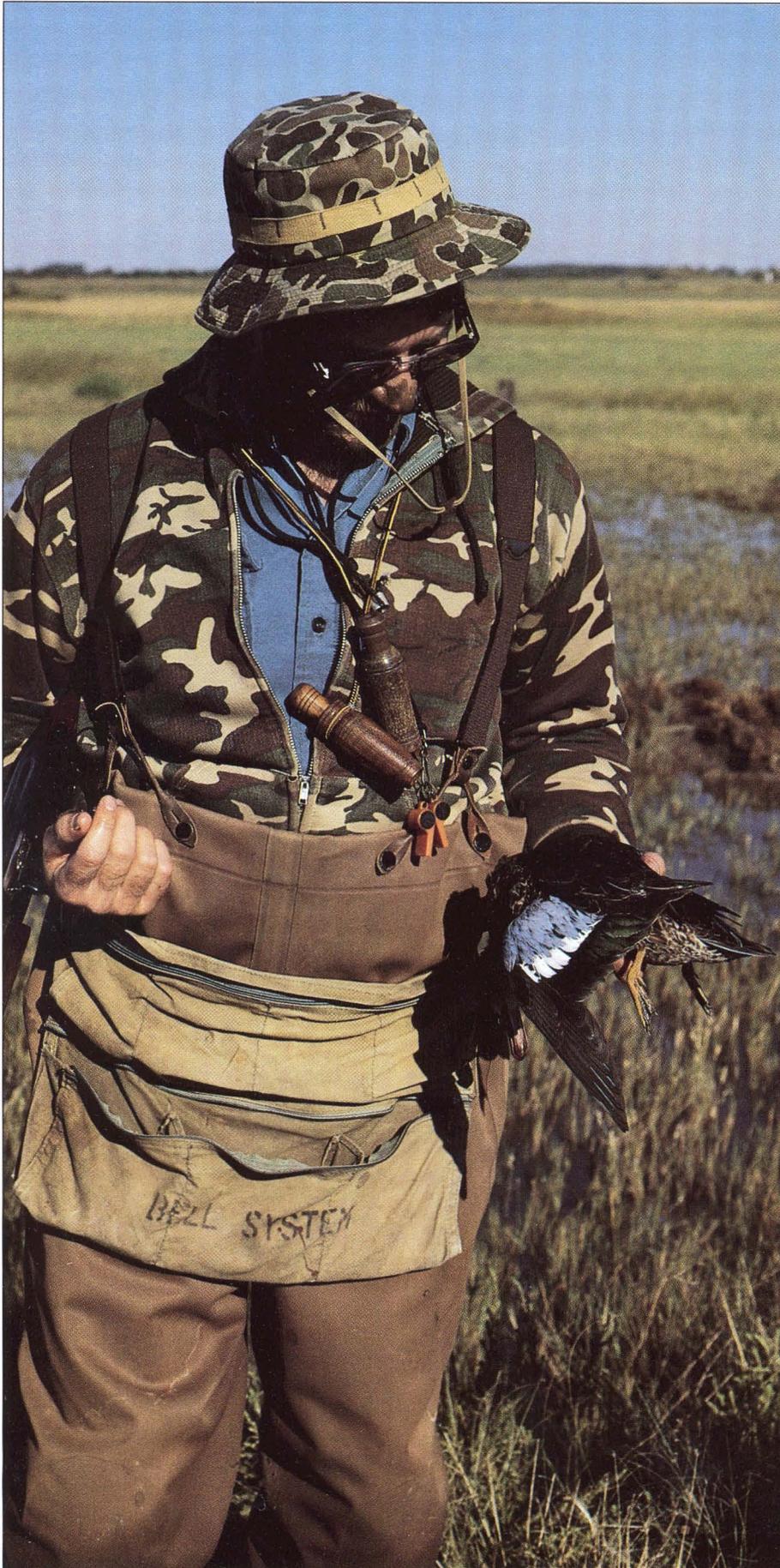
The September teal season is a bonus season designed to allow additional hunting of a species that can withstand greater harvest. In order to maintain this bonus season and enjoy an ethical sport hunt, it's the hunter's responsibility to minimize the accidental kill of illegal species. Be sure of the target before pulling the trigger. This means that a teal hunter who's uncomfortable with identifying teal should do some homework before the hunt.

But homework may be the wrong term for this learning process. Learning to identify teal and other ducks can be as enjoyable as hunting. A good beginning point is to study or review a reference such as *Ducks, Geese and Swans of North America* by Frank Bellrose, or *Waterfowl Identification in the Central Flyway*, available at most Kansas Department of Wildlife and Parks offices. These publications give you each duck's primary characteristics.

No single characteristic is foolproof, however. Although plumage features allow you to identify a bird in hand, they are of limited use on overcast days or when the sun is in your eyes. This is when other characteristics such as size, shape, flight pattern and behavior are needed. This is where the fun begins.

So pack your reference guide and head to the marsh for an off-season trip or two. Fall isn't the only time to observe ducks. Although many plumages are different in the spring, the spring migration can provide an experience almost as enjoyable as a fall hunt. Ducks are less wary, and it's often much easier to observe the differences between species. In addition, the ducks' breeding plumages, courtship behavior and other antics are sure to provide a memorable experience.

Learning to identify the blue-winged and green-winged teal is easy if you do that homework mentioned earlier. Their small size, rapid wingbeat and flight, and twisting and turning maneuvers with no apparent decrease in speed are key points to recognize. In bluewings, both sexes of adult as well as young show a chalk-blue patch on the upper wing and dark green speculum (the bright-colored feathers on the trailing edge of the



wing). The only other duck with a blue wing patch is the shoveler, and its oversize bill distinguishes it from teal. During fall, all bluewings assume a plumage similar to the female — dark brown on the back with spots on the breast and becoming lighter to whitish below.

The green-winged teal, about 14 inches in length or 2 inches shorter than the bluewing, is the smallest of our North American ducks. The fall plumage of all age and sex groups is similar to that of the female, showing a white belly and underparts with mottled brown above. The speculum is iridescent green and black. In September, a few drakes may show flecks of chestnut and green on their heads, but these colors do not become prominent until late fall.

Teal are usually found on smaller bodies of water. Sportsmen can create an excellent hunting area that will be attractive to teal and other dabbling ducks. A farm pond of at least 5 acres in size is needed. So is a nearby 2- to 3-acre area of land below the dam. This land must be leveled. Then build a low dike around the flat with a drain tube and valve at the low end. This allows the area to be flooded or drained. Keep a few inches of water on this flat in the spring to prevent undesirable weed growth. Drain the water in May or early June. If native smartweeds or other desirable vegetation fail to sprout, the ground can be disced when sufficiently dry and seeded to Japanese millet, usually in mid-or late June. Irrigate as needed, and flood the plants with a few inches of water early in September, prior to the teal flights. A few open patches 30-50 feet in diameter should be left to provide open water for the birds. These openings also provide areas to set decoys. This combination of open marsh water and shallow feeding area will be attractive to dabbling ducks.

Considering the excellent quality of teal, their willingness to decoy, their sporting flight and the usually mild weather, it's no wonder the September teal season is popular with Kansas hunters. This year the season runs Sept. 12-20. So the time is nearing to bone up on your duck identification, grab your waders and decoys and head for the marsh. It's an excellent way to begin another waterfowl season. **KW**

This teal hunter admires a bluewing, the most common teal taken during Kansas' nine-day early season. Greenwings, which are 2 inches shorter than bluewings, are taken in far fewer numbers than are bluewings.



The Winders, recognized for their contribution to wildlife, stroll around the 1½ acres of backyard habitat they provide in Troy, Kan. The Winder's efforts have been recognized (inset) for the good they've done for wildlife.

Backyard Wildlife

For almost a decade, my husband and I have been creating wildlife habitat in our backyard. The work is rewarding.

by **Mary Winder**
Troy

photos by **Mike Blair**

You don't have to live in the middle of a northern forest or in a secluded mountain valley to have wildlife in your yard. Anyone with a backyard of any size — whether in big cities or suburbs, small towns or out in the country — can transform their property into a wildlife haven. I

know it can be done, because over the past nine years my husband and I have converted our once-barren 1½-acre yard in Doniphan County into an oasis for wildlife. But you don't need that much land to provide for wildlife's needs. Every yard and situation is unique, of course, but here's how we

put out the welcome mat for wildlife. Perhaps our experiences will encourage others to find ways to invite wildlife to their yards, too.

We learned that the first step in creating wildlife habitat is to understand some basic wildlife management principles. Wild animals must have

three main elements in order to survive: food, water and cover. Provide these three elements in your yard and wildlife will come.

Let's take a look at food first. Simply putting out food, (birdseed, for example) in your yard is one way to furnish wildlife with food. But an ideal plan would include planting shrubs, trees and other vegetation that produce fruits, berries, buds, nectar, nuts and seeds. We planted a wildlife bundle we ordered from the Kansas State Extension Service. This reasonably priced "bundle" consisted of 130 bareroot shrubs and trees including honeysuckle, autumn olive, cotoneaster and winterberry. Later, we also planted a nongame bundle with 15 shrubs and trees, ideal for small yards. Since we discovered that autumn olives grow so well in our area, we ordered an additional 50 of these shrubs.

We learned that mulching the newly planted shrubs and trees with straw really helps control weeds and conserves soil moisture. Even with the mulch, though, we found that periodic weeding and watering during the first two growing seasons really helped get the seedlings off to a good start. We tried to water once a week if it didn't rain.

We also learned that wildlife can sometimes thwart your efforts to create habitat. Cottontail rabbits are common in our area, and they seemed to take great pleasure in nibbling on the newly planted shrubs and trees, destroying the habitat we were trying to create for them and other wildlife. It was apparent that the rabbits might kill everything we'd just planted. For this reason, we constructed cylinders of chicken wire and staked them around each shrub and tree. The job was time-consuming but worthwhile because the cylinders kept the rabbits at bay until the shrubs and trees were large enough to tolerate their nibbling.

Another problem we encountered was losing shrubs to winterkill. The autumn olives may grow well here, but they were also the only type of shrub we lost during a recent severe winter. That experience taught us about the importance of variety. Planting a variety of trees and shrubs will prevent you from losing them all to winterkill or disease. And, as a rule, an assortment will attract more wildlife species than do single plantings.

The state extension service is not the only source of trees and shrubbery. You can also buy plants from nurseries. Another alternative is to try digging up small shrubs and trees from the wild . . . with permission from the landowner, of course. A good handbook will help you with identification.

We've also planted other vegetation to provide food for wildlife. Since we're also interested in attracting butterflies and hummingbirds, we learned what flowers and plants they prefer. Among the varieties of flowers we planted are prairie coneflowers, phlox, sedum, lilies, coreopsis, salvia, trumpet vine, columbine, marigolds and daisies. We bought some of the seeds and gathered others from friends' gardens and from the wild. Remember when gathering wild seeds not to take all the seed from an area.

Ruby-throated hummingbirds seem especially fond of the clumps of columbine that bloom in our flower gardens each spring. The hummingbirds allow us to sit near to the flowers they're working. These bright bundles of energy are so fascinating to watch that even our 2-year-old daughter will sit spellbound for as long as the hummingbirds are flitting among the nodding flowers. Before the columbines are finished blooming each spring, I plant clusters of salvia nearby and the hummingbirds make a smooth transition from one flower to another.

"What exactly should I plant to attract wildlife to my yard?" you might ask. Both the National Wildlife Federation and the Kansas Department of Wildlife and Parks have backyard wildlife habitat programs that can provide lists of shrubs, trees and other



Habitat plantings can improve one's living experience, but the common gardening tools (at right) attest to the hard work involved.

vegetation that will attract wildlife. Your local library probably has (or can get for you) books and magazines about wildlife plantings. Your local Soil Conservation Service office, county agent or area wildlife biologist also may be able to offer planting suggestions.

Putting out food during the winter will enhance the attraction wildlife have to a naturally maintained backyard. This practice helped attract wildlife to our yard even before the shrubs and trees had grown large enough to produce their fruits. We have several birdfeeders we keep filled with seed during the winter. Some of the birdfeeders we bought; some we built ourselves using plans from several books. We also gather waste ears of corn from nearby fields and feed this surplus to rabbits and squirrels. We toss some corn on the ground and put some on a squirrel feeder, consisting of nails driven into a board that's tied to a tree.

Water, the second element wildlife require, can be provided by something as simple as an overturned trash can lid filled with water or as elaborate as a concrete pond complete with waterlilies and goldfish. We have several birdbaths in the yard to provide water for birds and a shallow ground-level basin for small ground-dwelling animals. We've hand-dug a small pond but unfortunately our backyard pond won't hold water. We're in the process of deciding how to remedy this problem. Lining the pond with plastic, rubber or cement are all alternatives.

During a recent hot, dry summer, we noticed an extraordinary number of tree frogs in our yard. We think they were attracted to the water they found here. Whatever the reason, their presence led to a funny confrontation. No one in our family will ever forget the broiling July evening when a ball of fuzz mysteriously hopped into our living room. Upon investigation, we discovered that the fuzzball contained a tree frog. The frog had somehow found its way into the house and apparently become entangled in a ball of fuzz under the bed, then hopped into the lighted living room. I have yet to hear the end of the jokes about how a tree frog pointed out deficiencies in my housecleaning.

Winter can cause trouble when trying to provide water for wildlife. A



Corn placed over nail ends provides an easy way to feed birds and squirrels in a backyard setting.

special birdbath heater or a livestock trough warmer can be used to maintain an ice-free water supply. During the winter, I take a kettle of warm water out to one of our birdbaths each day. It took several days for the birds to notice the warm water. The bold sparrows and starlings were the first to realize the water was there, but soon the cardinals, bluejays, woodpeckers and most of the other bird species that visit our yard were using the birdbath. The birds would hardly wait for me to return to the house before they started swooping in to take their turns at the warm water.

Our winter birdbath consists of a shallow basin set on a concrete block pedestal. The rubber basin, purchased at a farm supply store, is ideal for winter because it won't crack when water freezes in it. And the bird's feet and tongues won't stick to the rubber material in freezing temperatures.

Cover is the third element wildlife require. Wild animals need protection from weather and predators in addition to a safe place to raise their young. We've tried to pro-

vide several cover types to suit the varying needs of wildlife.

The shrubs and trees we've planted not only produce food for wildlife but cover as well. In addition to these, we've also planted a windbreak consisting of 100 Scotch pines and Austrian pines ordered from the extension service. We later added 40 eastern red cedars taken from a friend's pasture. These dense evergreen trees provide good winter cover for birds and mammals. The windbreak also provides a large sheltered area on its leeward side, where wildlife can feed and loaf.

One way to create instant cover is to construct a brushpile. We have four made up of old Christmas trees and deciduous tree branches loosely piled on top of a support (such as a tree stump), so there's open space underneath. Many species of wildlife including rabbits, mice, snakes, lizards, opossums, quail, pheasants and songbirds use these brushpiles for shelter. We've also built a rock heap to provide cover for small mammals, lizards, snakes and insects.

Another way we've created cover is by simply not mowing certain areas and letting natural grasses and vegetation grow. After just one summer, we noticed several varieties of shrub and

tree seedlings and a multitude of herbaceous plants growing in these areas. Wild animals are making use of this unmowed area even before it has grown up to provide dense cover. One windy gray December morning, for example, I saw a slate-colored junco hopping about in a shelter tangle of tall unmowed grasses. He seemed quite comfortable and protected from the cold, damp wind as he pecked at a late-season spherical dandelion seed head, ate the seeds and spit out the fluff.

A different approach to creating cover encourages birds to do the planting. To do this, stretch twine or wire between fenceposts along a line where you want the cover. Birds will perch on the twine or wire and will plant a variety of shrubs and trees, by means of their droppings, which often contain seeds from the fruits and berries they eat. These seeds pass through the digestive systems of the birds, and in time you should have a variety of trees and shrubs providing both food and cover.

To encourage wildlife to reproduce in our yard, we've strategically placed nesting boxes and birdhouses. We have houses, built from scrap lumber, for wrens, bluebirds, flickers and squirrels. Some bird or animal uses each of these houses, although the tenant isn't always the species the

house was intended for. During the "summer of the tree frogs," we even had a tree frog living in one of our wren houses. It peeked out of the opening every day for several hours, presumably waiting to snap up an unwary insect flying by.

The benefits of dead trees to wildlife should not be overlooked. If a dead tree is a safety hazard, of course it should be cut down. But if it's not a hazard, consider leaving it stand. Many types of birds nest in dead trees. Woodpeckers, for example, are insect eaters that rid a yard of many pests.

Unfortunately, some American city dwellers (including Kansans) have run into trouble with their local governments or neighbors when they cultivate natural yards. To avoid this type of trouble, plan the development of your natural yard. Map your yard and sketch in plantings and changes you intend to make. Learn about the plants you'll be growing. Avoid ones considered to be noxious weeds such as musk thistle. And learn about the wildlife you'll be attracting, too. Discuss your plans with local officials and with your neighbors and describe the community benefits of your plan. In addition to the obvious benefits to wildlife, natural yards conserve energy and water, and they reduce or eliminate the need for pesticides. These yards can also be used to educate your com-

munity. Each spring a class of second-graders visits our yard for a nature walk. During this field trip, students and teachers see a variety of wild animals and learn how to invite wildlife to their own yards.

Some U.S. cities such as Madison, Wis., have addressed the issue of natural versus traditional yards and found a way to make room for both. Madison has a Natural Lawn Ordinance that allows natural yards if certain guidelines are followed. Perhaps other cities will follow suit, if there's enough public support.

It's been nine years since we started transforming our yard into a place for wildlife. With each passing year we've noticed more and different species, and sharing our yard with wildlife brings our family great pleasure. We've spent many happy hours together planning, creating, planting, watering and weeding. But best of all is the time we've spent watching, listening and experiencing the life in our yard. Our children, spellbound, have gazed quietly from a distance at a nest of baby cottontails. They've watched a walking stick do its swaying-twig imitation and have held a plump warty toad and a smooth green tree frog in their hands. We've listened to owls hooting by night and saucy squirrels chattering by day. We've stumbled upon an opossum playing dead and have glimpsed a blue heron that paused in our yard early one evening.

Our yard is our personal statement to everyone. It says loud and clear that we care about wildlife and recognize the importance of providing a place where wildlife can live. In our small corner of the world we've acted upon these beliefs by creating wildlife habitat in our yard. We've never regretted our decision to do this.

Nor, I predict, would you.

For more information about attracting wildlife to your yard, write:

National Wildlife Federation
Dept. BN
1412 Sixteenth St., N.W.
Washington, D.C. 20036-2266

or

Kansas Department of Wildlife
and Parks
Rt. 2, Box 54A
Pratt, KS 67124
(316) 672-5911

KW

Editor's Note: Mary Winder gives numerous slide shows for area schoolchildren each year. The Winder yard is registered with both the National Wildlife Federation and Kansas Department of Wildlife and Parks wildlife habitat programs.

Lester Winder shows a group of area second-graders how brushpiles provide valuable cover for cottontail rabbits and other wildlife species. The Winders regularly host school groups.





Commercial fishing has, in many instances, been shown to be an effective way of improving a lakes' sportfish population.

The Fish Market

Studies suggest that sportfish populations are enhanced whenever roughfish populations are controlled. Here's why.

by **Jim Stephen**
Marketable Fisheries Investigator
Emporia

Commercial fishing has been advocated as a way to reduce roughfish populations (carp, river carpsucker, gar, drum and buffalo, for example) commonly considered an obstacle to good sportfishing. And although the findings are inconclusive, studies suggest that some sportfish populations are enhanced whenever roughfish populations are controlled.

The effects of roughfish removal on sportfishes vary to extremes. Some researchers believe that population trends of one group of fishes are related to the opposite trend of another group of fishes (high roughfish populations result in low sportfish numbers and vice versa), while others believe categorically that roughfish populations appear to have little effect on the total poundage of sportfish.

Kansas fisheries managers have discussed these implications, and in one case decided that if large populations of roughfish were to be removed, then introducing and supplementally stocking certain predator species (northern pike, muskellunge, tiger muskie and wipers) near the time of harvest would quickly fill the niche. They believed that an array of predator species would make best use of the remaining roughfish by converting buffalo fry, for example, into wiper or walleye flesh.

The method of removal had historical basis. Generally, the accepted form of commercial fish removal in inland waters began more than 60 years ago. Roughfish removal programs began in the Great Lakes states, likely responding to the introduction and spread of the common carp in the 1890s and their subsequent harvest. At first, some state agencies used their own crews to harvest and market the fish. The cost generated by those crews, however, usually exceeded the profits. As a result, few state roughfish removal teams remain today. In their place came the private commercial fisherman, motivated by potential profit. This fisherman took over the fish-removal chores after striking an agreement with the state conservation agency.

In October 1978, the Kansas Department of Wildlife and Parks authorized and began a commercial fish-removal project on Lovewell Reservoir. Lovewell contained a dense population of large bigmouth buffalo, primarily from four strong year-classes. Lovewell's sportfishing had varied from fair to good for many years, especially for walleye and catfish. White crappie and white bass, however, did not demonstrate the good growth rates typically found with abundant gizzard shad. The gizzard shad population was dominated by an intermediate (5-inch) fish too large to be consumed by smaller predators.

In slightly more than seven months of commercial fishing, more than 435,000 pounds of roughfish (99 percent of the catch was bigmouth buffalo) were removed from Lovewell. This reservoir comprises 2,900 surface acres, so the harvest amounted to about 150 pounds per acre.

Commercial fishermen used overnight sets of trammel nets. Minimum mesh sizes were limited to 4 inches, large enough to allow walleye and most other sportfishes to pass through unharmed.

Abundant shad, carp and drum young-of-the-year were produced the first growing season after the commercial removal of bigmouth buffalo. Increased production of these species continued through 1981. Strong year-classes of white bass and white crappie also followed. A comparison of white bass and white crappie in pre- and post-harvest years showed improved growth the first three years following harvest.

Most other fish populations were either relatively stable following the harvest or could not be reliably measured. Species apparently unaffected by the harvest included largemouth bass, channel catfish and bluegill. The introduction of northern pike, muskellunge and tiger muskie appeared ineffective. Those fish did not survive to become part of the fishery, and stocking ceased after 1980.

Production of abundant gizzard shad year-classes after 1978 led to shifts in their length distribution. Instead of 5-inch gizzard shad collected in August (as in 1978), subsequent years had size ranges varying from 1 to 8 inches with about 99 percent of the sample less than 3 inches long.

Prey available for predator fish increased from 22 pounds per acre in 1978 to 829 pounds per acre in 1981.

More recent (1985) studies indicate prey (gizzard shad) has maintained high levels. The gizzard shad population in Lovewell has remained dynamic since the commercial harvest and continues to provide dependable food sources.

If the food supply is consistently abundant, then predators should respond favorably. Indeed, they have. Annual samplings of Lovewell fish populations have shown improved catch-rates (nearly threefold) for walleye and white bass. The fall young-of-the-year index for walleye has increased from 0.2 in 1979 to 32.1 in 1985. While supplemental stocking of walleye has influenced these numbers, the well-being and recruitment of walleye is related to the improved food chain.

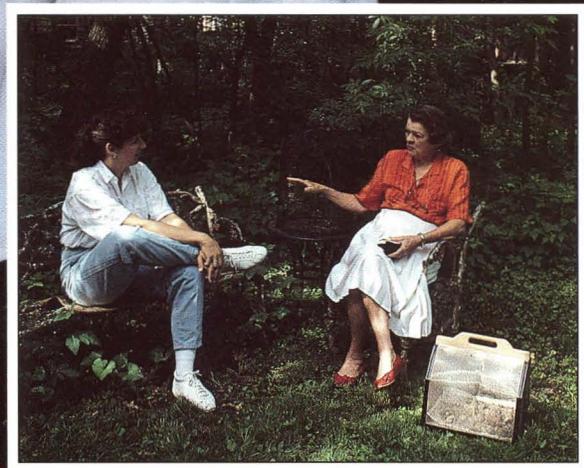
Despite increased populations of certain predators, their growth did not slow. In comparison to the 1978-1980 growth increment average for walleye (when population densities were lower), growth in 1983-1985 remained unchanged. White bass populations also remained unchanged during this period. White bass, walleye and wipers, for example, haven't expanded to the point where they exceed the available food supply needed to maintain good growth.

Massive survival of the young of drum, buffalo, carp and river carpsucker did not occur after the commercial harvest. Competition for food between young-of-the-year and older fish may be one of the main reasons why some of the roughfish don't survive. The annual decline in summer water levels, because of irrigation water releases made from Lovewell Reservoir, likely forces roughfish out of favorable habitat and exposes them to predation, a reduced food supply or both.

Lovewell results have been used to show population trends following this commercial fish removal project because this lake has the best documentation. But improvements have been noted elsewhere in the state. Jim Beam, the state's fisheries management supervisor, found that a strong year-class of gizzard shad followed the commercial harvest at Elk City Reservoir. That year-class of shad demonstrated decreased growth rates, which allowed shad to remain in size ranges more suitable as food for smaller predators. General body condition of white bass and white crappie improved during the same time period. While these population improvements did not persist, they demonstrate what can happen to sportfishes when large quantities of buffalo are removed.

Can similar results occur at any impoundment following commercial fishing? Perhaps, but the changes may be too slight to measure. Large impoundments don't lend themselves to rapid, efficient capture of roughfish. Too, a population structure that varies in sizes can't be as effectively harvested by using only those large mesh nets needed to protect sportfish. Those roughfish too small to become entangled in the gear continue to grow and reproduce, and populations tend to revert to pre-harvest times.

The use of commercial fishing as a management tool will continue to have varying degrees of success until we learn more about how roughfish interact with their environment as well as sportfishes. It does provide one tool to help correct population imbalance in reservoirs that can't undergo the complete renovations used for our state fishing lakes. Commercial fishing can also be used to forestall nutrient overloads in aquatic systems or to enhance zooplankton communities by removing recyclable nutrients or plankton-feeding fishes. Most important, however, may be the use of commercial fishing in harvesting an underused, renewable fishery resource with its related economic and employment benefits. This resource would otherwise go to waste if not commercially harvested. KW



For more than 30 years, Marian Gault has nurtured, fussed over and released thousands of butterflies and moths. It's no wonder the neighbors affectionately call her . . .

The Butterfly Lady

by Mary Kay Spanbauer
Wildlife Information Representative
Kansas City

photos by Mike Blair

She's called the Butterfly Lady, a name befitting Marian Gault and one she accepts with amusement. For the past 30 years she has nurtured, fussed over and released thousands of butterflies and moths.

Marian's lifelong devotion to nature's winged jewels was born at the age of 3 near Fairyland Park in Missouri. Marian's mother, Helen, who'd been involved with moths and butterflies since her high school days, encouraged her curious daughter and began to instill in Marian a sense of wonder. "We would be at the park and scout the milkweed for the largest monarch caterpillars," Marian remembers. "We'd bring them home, put them in mayonnaise jars and cover the tops with a piece of curtain and a rubber band. She fed them fresh milkweed each day until the crystalides formed.

"I remember when the first one I had turned black (indicating the adult is ready to emerge), I thought it had died. I was absolutely amazed when this little wrinkled thing came out when I had seen a caterpillar go in. I saw its itty bitty wings begin to unfold and knew I had witnessed a miracle. This is my first recollection of God and life," Marian says.

Her interest was expanded when the family moved to Michigan a few years later. Detroit lacked monarchs, and Marian was introduced to giant silk moths such as cecropia and polyphemus, beautiful moths with a wingspan as large as a sparrow — up to 7 inches. Along with her mother she spent many hours collecting cocoons and nurturing them through to the adult stage. "We'd put the cocoons in between the screen and the window so they would be in their natural environment," Marian says. "If allowed to pre-

turely warm up inside, they would emerge and a life would be wasted."

The family returned to Kansas City, and Marian began to notice that the moths and butterflies slowly began to disappear. "In the 30s they were gone, just plain gone," she remembers. "The increased use of pesticides, namely DDT, and the bulldozer had a horrible effect on their populations, causing them to decrease at an alarming rate." It was a good many years before she would find butterflies and moths in significant numbers.

Butterflies and moths are extremely sensitive to changes in the environment, making them very important indicators of environmental quality. Today many species of butterflies and moths are endangered or threatened. Pesticides have a devastating effect on them and often kill more butterflies and moths than the target pest. Butterflies and moths may disappear from intensively sprayed areas and may sicken animals that feed on them. The most marked change in butterfly and moth populations is due to the destruction and alteration of their habitat — urban sprawl, grazing, draining, paving and plowing — all of which contribute to decreasing numbers.

Butterflies and moths are an integral part of the ecosystem. In addition to being important environmental indicators, butterflies and moths also pollinate flowers and crops, are major links in the food chain, are important in scientific study and not least of all, are a treasure to have around. There are more than 8,000 moth species and more than 700 butterfly species in North America. Kansas' diverse habitats — prairies, woodlands and marshes — provide for a variety of butterflies and moths.

Marian's butterfly-and-moth operation takes place in her yard, tucked in the quaint, old-style neighborhood of Mission Hills, Kan. It's a minisanctuary where trees, shrubs, flowers and wildlife abound. Marian collects eggs, caterpillars and cocoons, whatever she finds or falls into her capable hands. Her reputation has spread far, and her services are in demand. She's received calls from around the countryside

Marian Gault, also known as the Butterfly Lady, handles a cecropia moth, a direct descendant of the line of moths she's been raising since 1964. Marian and the author talk butterflies and moths (inset).

offering cocoons and caterpillars for her to raise. Marian also makes house calls. Once she and her mother went to a Bucyrus, Kan., farm to pick up some caterpillars. When she arrived, the man yelled to his wife, "Elsie, them worm women are here."

The life cycle of butterflies and moths is elaborate and complex. What begins life as a sometimes fierce-looking, relatively unattractive worm transforms itself, almost magically, into a winged beauty. Butterflies and moths undergo a complete, fascinating metamorphosis — from egg to larva to pupa to adult.

Over the years, Marian has raised countless butterflies and moths. She currently has cecropia, whose heritage can be traced back to 1964. One year Marian had more than 4,000 cecropia caterpillars. "All we did night and day was feed caterpillars," Marian says, laughing. Keeping up with a caterpillar's voracious appetite is no picnic because they must be fed fresh food daily. And they're picky eaters, too, usually eating only the same type vegetation they hatched out on. It's a time-intensive endeavor and a commitment because caterpillars can be in the larval stage from a week to two months. A caterpillar's mission in life is simple: eat, and then eat some more. Those in the butterfly field note that if a 6-pound human baby put on an equivalent weight at the same rate as a monarch caterpillar, the baby would weigh 8 tons within two weeks!

After those 4,000 caterpillars spun their cocoons, Marian made plans. While in New York on business, she contacted the National Audubon Society and made arrangements to have her cecropia cocoons shipped to Audubon sanctuaries throughout the eastern United States. More than 2,500 cocoons were shipped that Easter week.

This year she had only a few dozen cocoons, due to the late fall in 1986. But many years she had hundreds, even thousands, of butterflies and moths — in all stages and varieties. Marian has hatched luna moths, monarchs, polyphemus, swallowtails, fritillaries and others. Once her brood hatches, Marian releases them in appropriate habitats, sometimes traveling more than 100 miles to make sure they're released in proper areas. The life span of adult moths and butterflies varies considerably. Some adult moths such as the giant silk moths don't eat so they die within 10 days. Other adult moths and butterflies may live for months.

There are some distinct differences between moths and butterflies. Moths are nocturnal while butterflies most often prefer daylight. Butterfly antennae are long and slender; a moth's are feathery and fernlike. Some moths build cocoons over the chrysalis; butterflies don't. They even hold their wings differently when at rest.

But perhaps the biggest difference, and most distressing to Marian and other moth-lovers, is the difference in public acceptance. Butterflies are considered graceful and beautiful, while moths are perceived as being dull, dowdy and a nuisance. While some moths can be destructive (some are even serious agricultural pests), there is a negative stigma attached unfairly to all moths. Most moths aren't the sweater-eating variety; only a few species bother wool and other natural fibers. And then it's not the adult moth but its larva that chows down on your Pendletons.

Over the years the butterfly-and-moth business has put Marian and her mother into a number of humorous situations. One incident almost found them in trouble with the law.

"We coasted up near a high school late one evening to retrieve some cecropia cocoons," Marian remembers. "We

had noticed them earlier but didn't want to attract attention. A motorcycle officer in the area thought our actions were suspicious and came over to check us out. He was rather surprised to find two older women and not young kids." Marian couldn't find the tree, so she borrowed the officer's flashlight and proceeded to get the cocoons down with a cane. While Helen explained their life history, another officer arrived in an unmarked car. "He must have thought we were holding the officer at gunpoint, but I only had his flashlight!" Marian says, grinning. "After a rather embarrassing explanation, we took off, leaving a couple of confused but amused officers behind." This was just the first of many incidents with the law, but Marian quickly adds that they were never taken into the station for questioning.

Why does she do it? "Simply, to protect them from danger," Marian says. "They are very fragile, and we've altered their habitat to such an extreme that any extra help we can give to get them through to the reproductive stage is a boost. If we can get them to this point, then we're ahead of the game!" While releasing butterflies and moths may not always result in the repopulation of an area, the awareness Marian creates and the information she provides is of great benefit to these winged creatures.

Paul and Anne Erlich, in their book *Extinction: The Causes and Consequences of the Disappearance of Species*, comment on the loss of butterflies and moths: "Each species or unique population forced to extinction is analogous to the popping of a rivet from the structure of our planet. And when the butterflies start to disappear you can be sure that numerous other rivets have been popped unnoticed."

Butterflies and moths fill a unique niche in our world. Only so many rivets can pop before pieces begin to fall off. We still don't understand enough about our environment and its ecology to realize the consequences incurred with the loss of a species. "Who wants to take that chance?" Marian asks. "I sure don't want future generations to catch their first butterfly as a fossil."

Plant a Butterfly Garden

Butterfly gardening isn't something new. It's been done in grand style in other countries such as England. But it doesn't take much and can be done on a small scale, right in your own yard.

Start by becoming familiar with the butterfly and moth species in your part of the state and then plant accordingly. The key to attracting butterflies and moths is plant diversity and location. A good mixture of wildflowers and cultivated plants will offer the best habitat for all stages of butterfly life.

You stand a better chance of keeping the beautiful adults interested if you provide the caterpillars with favored foods. Most caterpillars prefer wild plants rather than cultivated ones and usually eat only one type of plant or group of plants. For example, monarch caterpillars eat milkweed exclusively.

Adult butterflies prefer flowers with large petals, or nectar perches. They also seem to favor certain colors: purple first, then pink, yellow and white. Location is important, too. Most butterflies prefer plants in a sunny locale. Keep larval food plants clumped or out of the way to avoid having too many picked off by birds.

Here are some planting ideas to get you started:

<i>Wildflowers</i>	<i>Cultivated Plants</i>	<i>Shrubs</i>
* Butterfly Weed	* Marigolds	* Butterfly Bush
* Coneflowers	* Zinnias	* Lilac
* Milkweeds	* Lantana	* Privet
* Verbena	* Asters	* Honeysuckle

—Spanbauer **KW**

the center section

Edited by Mike Miller

LETTERS

force behind efforts to save, restore and maintain wetlands. The fact that there are few rail hunters and that the estimated harvest is low is no reason to end or further limit the sport. *Marvin Kraft, waterfowl project leader*

16-GAUGE STEEL

Editor:

While reading your March/April issue, I noticed a letter concerning steel shot for 16-gauge shells. I thought you might want to inform your readers that 16-gauge steel shells will be available soon.

Federal Cartridge Company will introduce a limited line of steel loads for 16 gauge. And the Danarm Corporation of Denmark has tooling for 16 gauge and should introduce it in the U.S. sometime this year.

At this time, there is nothing in the works for 16-gauge steel reloading kits, but with the introduction of several new 16-gauge shotguns this year, it should only be a matter of time.

I hope this helps your readers and relieves some of their concerns. By the way, I'm very impressed with your magazine. It sure has improved since I was growing up in Kansas.

Fred Neal
Sidney, Neb.

WHY RAILS?

Editor:

I read with interest the reply to a letter in the May/June issue regarding the harvesting of bobcats and foxes. Mr. Miller wrote, "populations are monitored closely and, rest assured, if a certain species' numbers ever fell below a certain level, the trapping and hunting seasons on that species would close."

For some time I have been puzzled about the season on the rails in Kansas. These elusive marsh birds are far from plentiful and certainly not widespread. A wildlife biologist, Randy Rodgers, wrote me in response to an inquiry I made on this subject in January. Mr. Rodgers wrote that the Commission has no practical means of obtaining harvest information on rails.

He went on to say that since so few people actually hunt them, virtually every hunter in the state would have to be surveyed to obtain a statistically valid data base.

Thus, the rail populations cannot be monitored, so the species' numbers are unknown. Why then is there a hunting season on rails in Kansas?

Paul Weidhaas
Manhattan

Dear Mr. Weidhaas:

The populations and harvest of rail are not measured annually in Kansas, at least not to the extent that deer, pheasant, dove or other game species are measured. But that doesn't mean that there is no basis for allowing sport hunting of rails. Numerous studies on Virginia and sora rails have been conducted across the country. In general, these studies have concluded that hunting, even with a bag limit of 25, is not a threat to rail populations.

Banding studies of small (Virginia and sora) rails have had very low recovery rates. Of approximately 4,000 sora and Virginia rails banded, only 20 have been recovered, suggesting that hunting is an insignificant factor to rail populations. Available data from various mail surveys suggest that the number of rails harvested annually is very small. However, many of those studying rails believe the population could withstand a much higher harvest. While a limit of 25 may seem high to some, there is no evidence suggesting that it poses a threat to rail numbers. Why not 15, 20 or 30? The bag limit of 25 is a traditional limit, and at this point, there is no biological evidence suggesting a change is needed.

The consensus of almost everyone who has worked with these species is that the real threat to their future is loss of habitat. To acquire, develop and maintain wetlands requires dollars, which in turn requires support. Up to this time, hunters have been the major

READER LOST

Editor:

This is a letter of explanation as to why I let my subscription to your publication lapse. First off, I would like to compliment you on the beautiful photographic magazine you publish. I looked forward to the issues as companions of my *National Wildlife* and *International Wildlife* magazines.

Unfortunately, since the local magazine is published by hunters, many of the articles (and pictures) are done by and for that audience. And so, I finally discovered that, as I turned the pages of a new issue, I was steeling myself for the possibility of confrontation by a grinning hunter standing over some poor dead thing. And I long have regretted the fact that a fair proportion of my own species gets joy from the taking of life. That realization gives me an inner shudder.

So, although I enjoyed the majority of the issues, my joy was tainted with a dread of turning the next page. With that, I felt that I could not comfortably renew my subscription. But I did not feel good about not complimenting you on the quality of the rest of your publication.

Mary F. Headrick
Emporia

Dear Ms. Headrick:

We appreciate your letter. And we respect your reasoning for letting your subscription lapse. But we hope you don't believe that all hunters are blood-thirsty killers who receive joy from the taking of life. Hunting is much more deep-seated than that. The actual killing is not why we hunt, although killing is part of hunting. It might be the thrill of actually taking part in the predator-prey relationship of nature, rather than merely observing. *Miller*

FISH WORMS

Editor:

I have been wondering for sometime now how to get rid of worms in farm ponds. I have tried many ideas, and they have all failed. Most of the wormy fish are bass, bullhead and channel cats. What can I do to get rid of the worms in the ponds?

J.D. Tibbetts
Morrill

Dear Mr. Tibbetts:

It sounds like you have a yellow grub problem. First off I'll tell you that the yellow grub poses no danger to humans. The grubs can be picked out of the fish when cleaning, and any remaining grubs will be killed and disintegrated when cooked.

Fisheries biologists have yet to find a method to control yellow grubs. One method that has been only partially successful has been to rid the pond of snails. In its first life stage, the grub must infect snails before it can move into fish. If the snails are eliminated, the grub will die. But eliminating snails is very difficult. *Miller*

DEER PERMIT IDEA

Editor:

I have read that the time is drawing close when everyone in Kansas who wants to hunt deer will receive a permit. And that permits will be available to non-residents.

There are a lot of Kansas hunters, like myself, that like to hunt deer with a gun and a bow. Now we have to choose between them each year. I'm sure we would all be glad to pay a fee twice as high for the second permit just to be able to hunt deer in both seasons.

Dave Leiber
Augusta

Dear Mr. Leiber:

We had hoped to be able to satisfy every applicant for firearms deer permits by now. However, we are still turning down hunters each year and do not feel that we can offer two permits (firearms and bow) to some hunters

while others don't get to hunt at all.

There will be an increase in the number of firearms permits offered this year as well as other new ideas including: a special "hunt on your own land" permit for landowners who don't draw a permit in the regular drawing and a special antlerless deer-only season in January. We hope these changes will lower the number of hunters who don't receive a permit.

We will be considering the issuance of multiple permits as well as split seasons, special seasons and other innovations in the future. Your input is appreciated and will be considered in future deliberations concerning Kansas deer management. *Bill Hlavachick, species management supervisor*

WHITE QUAIL

Editor:

In your July/August issue, The Buck Stops Here column about the two white quail interested me greatly. I live in Anderson County just north of Allen County. I am 17 years old and hunt quail regularly. My uncle and grandfather have told me stories of shooting partially white quail two miles south of my house, which is two miles west of Westphalia.

What is so peculiar about these quail is that there wasn't just one or two, but one or two covies. My uncle told me they would shoot white quail often, but that these white quail disappeared after a couple of years. I find this especially fascinating after finding out that only three in 3,558 quail are partially albino.

Michael Spencer
Westphalia

CORRECTION

Editor:

On Page 12 of the July/August issue "Kansas Trails For The Walking" refers to the Flint Hills National Wildlife Refuge, southwest of Emporia. The refuge is 10 miles southeast of Emporia. Take I-35 10 miles east to exit 141, then go three miles right and you are at a gate to the refuge. It is padlocked for about two months around Jan. 1 so a call is a good idea.

Dale Hogan
Neosho Rapids

POSITIVE STEPS

Editor:

In the past I have read many letters in your magazine from people complaining about wildlife habitat being destroyed. We western Kansans have quit complaining and started to do something about it.

Last October we chartered the Kansas Pioneer Chapter of Pheasants Forever. This organization is dedicated to the preservation of the wily ring-necked pheasant through habitat restoration and new habitat establishment.

We have held our annual fund raising banquet, and to date we have 113 members. Our chapter has already helped in planting more than 400 cedar trees in one project, and we are currently seeking other projects.

We are also furnishing grain sorghum seed, free of charge, to area farmers and landowners who are willing to plant it and leave it unharvested for food plots and habitat cover.

If anyone is interested in knowing more about Pheasants Forever, please contact us and we will be glad to furnish you with information.

Stanley L. Edmundson
Pheasants Forever
P.O. Box 717
Colby, KS 67701

OUTDOORSMAN

Editor:

I was reading your May/June issue and on Page 20, in the article "Summer Cats," it said that bluegill could be used for bait in deep water. I was wondering how you could keep the bait from swimming into brush. I'm 10 years old and love the outdoors and your magazine.

Chad Oneal
Fredonia

Dear Mr. Oneal:

Good question. When fishing bluegill in deep water, it's best to cut them up, rather than using them live. I've had best results using a bluegill head. You'll need to use a large hook, and with such a large piece of bait, you may want to give the channel cat 10-20 feet of line before setting the hook.

Live bluegill can be fished with a bobber, 2-3 feet deep. This is most effective in early morning or late evening when channels will move into shallower water to feed. *Miller*

THE LAW

STRESSED OUT

Dealing with stress is one of today's major problems, but thanks to Sam Gunter, one Knox County, Mo., poacher has it all figured out.

It was before the raccoon season and conservation agent Gunter followed three men into the woods after hearing them release a hound.

"Later the dog barked 'treed,'" Gunter says. "I got as close as I could and squatted down behind some high horse weeds within 15 feet of them.

"One of the men approached my side of the tree. It was obvious he was going to walk right into me, so when he was within four feet, I stood up, turned on my flashlight, and said, 'conservation agent, don't move.'"

Gunter says the man did a back flip exactly like the actors in the ice tea ad, rolled into a ball and rocked back and forth, gasping for breath.

"I was afraid he was having a heart attack," Gunter says. "But he told me he'd be all right. 'Just give me some time to get myself back together,' he said. After he crawled around on all fours for a while, he got up and we went back to the truck."

Whatever the fine for the violation, it wasn't likely to be nearly as traumatic as the apprehension. *Missouri Department of Conservation*

OGT WORKS AGAIN

An anonymous caller told Kansas Department of Wildlife and Parks officials that an luka man had taken a deer illegally during the 1986 firearms season. Wildlife conservation officers (WCO) Mike Ehlebracht and Tracy Galvin investigated the report. They learned that the luka man had hunted with a Turon man, who had a firearms permit, and both had killed deer. The luka man didn't have a permit, and the Turon man had allegedly already filled his own tag.

Ehlebracht and Galvin went to the Turon man's residence to talk to him. After showing the WCOs photos of his deer, the man showed them the rack and skull of a deer he claimed his father-in-law had shot. When the officers noticed the tag still attached to the rack, they

asked who's handwriting was on it. Shaken, the man then confessed to shooting that deer and tagging it with his father-in-law's permit.

The Turon man and luka man were charged with shooting deer without a permit. The Turon man's father-in-law was charged with unlawful transfer of a permit. Each man was fined \$250 plus \$28 court costs. Both illegally taken deer were confiscated along with the antlers.

All sportsmen are reminded to call Operation Game Thief (OGT) 1-800-228-4263, if they witness any wildlife law violation. Give descriptions, tag numbers and any other details about the crime to officials. Callers may remain anonymous. The OGT program can be a tremendous assistance to wildlife conservation of officers. *Miller*

POACHERS NABBED

Poachers in Kansas may think twice before committing their next wildlife violation. They may not know who their friends are. As a result of a year-long undercover operation, four Emporia men and one Madison man were arrested on July 17. The men were arrested on charges of snagging and fishing with an unbaited hook.

The problem with snaggers at Soden's Dam, on the Cottonwood River near Emporia, has gone on for years. Regular enforcement activities have been ineffective in stopping the poachers. In some instances, a suspect would be given a ticket, have his pole and reel confiscated and be out a day later snagging again. Concerned, law-abiding fishermen were getting as tired of the poachers as the wildlife conservation officers (WCO) were.

In June of 1986, an undercover officer began spending time at the dam. He gained the snaggers' confidence and observed their illegal activities. He kept files on each man, noting each violation they committed. When sufficient evidence was gathered, warrants were obtained.

On July 17, all the work culminated with the early-morning arrests of the five men. Each of the men was brought to the Lyon County Sheriff's Office and held with bond set at \$1,000. Each team of WCOs was accompanied by an Emporia police officer in Em-

poria, and a sheriff's officer accompanied the WCOs to Madison.

Snagging is a misdemeanor carrying a fine of \$50 to \$250 on the first conviction. Kansas Department of Wildlife and Parks law enforcement officials hope this type of enforcement will change the poachers' attitudes of disregard for wildlife laws. *Miller*



ALCOHOL AND BOATS

As the number of recreational boats increases in Kansas, so does the number of boating accidents. Fun at the lake is often associated with alcohol, and a growing number of boating accidents involve alcohol. Drunk boaters are a threat to themselves and other boaters on crowded waters. A new law, which went into effect July 1, prohibits the operating of a boat while under the influence of drugs or alcohol.

The new law states that no person shall operate a motorboat or vessel, water skis, surfboard or similar device while the alcohol concentration in the person's blood or breath is .1 or more. Violation of this law is a misdemeanor punishable by imprisonment of not more than one year, a fine of not less than \$100 nor more than \$500, or both on the first conviction. On the second or subsequent conviction, punishment may not be less than 90 days in jail nor more than one year and a fine not exceeding \$500.

A law enforcement officer may request a blood or breath test if the officer has reasonable grounds to believe the person was operating a vessel while under the influence of alcohol or drugs. An alcohol test may also be requested if the person was arrested for any offense in violation of state statute or city ordinance where alcohol was involved, or if the person was involved in a vessel accident or collision resulting in property damage, personal injury or death. The officer may request the test based on personal knowledge or on the information gathered in the accident investigation.

Before testing, the person shall be advised that there is no right to consult with an attorney regarding whether to submit to testing. Refusal to submit to testing may be used against the person if the case goes to court. *Miller*

HUNTING



TOUGH TURKEYS

Every muscle ached as I sat in my tree stand holding as still as I could. It had been nearly an hour since I had climbed up in the pre-dawn darkness. I had casually moved in my stand waiting for daylight, when I began hearing putts and clucks that I knew were turkeys. The more I heard, the more I realized that the birds were close. In fact, as it grew light, I found that the birds were roosted all around me. I was bow-hunting deer, but this fall I also had a turkey permit. From that moment, I sat without moving, hoping I would get a bowshot at a turkey when the birds flew down from the roost. That was easier said than done.

Turkey hunting is a spring tradition. Kansans have been hunting them in the spring since 1974. But as turkey numbers grew, a fall season was opened. Fall turkey hunting is a different ballgame. To start with, the birds aren't preoccupied with courtship. Their main concern in the fall is survival. For turkeys, that means eating and watching for predators. And with their tremendous eyesight and paranoid disposition, turkeys are very good at avoiding predators.

Another problem with fall hunting is that the birds are usually in large groups. Instead of one pair of eyes to avoid, the hunter now has 10 or 20 pairs.

Fall turkeys can be taken by one of three methods: ambush, stalking and calling. Stalking may be the most difficult and relies on the terrain of the hunting area. Without the cover of timber, tall grass or hills, the hunter doesn't

have a chance. Stalking requires patience, full camouflage, stealth and persistence.

Calling can work together with stalking. If a hunter doesn't manage to get within range of the intended turkeys, he can then try to scatter them. This can be done by running at the flock yelling, waving arms, whatever. Just make sure the birds are scattered. Turkeys have a strong urge to regroup after they've been scattered, especially the younger birds. Successful fall callers hide in the area after spooking the birds. After waiting for up to an hour, the hunter begins calling. The call is a *kee-kee-run*. Fairly easy to do with a mouth diaphragm, the *kee-kee-run* sounds like its name. It starts with several high-pitched *kees*, followed by a few yelps or clucks. The more urgent the sound, the better. Calling also requires patience and full camouflage.

The last method for bagging a fall turkey is ambush. Waiting for a turkey to walk by is more than just luck. Turkeys establish fairly strict movement patterns in the fall. They will fly down from the roost and move to an area to feed. Much of their food is insects this time of year, and they will often feed in a long line. A hunter who observes these movements for several days can position himself along the feeding line before light and wait. The hunter's biggest problem will be movement. Getting the gun or bow into position to shoot without being detected is extremely difficult with 20 or so turkeys milling around in front of you.

That was my problem that morning in the tree stand. One old hen was sitting in a tree directly in front of me. She looked me over,

calling warning putts as the other turkeys flew down. I kept waiting, without moving, hoping that a turkey would land in the open below me. I was a pile of mush when the flock finally moved off. I hadn't even tried to draw my bow. There was never an opportunity. But I still shook with excitement when it was over.

Fall archery season runs Oct. 1 through Nov. 15. The firearms season is Oct. 11 through Oct. 19. A special permit is required and allows the hunter to take one turkey of either sex. In 1986 Kansas archery hunters took 83 turkeys for a 21 percent success rate. The 939 active firearms hunters took 527 turkeys for a 56 percent success rate. Turkey numbers are growing, and the birds are expanding their range every year. Fall hunters should enjoy another fine year. *Miller*

FALL SQUIRRELS

The Kansas squirrel season opened June 1, but it's a lot more enjoyable to hunt them in early fall. September and October squirrel hunting offers the small-game hunter plenty of action, while he can also enjoy the finest weather and scenery of the year.

Squirrel hunters in Kansas probably won't see a lot of competition. Squirrel hunting is fairly popular in southeast Kansas, but relatively few hunters pursue bushytails throughout the rest of the state. The largest numbers of squirrels are found in eastern Kansas' timbered areas, where there are both gray and fox squirrels. As you move west, only fox squirrels are found, mainly along creeks and rivers. There are, however, isolated pockets of squirrels in tree belts, hedgerows or woodlots scattered throughout the state.

An observant hunter can find these isolated pockets by looking for stands of mast trees. Most nut-producing trees will hold squirrels. If you find a tree belt with a line of walnut trees, you may have found a squirrel hunting hotspot.

The most popular hunting method is still-hunting. Hunters will quietly ease through the trees listening for squirrels gnawing on nuts, chattering or moving through the treetops. Calm days are best; the hunter can hear better, and the squirrels seem to be more active. Another tactic is to quietly move to a feeding area and take a stand. Squirrels will begin moving about after they have forgotten your presence. A quiet hunter may take several squirrels without moving.

The squirrel season runs through Dec. 31. The daily bag limit is five with a possession limit of 10. *Miller*

NO. 2 DOVE STATE

Kansas is one of the top dove states in the nation. According to a 1987 Central Flyway dove census, Kansas ranks No. 2, behind North Dakota. Kansas was No. 1 in 1986 in the annual survey that counts dove calls along 20-mile routes.

This survey represents breeding adults, birds which may raise as many as three broods a summer, according to Marvin Kraft, waterfowl project leader with the Kansas Department of Wildlife and Parks. It's even possible for birds hatched in early spring to nest by late summer. By the time the Sept. 1 opener rolls around, Kansas can be teeming with doves.

"It seems like doves do better during dry summers," Kraft said. "They're a fairly arid-climate bird. One of their biggest problems can be high winds, associated with thunderstorms. Doves build skimpy nests that the high winds can blow down."

Dove hunting in Kansas is usually a casual affair. Hunters simply line tree belts or sit near ponds in the evenings and wait. Kansas has a large enough population of doves that hunters will find them everywhere. But hunters that are more specific about where they hunt can increase the number of birds they see.

Large concentrations of doves can be seen along country roads in the evening. Doves will often gather on highlines and fences in these staging areas before going to feed, water or roost. Finding one of these staging areas can lead a hunter to a particularly well-used field, tree belt or pond.

Doves prefer to feed in open fields such as sparsely covered weed patches or burned or disced wheat stubble. Hunters can set up near the edges of these fields in early morning or early afternoon for some good shooting.

After a dry summer, watering holes may offer the most productive hunting. A dry summer will concentrate doves on fewer ponds. Doves will go to open ponds with gently sloping mud banks with little or no shoreline vegetation. These types of ponds can offer non-stop shooting in late evening. Pasture ponds and windmill overflows are ideal.

When doves are plentiful, almost any grove of trees will hold roosting birds. Usually the larger the tree belt, the more doves will roost there, but look for tree belts near watering holes or feed fields. These trees will be full of doves.

Doves are one of the most difficult gamebirds to hit with a shotgun, so hunters should bring plenty of shells. Even hunters who shoot well will burn a bunch of shells with the 15-bird daily bag limit.

With that much shooting going on, hunters

must pay particular attention to safety. Dove hunting is usually a social event often involving large groups of hunters. Each hunter must know his or her safe shooting area and must always know where other shooters are stationed.

Miller

EARLY SEASONS

The Kansas Department of Wildlife and Parks approved the early migratory bird seasons in June. In the initial announcement, an early coot season, to coincide with the early teal season, was listed. However, the U.S. Fish and Wildlife Service decided to defer the setting of an early coot season until more flyway council comment was received. There will be no early coot season in 1987. As usual, coots will be legal game during the regular duck season.

The early teal season is set for Sept. 12-20. The daily bag limit will be four, and possession limit will be eight. Shooting hours for the early teal season will be sunrise to sunset.

The snipe season will be Sept. 12 through Dec. 27. The daily limit will be eight, and possession limit 16.

Woodcock season will run Oct. 3 through Dec. 6. The daily limit will be five and possession limit 10.

Rail (sora and Virginia) season will be Sept. 12 through Nov. 20 with a daily limit of 25 and a possession limit of 25. There is no open season on king rails or gallinules.

Dove season opens Sept. 1 and runs through Oct. 30. The daily limit is 15 with a possession limit of 30. *Miller*

HUNT BOTTLENECKS

When a bowhunter scouts his hunting area for a tree stand site, he looks for concentrated deer sign such as a heavily used trail, a line of scrapes or perhaps a creek crossing. A tree stand along any of these areas will probably produce deer, but to lower the odds that deer will pass out of range or sight, hunters should look for bottlenecks in the cover.

A bottleneck is a place where a narrow neck of cover is found. White-tailed deer don't like to walk exposed. They will use every ounce of cover to stay concealed. A wide treelot may have six or seven trails through it. When placing your stand, you have no way of knowing which trail the deer will use on a given day. If you can find a place where this cover narrows down, you'll usually find just one trail with many trails leading to it. Set your stand to one side of this main trail and you'll see more deer.

Miller

SHARP BROADHEADS

All of a bowhunter's gear must be in tip-top shape, but keeping broadheads razor-sharp may be the most important detail for a bowhunter. Dull broadheads will push arteries and blood vessels aside without cutting.

Don't assume that new broadheads will be hunting-sharp when you take them out of the box. Check each blade. Even heads with insertable blades can be sharpened with a stone or crock-stick knife sharpener. Never shoot a broadhead that is not absolutely razor sharp.

Miller

TREE STAND SAFETY

Most bowhunters and many firearms hunters hunt deer from tree stands. While much is said about the safe handling of guns and bows, tree stand safety is often overlooked. It can be dangerous climbing 20 feet into a tree before light, then handling a gun or bow. In fact, more bowhunters are seriously injured from tree stand falls than from mishandling their equipment.

Tree stands range from a two-by-four wedged between two branches to an elaborate portable stand with a built-in ladder. The stands are placed from 6 to 20 feet high. But whatever stand or height you hunt from, carelessness can result in broken bones or even worse.

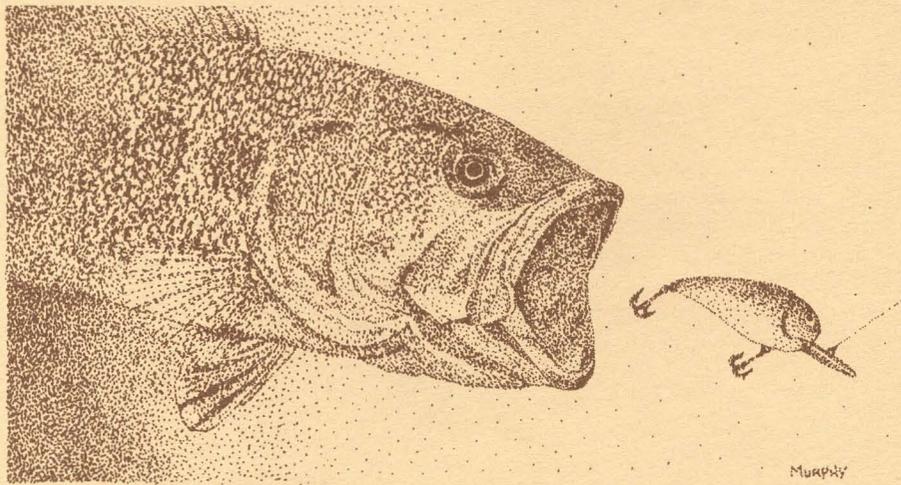
The first precaution is to make your stand secure. Permanent stands are the most dangerous. If a landowner gives you permission to build a permanent stand, check it thoroughly before opening morning. You'll probably need to add some new nails to make the stand safe.

Portable stands come in a variety of styles. Make sure you're familiar with your model's instructions. When the stand is assembled in the tree, test its stability before putting all of your weight on it.

Never climb a tree with a bow or firearm in your hand. Carry a length of cord 4 or 5 feet longer than your stand is high. Tie one end of the cord to the pistol grip of the rifle or limb of the bow. Cover the rifle barrel with a piece of plastic or cloth to keep out debris. Tie the other end of the cord to your belt loop. Once you're in your stand, you can pull an unloaded rifle or bow safely up. Always use an arrow quiver that covers the broadheads.

Another piece of equipment that should not be forgotten is the safety belt. The tree stand safety belt has a strap that goes around the trunk of the tree and one that goes around your waist. If you lose your balance, the belt will prevent a serious fall. The belt also allows you to lean out and provides more shooting positions. *Miller*

FISHING



CRANKBAITING BASS

One warm September afternoon, I discovered a fishing technique quite by accident. I was casting a deep-diving Bomber shad-imitation crankbait when the hooks fouled. I began jerking the lure across the water, trying to free the hooks. When the hooks did free, the lure dove erratically and a bass immediately hit it. I landed the fish and wondered if my hook-freeing retrieve had anything to do with the strike. I cast again, this time cranking fast and pumping the rod tip. Boom! Another strike and another fish. That sequence repeated itself 12 times in a little more than 10 minutes, and I was hooked on crankbaits.

I've worked on my crankbait technique since that day, and I've caught dozens of bass, both largemouth and smallmouth with it. It's more work than just reeling a lure in, and you'll probably get a sore wrist, but it's worth it.

I use a baitcasting reel with about a 5:1 gear ratio and a medium/heavy-action bass rod. I always use deep-diving crankbaits, even in shallow water. My retrieve begins with some fast turns of the reel handle with the rod tip held low. This gets the plug down fast. Then I momentarily stop reeling and pump the rod tip a couple of times, then begin reeling again. This sequence is repeated throughout the retrieve. The lure moves quickly through the water, so you can cover areas quickly. Strikes are hard and vicious.

Ideally, I like to fish rocky points, casting into shallow water and bringing the lure into deeper water. Most deep-diving crankbaits will

get down 10-15 feet, so they're most effective in water less than 20 feet deep. But don't be afraid to crank them through shallow water. Often, when a crankbait drags and bounces off the bottom, it can trigger strikes. The big lip on deep-diving plugs keeps the hooks above most snags. If the lip does hang up, give the plug some slack and it will usually float free. A crankbait can also be worked this way through downed timber, although hangups will be more frequent. Bass will often slam a plug that's just bumped a limb and broken free.

The fast-cranked crankbait can work two ways. When bass are actively feeding on shad or other baitfish, the erratically worked crankbait looks much like panicked prey. The fast-moving lure also works when bass aren't aggressively feeding. Some anglers believe bass will respond to a fast-moving bait with a reflex strike, not really knowing what they're chasing, but not wanting it to get away. *Miller*

SET THE DRAG

Fishermen attend to countless details when preparing for a fishing trip. But one minor task often is forgotten until it's too late. It's too late to check and set the drag on your fishing reel after that big one has just broken off, yet it takes only a few seconds. The drag on a reel that's set idle for several weeks will occasionally lock up. Before you begin fishing, make it a habit to pull line from the reel, making the drag slip. Adjust it to your liking, and you're ready for that big one that won't get away. *Miller*

TRAINED BASS

This fall or next spring, several Kansas reservoirs will receive stockings of intermediate-sized (6- to 10-inch) bass. The bass were trained to feed on prepared pellet food through the summer, rather than stocked as fry or fingerlings. The program is the result of studies done by former Wildlife and Parks fisheries investigator Dave Willis. Willis found that late-summer nettings showed numerous small bass in many state reservoirs. However, these naturally produced fish never showed up the next spring. Willis concluded that the fish were being preyed upon or outcompeted by other sportfish through the winter. His recommendation was to stock these lakes with larger bass that would have a much better chance of survival.

To raise a large number of bass to intermediates, fingerlings must first be trained to eat prepared pellet food. Bass are natural predators and convert to a fish diet early in life. It's too expensive to feed them a natural diet because of the cost of raising the forage fish. Feeding bass a natural diet also requires the fish to be kept in ponds. Pellet-fed bass can be kept crowded in raceways or cages.

Last June, hatchery personnel took several hundred thousand fingerling bass (1¼ inches long) and confined them to cages. The fish are crowded at a density of 650 to 1,200 per cubic foot because they learn quicker under competitive conditions. Perhaps by example, when one fish begins to eat the pellet feed, others will follow. For two days the fish are fed a ground carp slurry, which is sprayed onto the water. The fish learn to associate feeding with the slurry hitting the water. Then a moist pellet food is mixed with the slurry for two days. Gradually, the slurry is eliminated and only the moist pellets, mixed with water, are fed. After seven days of training, the fish will be eating a 100 percent dry-pellet food.

Once the fish are trained, biologists must watch them closely. Under crowded conditions, disease can spread quickly. And some individual fish may grow faster than others. When these fish get larger than their hatch mates, they may begin to feed on them. These cannibalistic individuals must be removed.

The program has been successful as far as training the bass, but biologists won't know how well these fish do in reservoirs until next year. If the intermediate bass survive as they should, some of our reservoirs will offer improved bass fishing in the future. *Miller*

ISSUES

REFUGE FEES

The U.S. Fish and Wildlife Service is planning to charge entrance fees at 19 national wildlife refuges beginning in 1988. The fees were authorized in the Emergency Wetlands Resources Act of 1986.

The Service's proposal would set the fees at not more than \$3 per person or \$7.50 per non-commercial vehicle. People with a current federal duck stamp would be exempt from the proposed fees. Also, anyone holding a Golden Eagle Passport or a Golden Age Passport could enter the refuges without additional charge.

An estimated \$8.3 million will be collected the first year. Thirty percent of the receipts would be used for refuge operation and maintenance and 70 percent for wetland acquisition.

Refuges included in the fee proposal are: Dungeness (Washington), Kilauea Point (Hawaii), McKay Creek (Oregon), Aransas (Texas), Bosque del Apache (New Mexico), Sequoyah (Oklahoma), DeSoto (Iowa), Muscatatuck (Indiana), Ottawa (Ohio), Seney (Minnesota), Sherburne (Michigan), Hobe Sound (Florida), Loxahatchee (Florida), St. Marks (Florida), Chincoteague (Virginia), Forsythe/Brigantine (New Jersey), Montezuma (New York), Parker River (Massachusetts), and National Bison Range (Montana). *Wildlife Management Institute*

ANTI-HUNT CARTOON

A blatant anti-hunting cartoon program is now being aired on cable stations across the nation. Home Box Office (HBO) debuted "Seabert the Seal" April 5, 1987. The show will be shown for 26 weeks on Sundays in the 8:30-9 a.m. time slot. Seabert is a production of Sepp-Inter and BZZ Films, the same tandem that produces NBC's "The Smurfs."

The show's introduction is upsetting sportsmen. A kindly male voice says, "Once upon a time, civilized man and beasts of the wild lived together in harmony, neither threatening

the other's existence." Pictured is a green valley with cave men frolicking with friendly animals. Then the music becomes threatening and loud. The voice becomes menacing: "But unfortunately, the world is different today. Many wild animals are disappearing from the earth because man is hunting them and destroying their natural habitat. The earth's most precious resources are being threatened by the destructive forces of civilization. The number of species facing extinction has reached to a frightening peak. It is the aim of this dedicated trio, Tommy, Aura and Seabert, to protect endangered animals so once again all inhabitants of the world can live together in peace."

An HBO news release notes that "Episodes will take Seabert and his friends to Europe, Asia, Africa and Latin America in their efforts to protect the earth's wildlife. The action-packed stories all stress positive values like friendship, cooperation and concern for the environment."

The show, set in Greenland, depicts whaling ships as sinister figures lurking in the sea. A hunter is shown sneaking up a mountain and putting his rifle to the head of a placid bighorn sheep. One episode calls seal hunters "bad men." Another shows a trapper as a buffoon who gets caught in his own trap. The trap is shown to have large jagged teeth.

To protest this program, write: Michael Fuchs, Chairman and Executive Officer, Home Box Office, 1100 Avenue of the Americas, New York, NY 10036. *The Wildlife Legislative Fund of America*

ENVIRONMENT SERVICE

Bill Layher, formerly an aquatic ecologist with the Kansas Department of Wildlife and Parks, will head the new Environmental Services Section for the agency. The section was formed to review development projects that affect the environment. Layher served in a similar capacity as an aquatic ecologist with the Fisheries Division. He and his counterpart from the Wildlife Division, terrestrial ecologist Bob Wood, were reviewing 300-400 projects each year.

Layher, Wood and newly hired aquatic ecologist Laurence Zuckerman will form the section, reviewing and advising on industrial developments, watershed projects, pipeline projects, transmission line construction and hydropower projects, to name a few. Their purpose is to examine project plans and determine how construction will have the least impact on the environment.

"We will work with developers to improve designs of projects so they're environmentally compatible," Layher emphasized.

The section will also work extensively with the state Legislature to ensure that the environment is protected through future legislation. Current issues include stream channelization and rehabilitation.

One of the biggest threats to wildlife resources is loss of habitat. Environmental services will try to minimize habitat loss in development projects. They will also, through mitigation agreements, suggest habitat replacement when a project is planned. For example, when a flood control project floods an area of timber and a stream riffle area is lost, the developer may be asked to replace the terrestrial habitat with plantings and build new areas of riffles on the stream.

Layher, in his former position, was actively involved in developing the Fish and Wildlife section of the State Water Plan. Environmental Services will continue in this role. *Miller*

WHAT'S RIGHT

PROTECT WHAT'S RIGHT (PWR) is a national campaign designed to mobilize American sportsmen with the tools and training to reach the public with the truth about wildlife and the vital role sportsmen play in wildlife management. The campaign was started early this year with meetings attended by hundreds of sportsmen in New Jersey, Tennessee and the New England states.

In April, dozens of New York sportsmen's groups were introduced to PWR during the annual meeting of the New York Conservation Council. The meeting was a success. PWR was also presented to sportsmen's club leaders attending the annual Minnesota Deer Classic in St. Paul.

For more information about the teaching materials provided in the PWR campaign, write: The Wildlife Legislative Fund of America, 50 West Broad St., Columbus, OH 43215. *The Wildlife Legislative Fund of America*

NATURE

MONOGAMY

Monogamy may seem admirable to Western traditionalists, but in the animal kingdom a long-term relationship is uncommon. According to *National Wildlife* magazine, only 3 percent or 4 percent of all mammal species practice monogamy. Moreover, laboratory experiments show that many monogamous mammals will cheat on their partners, given the opportunity.

Coyotes, wolves and most members of the dog family are monogamous, and so are many rodents including beaver, muskrat and a few species of moles. Other monogamous mammals include some primates, shrews, bats, antelope and others. Monogamous mammal species are greatly outnumbered by birds, but mammals seem to practice a more rigorous form of loyalty. Many birds, especially small ones like sparrows, remain attached to their partners for only one season. Monogamous mammals, however, usually mate for life.

Considering the evolutionary advantages of having multiple partners, scientists are interested in why animals become monogamous. Sometimes the answer appears to involve territory. Elephant shrews, for example, pair up to defend their food supply, driving out all other male and female rivals. Before long, the sole remaining male and female learn to tolerate each other in what one expert calls "monogamy by default."

The costs of motherhood may also help explain an unusual phenomenon found mostly among monogamous mammals: fathers that care for their young. Few males will help rear young whose paternity is in question. But if a male knows it is definitely the father, it is more willing to invest in the offspring.

Some researchers, however, question whether monogamous species form truly exclusive relationships. Captive wolves, coyotes and monogamous monkeys do not hesitate to engage in what biologists call "extra pair copulations." In the wild, the chance of such engagements is limited, either because no other potential mates are available, or because a jealous mate is close at hand. "It's enforced monogamy, as compared to true monogamy," says ethologist Fred Harrington of Canada's Mount Saint Vincent University. "If a wolf or coyote gets the opportunity to fool around, it will."

If the grounds for monogamy are shaky among wild animals, among humans they were virtually unknown until recently. Patricia Wright, an anthropologist with Duke University's Primate Center, observes that 87 percent of the human cultures on this planet are not monogamous. "And if you look at the traits common among monogamous mammals," she says, "people just don't fit the mold." Devra Kleiman, assistant director for research at the National Zoo, concludes that monogamy is just a "cultural overlay" peculiar to Western society. She says that "we have an apparently monogamous system with behavioral correlates more appropriate to polygamy."

To at least one researcher, however, humans would be well advised to emulate some of their wild cousins. Ron Tilson, a biologist with the Minnesota Zoo, notes: "Monogamous mammals never get tired of each other, they never fight and there's no such thing as desertion. Somehow, we haven't evolved the right social attributes yet to keep the male and female in that kind of harmony." *National Wildlife Federation*

TO ALL TEACHERS

As a reminder to all teachers, librarians and parents, the Kansas Department of Wildlife and Parks has made available to all Kansas schools a series of K-12 wildlife education materials.

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

Available at the secondary level: 7-12 curriculum sent to every biology teacher, the compilation of "Nature's Notebook," and audio-visual materials from the free-loan Wildlife Reference Center.

(Middle schools have been sent the 4-12 materials, as well as the "Nature's Notebook" manual and Wildlife Reference Center catalog.)

Check with your school librarian for the location of the curriculum. If the non-consumable materials have been lost or misplaced, contact this office for duplicates. Distribution

for out-of-state or personal use are available at cost.

For more information on 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*

MOBILE HOME

Jeanna and Kent Verden of Kansas City found a family of downy woodpeckers in the way of progress. The Verdens had enjoyed watching the woodpeckers build the nest and raise their young, but the construction of their swimming pool called for removal of the tree the woodpeckers were living in.

After talking with several Audubon Society members, it was decided to cut the tree off one foot above the nest hole and two feet below the hole. The tree section was then tied into an adjacent tree. The move was a success. Within 45 minutes, the parent downy woodpeckers were feeding their young in the relocated home. *Burroughs Audubon Society, Greater Kansas City*

BRIGHT FUTURE

More than 1.4 million acres of Kansas farm land are enrolled in the federal Conservation Reserve Program (CRP), following the third sign-up period. Nationwide, 10,572,402 acres were added to the program during the February sign-up, bringing the total to nearly 20 million acres.

Conservationists see the program as highly beneficial to wildlife, because it requires enrolled lands to be planted in permanent plant cover. Many Kansas landowners are planting native grasses on CRP acres, providing important habitat for upland birds and other wildlife.

Under the CRP, landowners are paid for taking highly erodible land out of production for a 10-year period. In addition to wildlife benefits, the CRP acres will improve soil stability and water quality.

More than 13,000 Kansas farmers and ranchers have lands enrolled in the CRP. Three extreme southwestern counties — Morton, Stanton and Hamilton — have the greatest participation, holding more than 17 percent (251,000 acres) of the state's total CRP lands. *Rob Manes, education coordinator*

NOTES

NEW AGENCY

As of July 1, 1987, the Kansas Fish and Game Commission ceased to exist. Under Gov. Mike Hayden's Executive Reorganization Order, the Fish and Game Commission has been combined with the Kansas Park and Resources Authority to become the Kansas Department of Wildlife and Parks.

Under Hayden's plan, the new agency will be structured with a cabinet-level Secretary overseeing all six divisions. The plan also calls for two undersecretaries to assist the Secretary. Parks will become a division along with Administrative Services, Wildlife (formerly Game), Fisheries, Law Enforcement and Information-Education.



Dr. Gerald W. Tomanek

Hayden abolished the five-member commission and named a new seven-member, bipartisan commission that will advise the new agency in policy and fee structure. **Dr. Gerald W. Tomanek** of Hays was named chairman of the new commission. Dr. Tomanek, who recently retired as president of Fort Hays State University, holds a doctorate in botany. An avid hunter and fisherman, he will serve a four-year term.



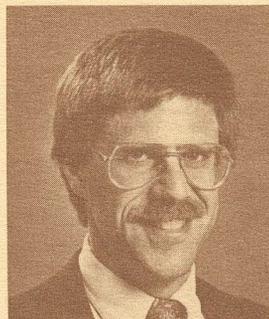
Ronald Hopkins

Ron Hopkins of Wichita, the only former Fish and Game commissioner renamed to the new commission, is an Independent Insurance agent and owner of Fish and Ski Marine in Wichita. Hopkins has served on the board of the Kansas B.A.S.S. Chapter Federation and is active in a local bass club, Kansas Bassmasters. He is also a member of the National Audubon Society, the Kansas Wildlife Federation, Quail Unlimited, Ducks Unlimited, B.A.S.S., U.S. BASS, the National Rifle Association and the Kansas Marine Dealers Association. Hopkins will serve a four-year term.



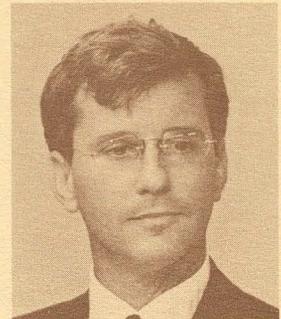
William Anderson

William A. Anderson Jr. of Fairway is an agent with Massachusetts Mutual Life Insurance Co. He has been director of the Kansas Wildlife Federation, served as executive director of Ducks Unlimited (DU) and worked extensively with the National Wildlife Art Show for DU. Anderson is a member of the National Rifle Association, National Wild Turkey Federation, the Marais des Cygnes Valley Waterfowl Association and the Foundation for North American Wild Sheep. He will serve a three-year term.



Ronald A. Vine

Ronald A. Vine of Topeka is the Director of Parks and Recreation for the City of Topeka. He manages a yearly operating budget of \$6.4 million and a current \$7.1 million capital improvement program. He received a bachelor of arts degree in history and a master's degree in recreation and park administration from the University of Illinois. He is nearing completion of a master's degree in public administration at the University of Kansas. Vine was awarded the Distinguished Service Professional Award by the Kansas Recreation and Park Society in 1984. He will serve a two-year term.



Dr. William R. Browning

Dr. William R. Browning of Madison has a private medical practice and ranching operation in Madison. He worked as a member of both the Kansas Grassroots Association and the National Audubon Society to attempt a compromise to the Prairie Park issue. He will serve a three-year term.



Kathy Brown George

Kathy Brown George of Junction City is currently an administrative assistant in the Planning Division for the City of Junction City. Before joining the City staff in 1985, George was executive director of the Geary County Historical Society. She serves on the board of directors of the Kansas Museums Association, is a member of the Governor's Nongame Advisory Council of the Kansas Wildlife Federation, Kansas State Historical Society, Mountain Plains Museum Association,

Geary County Historical Society and the Geary County Fish and Game Association. She will serve a one-year term.



Edward Anderson

Edward B. Anderson of Elkhart is the Director of Respiratory Care for the Morton County Hospital. He is currently chairman of the Elkhart Recreation Commission and scouting coordinator of Troop 199. He is active in wildlife conservation as a member of the National Rifle Association, Quail Unlimited and the Cimarron Sportsman's Club. He is currently vice president of the Kansas Wildlife Federation. He has been a Federal Grazing Affairs lobbyist for the National Wildlife Federation in Washington, D.C., and serves on the Recreation and Use Management Committee for the Cimarron National Grasslands. He will serve a four-year term.



John Strickler

Last May Hayden named **John Strickler** his Special Assistant for Environment and Natural Resources. Strickler, from Manhattan, was Associate State Extension Forester at Kansas State University. He will assist the Governor for two years while on leave from the Extension Service.

In July Hayden announced that Strickler would also serve as interim Secretary of Wildlife and Parks until the new Secretary was hired. As this issue went to press, Hayden had not announced his new Secretary. As interim Secretary, Strickler made tentative plans for merging the two agencies. *Miller*

NONGAME NOTES

The 1986 *Annual Report on Kansas Nongame and Endangered Wildlife* summarizes all management, information-education, research and urban projects funded through the Chickadee Checkoff in 1986. *Nongame Abstracts* is a collection of abstracts of most of the nongame species studies supported through the Checkoff since 1980. Both of these publications are free and available by writing: Kansas Department of Wildlife and Parks, Wildlife Division, Rt. 2, Box 54A, Pratt, KS 67124.

The deadline for submitting nongame research, conservation or information-education proposals to the Kansas Nongame Program is Oct. 15. The Nongame Program provides financial support to individuals and organizations for nongame research, habitat improvement and information-education projects. For more information on the Nongame Program contact: Marvin Schwillig, Kansas Department of Wildlife and Parks, P.O. Box 1525, Emporia, KS 66821. Or call (316) 342-0658. *Charles Nilon, nongame biologist*

MORE GROUSE

The Kansas City Chapter of Safari Club International has donated \$5,500 to the ruffed grouse reintroduction program making their total donations \$29,649.15. Since 1983, 285 grouse have been released in Kansas. The grouse were trapped in Wisconsin and air-freighted to Kansas.

Small-game biologist Randy Rodgers is running the show for Wildlife and Parks. Each year he goes to Wisconsin and hires a person to trap grouse for the program, then returns to Kansas to select suitable release sites for the birds.

"Without the Safari Club's funding, this program wouldn't be happening right now," Rodgers said. "It shows you what a conservationists' organization can do for wildlife."

Rodgers is optimistic about the ruffed grouse program. "We haven't had any failures at any of our release sites," he said. "We're not sure how much the birds are spreading out, but they seem to be doing well."

Now there are grouse in five Kansas counties. After the 1987 trapping season, Rodgers hopes to add two or three counties to the list. Ultimately, there is suitable habitat in 12-15 counties. And Rodgers thinks this will be the best year ever. He said grouse numbers are up in Wisconsin and he has hired an experienced

trapper. Traps were set in mid-August and birds will be trapped and shipped to Kansas through mid-October. Rodgers hopes to release more than 100 birds in 1987. *Miller*

TWO REMEMBERED

The Kansas Department of Wildlife and Parks lost two long-time, dedicated employees this summer. Both men, Aaron "Jim" Lane and James "Junior" Gump, both from Pratt, died suddenly. Each man had worked many years with the agency.

Jim Lane died June 23 at his home. He was 48. Jim was an engineer for Wildlife and Parks for 23 years. Kansas sportsmen enjoy the results of Jim's labor when they use boat ramps, fishing piers, shooting ranges and other public facilities he worked on.

Junior Gump died July 1. He was 57. Junior, a mechanic for Wildlife and Parks for 18 years, kept a multitude of agency vehicles in running order. Many people who stopped to see the Wildlife and Parks wildlife museum enjoyed a visit with Junior, who lived next door to the museum. Junior always had a good word to say to everyone.

TAX PREPARERS WIN

To show our appreciation for the state tax preparers' efforts in promoting the Chickadee Checkoff Program, the Kansas Department of Wildlife and Parks held a prize drawing. Tax preparers who helped solicit donations to the nongame program entered the contest to win one of 25 prizes.

Embassy Suites Hotel of Overland Park donated the grand prize, a weekend for two at the hotel. Mrs. Robert Wilson of Chanute was the happy grand-prize winner. Gott Corp. donated 24 ice chests for second-prize winners. All were presented to tax preparers throughout the state.

The Chickadee Checkoff Program allows taxpayers to check a box on their state income tax forms and make a tax-deductible donation to help nongame wildlife. Through July 8, the program has received a record-high \$208,454 in donations, plus about \$5,000 in direct contributions. This most recent total surpasses last year's donations by more than \$75,000. The money will go to the nongame wildlife research, habitat and reintroduction programs. Wildlife and Parks would like to thank the tax preparers and contributors for their record-breaking efforts this year. *Miller*

NATURE'S NOTEBOOK

by Joyce Harmon Depenbusch Wildlife Education Coordinator

FUN AT THE FAIR

This September, while you're visiting the Kansas State Fair in Hutchinson, stop by the Wildlife and Parks booth. Take along this issue of "Nature's Notebook" and learn more about some of the animals you'll see there. These animals are temporarily on loan from an animal rehabilitator or zoo. Color the pictures below to look like the animals you see.

One of the most popular animals in our zoo exhibit is the deer fawn. The light spots on the fawn's tan coat helps it blend in with the environment. The spots will disappear when the fawn is about three months old. Deer are **herbivores**, or plant eaters, browsing on leaves, stems, buds, bark and agricultural crops. Fawns are generally born in May or June and may be one of twins. They are considered adults when they are about 1½ years old.

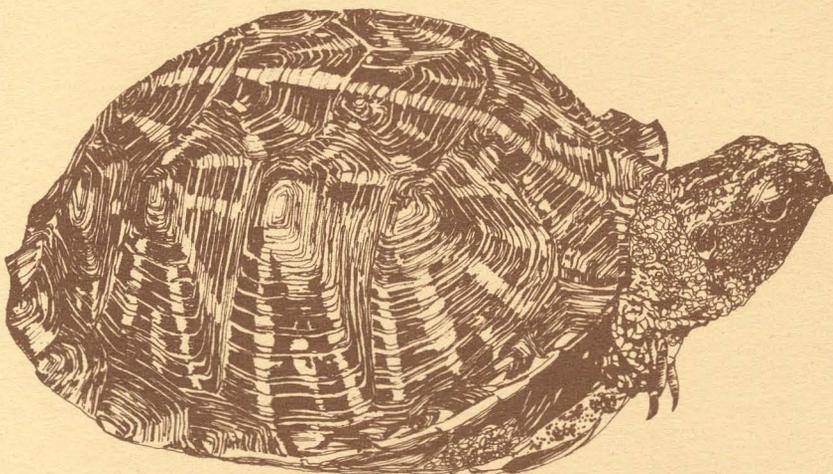
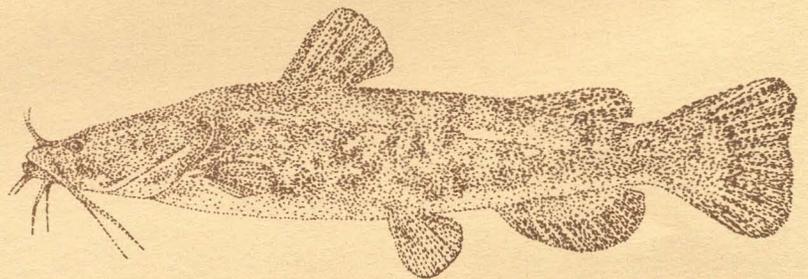


Nicknamed the "monkey-faced owl," the barn owl's ability to catch mice and rats makes it helpful to people. They do not build nests, but use hollow trees, banks of hills and deserted buildings to nest in. Barn owls have excellent hearing and night vision.



Raccoons are best known for the banditlike appearance of their black mask and striped tail. Raccoons are **omnivores**, eating both plants and animals. Depending on the season, raccoons may eat crayfish, turtles, fruit, nuts, agricultural crops or insects. Raccoons live where trees are abundant, but these mammals have adapted to city life where they may raid garbage cans for food. Raccoons have three or four young per litter in April or May, and are **nocturnal**, or active at night.

The biggest catfish in the aquarium is a flathead. How much do you think this fish weighs? Guess how it got its name. Flathead catfish are common in the larger streams and reservoirs of Kansas. This fish lives on the river bottom, near cover such as fallen trees, concrete aprons of dams, or bridge-supports near deep pockets of water. Flatheads spawn in June or early July in cavities. They are **carnivorous**, or meat eaters, eating insects when they're young and fish as adults. The record Kansas flathead weighed 86 pounds, 3 ounces.



Our state reptile is a **terrestrial**, or land, turtle with a brown and yellow upper shell. Found throughout Kansas, the ornate box turtle feeds on beetles, caterpillars, earthworms, grasshoppers, other insects and fruit. This turtle spends the winter burrowed underground and will come out when the spring weather is warm and moist.



Guy Coheleach painting

Kansas First Of State

Guy Coheleach of Bernardsville, N.J., painted this rendition of a pair of green-winged teal, which will serve as the design for the Kansas First of State waterfowl stamp. Kansas becomes the 39th state to require its waterfowl hunters to buy the habitat stamp.

The \$3 stamp will be required of all resident Kansas waterfowlers who are required to purchase a hunting license, beginning with the September teal season. All non-resident waterfowl hunters visiting Kansas must buy the stamp.

The Kansas Ducks Unlimited Council proposed the stamp in August 1986. The council believed the duck stamp concept would provide matching funds for the money the national DU organization has set aside for Kansas under the MARSH program. MARSH, which stands for Matching Aid to Restore States Habitat, has made more than \$209,000 available to the Kansas Department of Wildlife and Parks.

All of the monies raised from the sale of the waterfowl habitat stamp will be earmarked for waterfowl habitat improvement, development and acquisition in Kansas. The Department is expected to receive from \$90,000 to \$100,000 from stamp sales in Kansas. An additional \$30,000 to \$45,000 will be collected from sales to U.S. stamp collectors.

In addition, Kansas Ducks Unlimited will receive \$37.50 from the sale of each stamp print. Twenty percent of the print proceeds will be set aside for the restoration of Cheyenne Bottoms. The remaining 80 percent will be used to develop a Kansas Donor Project in Saskatchewan or Alberta.



THE INCREDIBLE HULL

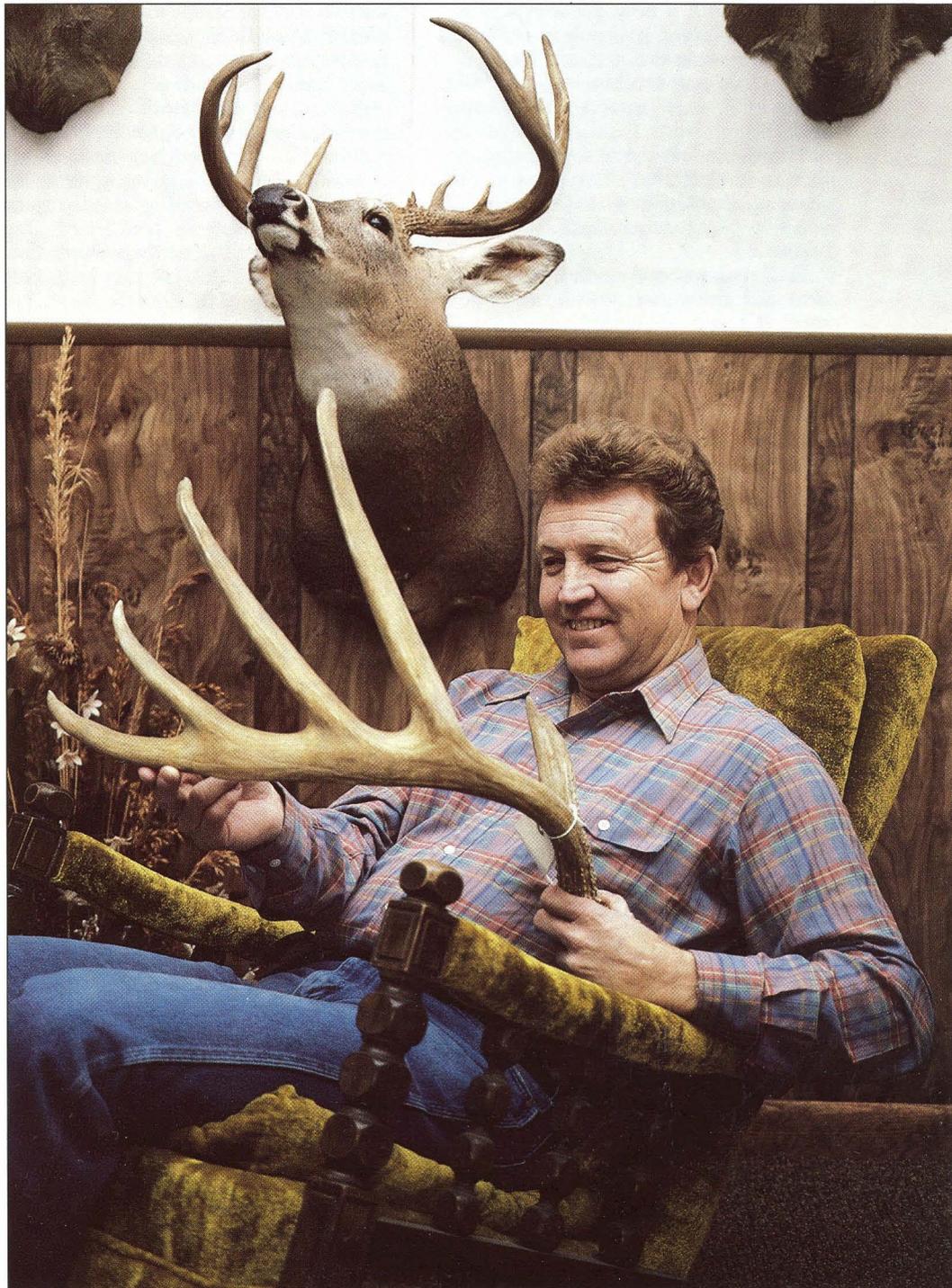
Russell Hull has several Pope-and-Young bucks to his credit, yet the veteran bowhunter learns something new each year.

by Mike Miller
Associate Editor

photos by Gene Brehm

The harder something is to get, the more rewarding it is when you finally get it. Bowhunting deer is a lot like that. If a hunter just wanted venison in the freezer, he'd hunt with a firearm in Kansas, where nearly 70 percent of firearm hunters bag deer each year. Bowhunting, however, is more demanding. Just 30 percent of Kansas bowhunters bag deer. But some hunters will look for an even more difficult challenge. They bowhunt trophy-sized bucks, bucks that have survived many hunting seasons by learning to avoid hunters. These hunters will hunt 10 times as much as the average hunter, passing up smaller bucks throughout the season, knowing there's a good chance they'll end the season without getting a shot. Russell Hull is one of these dedicated hunters.

"It's amazing," says the 50-year-old Hill City native. "Every year I learn something new. I can't believe it. I



Years of experience as a bowhunter means Russell Hull has seen his share of huge bucks. He's managed to get shots at some of those big white-tailed deer and posed with several of his biggest racks (at left). Beginning at the lower left of the photograph, the Boone-and-Crockett scores for these five bucks are: 140, 156¹/₈, 143³/₈, 150³/₈ and 146⁴/₈. Two of these five bucks were taken while stillhunting. In his family room in Hill City, Hull (above) admires one side of a drop rack. If the mate to the side Hull is holding had an equivalent measurement, the rack would measure 205 B&C points, just shy of a world record. To Hull's knowledge, no one has seen this monster buck alive.

even find spots around here that I haven't hunted before." Hull has spent the last 22 years learning to bowhunt deer. When Kansas held its first deer season in 1965, Hull decided to bowhunt on a whim. He'd been target shooting with a bow for seven years, and the thought of hunting with the primitive weapon intrigued him.

That first year Hull managed to kill a huge buck that scored 143% Pope-and-Young points. And from that day on, he was hooked on bowhunting. Although taking that first buck didn't seem all that difficult, it took Hull 10 years to bag another Pope-and-Young buck.

Hull took to bowhunting with a passion and drive that few hunters possess. It's not uncommon for him to spend more than 200 hours hunting each season. And that doesn't include the out-of-state hunts he may take to Colorado and Nebraska. Even when the seasons end in December, Hull is still thinking about big deer. He spends January and February looking for big bucks and talking to landowners. He likes to scout and gain hunting permission early. In late winter, deer are more visible because they feed more during the day. If Hull sees a big buck, he'll ask permission to hunt and scout the area for the next season.

In March and April, Hull puts on his walking shoes. It's not unusual for him to walk 80 miles or more during these two months, scouting new areas and looking for shed antlers.

"I look for tracks, racks and scrapes," he says. "Rubs and licking branches also tell me a buck is still in an area." A shed antler is probably the most

promising find. The rack tells Hull that a buck is still in the area, that it survived the rifle season, even what it might score. Each shed antler Hull finds is a prized possession, kept much like an artifact collector keeps a rare arrowhead. He keeps many of the outstanding antlers on display in his trophy room, and, if asked, will tell the story behind each one.

In late April, Hull's attention is temporarily diverted to bowhunting turkeys. But you can bet his eyes are always looking for big buck sign.

May and June are slow months as far as deer scouting is concerned. But don't think Hull is resting. Other than his family and job at the Hill City power plant, Hull's life revolves around bowhunting. He runs a business in his farm warehouse, marketing a cover scent called Cover Up. He also makes and markets deer calls and other hunting accessories. On top of that, he farms 750 acres of cropland. If there is such a thing as spare time, he spends it drawing and painting wildlife scenes, playing in his one-man band and writing bowhunting articles for magazines. He's also written a book titled *Trophy Bowhunting The Supreme Challenge*. It's hard to believe a man with this much energy can sit motionless for hours in a tree stand. But he does.

In July it's time for more serious buck scouting. On what Hull calls a "magic date"—July 10—he starts looking for deer again. For some unexplained reason, he says deer become active and are more easily seen at this time. The bucks are still in velvet, but most of the antler growth is completed.

If Hull spots a huge buck, he seeks hunting permission and scouts the area on foot.

The scrapes and rubs haven't been worked for several months now, but they're still visible and give Hull an idea of deer movements. As he scouts, Hull is looking for tree-stand sites. A good stand site allows Hull to get into the area without spooking deer. But this isn't as easy as it sounds. He prefers a stand he can approach from downwind of the deer bedding area. And Hull doesn't like to cross any main trails or walk exposed across a large open area. Hull will try to locate three or four stand sites so that he doesn't have to hunt from the same stand every day. He believes deer will pattern a hunter who does this and learn to avoid the stand.

Hull also looks for an area that will enable him to call deer. He's been quite successful using rattling antlers and deer calls just before and after the rut. Hull likes to put stands near active scrapes, believing that a buck is more likely to be within hearing distance.

Hull's rattling and calling sequence goes something like this: After reaching the stand before daylight, he'll blow a soft bleat call to relax any deer that may have heard his approach. As it begins to get light, Hull will rattle softly in case any bucks are nearby. He starts with a clash of the antlers, followed with grinding and rattling of the antlers. As he rattles, he blows on the snort and grunt calls held in place with a brace worn around his neck. After

How Hull Hunts

The following tips and suggestions are condensed from Russell Hull's book, *Trophy Bowhunting The Supreme Challenge*.

Early Scouting — I scout deer in February because deer feed more during the day and are more visible during this time of year. Trails and scrapes are still being used and are easily seen before spring vegetation grows up. The sudden increase of human activity and scent that occurs when you scout just prior to the season opener may alarm deer and cause them to avoid an area. You'll avoid this by doing the bulk of your scouting in late winter. You can also ask for hunting permission earlier than most hunters are even thinking about deer hunting.

Tree Stand Selection — Choose a tree stand site that you can get to

without spooking the deer in the area. Pick a tree that will break up your outline. You may have to move your stand higher late in the season when the leaves have fallen. Never place your stand directly over a trail. Place it high and to the side of the trail. Make sure your stands are comfortable, because if you're comfortable, you'll move less and stay in the stand longer. Have several stands so you won't have to hunt the same spot day after day. Wind direction should be the deciding factor when choosing a stand. Always park your vehicle far enough away from your position so its presence doesn't interfere with deer movements.

Equipment Preparation — Have your equipment ready long before the season rolls around. I do some target

shooting throughout the year, but I try to use the same set-up that I hunt with. This includes a full quiver attached to my bow. I use field points until a month before season, at which time I start practicing with broadheads and a cut-out silhouette of a life-size deer. At this time I begin practicing a lot from tree stands.

Your equipment should be as quiet as possible. I put moleskin on my arrow rest and site window. And always dress in layers, keeping bulk away from your arms. This makes the movement needed to draw the bow easier and quieter.

Mental Preparation — Prepare yourself mentally for the moment of your shot. Leave nothing to chance. And never release an arrow unless you're sure of the shot.



about a minute of calling, Hull hangs up his antlers and picks up his bow. He listens and watches for a buck approaching. He repeats the sequence as often as every 10 minutes when deer are likely to be moving. Then later in the morning, he calls about every 30 minutes. Hull favors calm days for rattling because the sound carries farther, but he doesn't like still days. "If it's deathly still, you probably won't get a shot off if you call a buck in," he says. A buck will probably hear the sound of your movements as you draw your bow.

On windy days Hull prefers to stillhunt. "Stillhunting is really tough," he says. "It takes a lot of patience and time, and you're not going to be successful to any great extent. Look at me. I've hunted 22 years, and I've only taken six deer stillhunting, (including three Pope-and-Young bucks). That's probably six more than a lot of hunters, though."

Stillhunting may be the most challenging way to hunt whitetails. And Hull seems most proud of the bucks he's taken while using this technique. "You can stillhunt all morning and (even) if it takes you 20 minutes to get back to your vehicle, you probably went too fast," he says. Hull does most of his stillhunting during the rut when bucks are on the move. You have to see the deer before they see you, and that's easier done when the deer is moving. Seeing and sneaking up on a bedded deer is extremely difficult. Hull will use a turkey call when he stillhunts, believing that deer that have heard him can be fooled into thinking he's a turkey when they hear his yelps.

Hull hunts trophy-sized whitetails for his own satisfaction, although with his business and reputation there's more pressure on him now to take big bucks. But he doesn't believe that it's the only way to hunt.

"I don't think everybody has to be a trophy hunter," Hull says. "But if you're satisfied with what you've done and want to better it, trophy hunting is the way to do it." Hull shot many smaller bucks and a few does during the 10 years after that first big buck. Now hunting is more rewarding if he hunts for a truly big buck.

After 22 years, Hull is still as devoted to bowhunting as he ever was. Hull's wife and daughters have been understanding, but he's not neglected his family either. Wife Joan helps run the business and farm. And Hull has taken the time to include his daughters in his hunting, too. He may be most proud of the huge buck he took one morning with Linda in the stand with him. She was 7 years old at the time.

For the record (although Hull is reluctant to say so), he has nine whitetails, one mule deer, an elk, an antelope and a mountain lion in the Pope-and-Young record book. He's

taken several other bucks that would make the book, but book bucks aren't as important as they once were. He's not after numbers. He's forever in search of his next challenging hunt.

What does the future hold for Hull? "I'll probably keep doing the same thing I've been doing. But, physically, it gets tougher as I get older, because I hunt awful hard," he says, pensively. "I still get a thrill out of hunting, but I suppose some day I won't be able to go at it as hard."

You can bet that until then, Hull will be out there, day after day, watching, learning and hunting. **KW**



Hull relaxes in his easy chair, talking about big bucks and his love of rattling the big ones in.

50 Years Of Conservation:

The Pittman-Robertson Act

Bringing Wildlife Back

The First 50 Years 1937-1987



The Pittman-Robertson Federal Aid
in Wildlife Restoration Act

The Pittman-Robertson Act, signed into law on Sept. 2, 1937, is the backbone of conservation funding in all 50 states.

by John Herron

Federal Aid Coordinator
Pratt

September marks the 50th anniversary of one of the most important pieces of wildlife legislation ever passed — legislation that provided funding, goals and standards for every state wildlife agency in the nation. Yet today, few people outside the wildlife profession are even aware of the act, even though every hunter contributes to it each year.

This legislation, titled the Federal Aid in Wildlife Restoration Act, is a long name for an act usually referred to as the Pittman-Robertson Act, or simply "P-R." The act, introduced by Sen. Key Pittman of Nevada and Rep. Willis Robertson of Virginia, was signed into law by President Franklin D. Roosevelt on September 2, 1937. P-R was a landmark in wildlife conservation because it provided the means for not just protecting wildlife from overuse, but for *restoring* wildlife numbers to their full potential as well.

In its original form, P-R provided funds for state wildlife agencies based upon a 10 percent (now 11 percent) federal excise tax on sporting arms and ammunition. Later amendments added an 11 percent excise tax on archery equipment and a 10 percent tax on handguns. These excise taxes, which are collected at the manufacturer's level, are divided among the states based upon each state's land area and number of licensed hunters. For Kansas, this meant an allotment of \$16,909 in 1938, enough money to buy more than 900 acres of land at the time. Today the act provides more than \$2 million a year to the state.

The timing of the act may seem unusual to some; legislation that provided money to the states passed during one of the worst economic periods in our nation's history. But times were also bleak for wildlife. Three hundred years of settlement with ax, plow and gun had taken its toll on both wildlife and habitat. Perhaps the situation was best described by Lonnie Williamson, who wrote:

But something went wrong as civilization crept across the land. Wildlife was in the way. Much of it began to disappear with immigrating humanity, felled forests, plowed prairies,

overgrazed deserts and market hunting. Wild creatures were no match for the unchecked invasion by ax, plowshare, livestock and gun. (from the book: Restoring America's Wildlife, 1937-1987.)

In 1937 Kansas had no big-game populations to speak of — no deer, no turkey, no pronghorn antelope and no elk. At the same time, Kansas pheasant, quail and prairie chickens were slowly recovering from a six-year drought, often referred to as the Dust Bowl days.

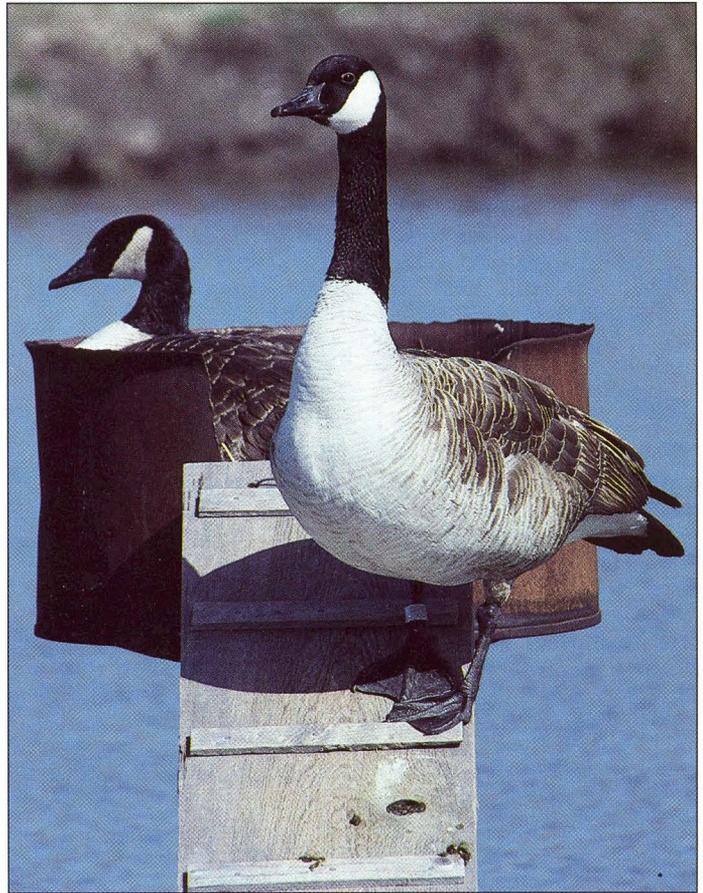
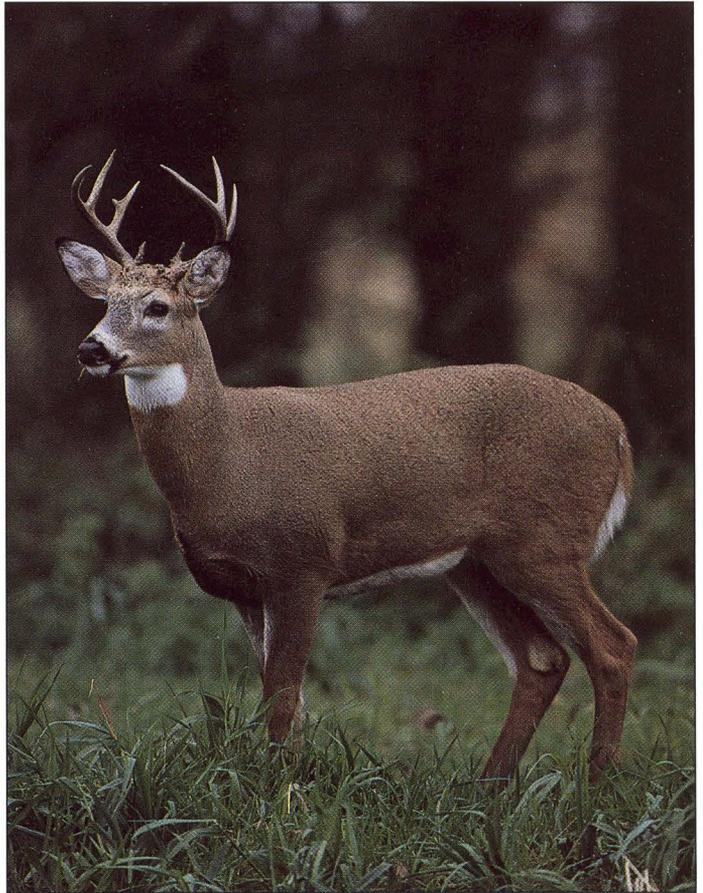
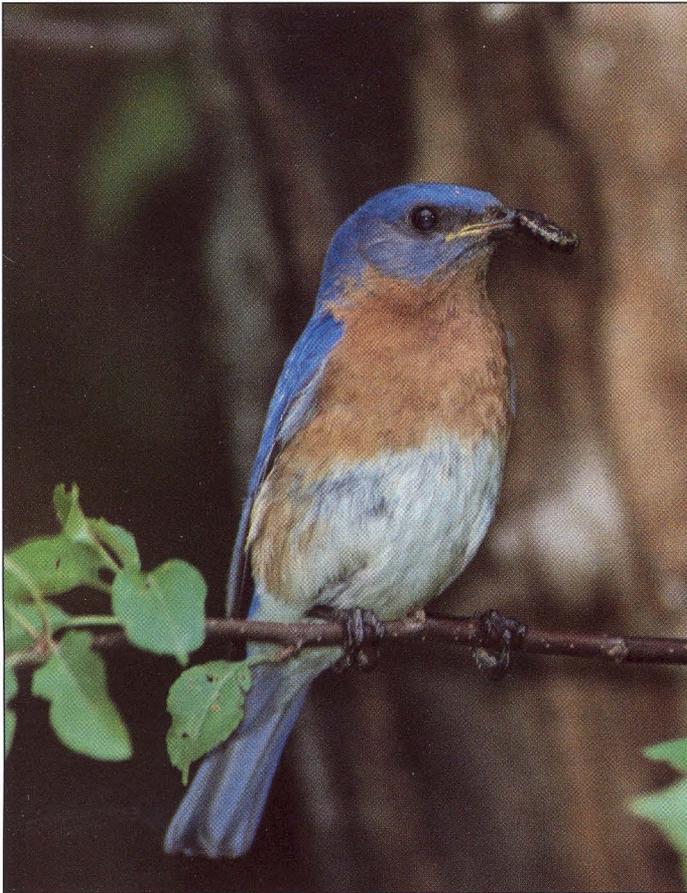
It was obvious that something needed to be done, but most state wildlife agencies were paralyzed. The agencies had too few personnel and too little money to make a difference. The Pittman-Robertson Act was designed to solve this problem by:

- * Apportioning federal taxes on firearms and ammunition to the states on a cost-sharing basis, up to \$3 of reimbursement for every \$4 a state spent;
- * Requiring states to use these federal revenues for wildlife conservation; and
- * Prohibiting states from using hunting license revenue for any purpose other than supporting the wildlife activities of the state conservation agency.

These three provisions put state wildlife agencies on more stable footing by protecting their main source of income (hunting licenses) and by providing additional funding. The act also protected the department from legislators who, in times of fiscal crisis, would often try to redirect income earned by one agency into another.

The Bureau of Biological Survey (the predecessor of today's U.S. Fish and Wildlife Service) further built upon

This year marks the 50th anniversary of the Pittman-Robertson Act, which provides federal dollars to the states for wildlife restoration. A few of the many species in Kansas that have benefited from the funding are shown at right: bluebird and white-tailed deer (top row) and pronghorn antelope and Canada goose (bottom row).



Bluebird and deer photos by Mike Blair; antelope and geese photos by Gene Brehm

the act by specifying the types of state activities that would be eligible for P-R funds:

- * Purchasing land for wildlife rehabilitation;
- * Developing land to make it more suitable for wild mammals and birds; and
- * Conducting research to solve "problems that stand in the way of wildlife restoration."

The federal government must have done something right, because within six months of the act's passage Kansas had passed the legislation needed to qualify for the new program. During the next six months, Kansas was joined by 42 other states. Kansas' first P-R project was approved on April 28, 1939, for the purchase of several hundred acres now included in the Finney Game Refuge, just south of Garden City. Within the year this project was quickly followed by projects at Jamestown and Kingman wildlife areas, and for pheasant research and bird banding. Today we can review the past 50 years and see how much the Pittman-Robertson Act has done for Kansas. Since 1937 Kansas has received more than \$31 million in P-R funds matched by more than \$11 million of sportsmen's dollars. These funds have gone toward the following activities:

Land Acquisition

Habitat is the key to protecting wildlife, and land acquisition provides both habitat and public access to wildlife. P-R funds were used to purchase wildlife areas at Cheyenne Bottoms, Kingman, Jamestown, Woodson, Marais des Cygnes, Neosho, Hollister, Pratt Sandhills and Texas Lake, plus smaller ponds on other state wildlife areas.

The department currently owns more than 70,000 acres of land and manages another 318,000 acres of land under agreements with the Bureau of Land Management (BLM), the U.S. Forest Service and the U.S. Army Corps of Engineers. These lands provide about 390,000 acres of public hunting in Kansas. Unfortunately, while this sounds like a lot of land, it represents only seven-tenths of 1 percent of the total land area in the state. The conservation department of our neighboring state, Missouri, considers itself "land poor" even though about 5 percent of Missouri's land area is in public ownership.

Nationally, the use of P-R funds for land acquisition has dropped from 23.6 percent in 1959 to 8.2 percent in 1984. Following a similar trend, Kansas has not used P-R funds for land acquisition since 1983, partly due to a combination of high land prices in the 1970s and lack of public support for land acquisition projects. Today, with public support for land acquisition increasing, the Kansas Department of Wildlife and Parks may soon be looking to buy land from willing sellers.

Wildlife Restoration

In spite of the circumstances of the 1930s, Kansas now has abundant numbers of several big-game species. The restoration of the wild turkey possibly represents the department's greatest success story. In 1966, after learning from other states that pen-reared turkeys were too tame to survive in the wild, the Fish and Game Commission began an intensive program of trapping and relocating wild turkeys within the state and supplemented it with wild turkeys obtained from other states. The turkeys established themselves so quickly that Kansas opened its first turkey season eight years later. Today the state has an estimated population of 80,000 wild turkeys.

A similar history can be given for the pronghorn antelope in western Kansas, and greater Canada goose in eastern Kansas. These species, which were nearly extinct 50 years ago, have made strong comebacks due to P-R funded restoration and management efforts.

White-tailed deer and mule deer also have made remark-

able recoveries in the past 50 years. When Kansas held its first deer season in 1965, 1,500 deer were harvested statewide. In 1986 more than 26,000 deer were harvested and state wildlife biologists estimate that there are now well over 300,000 deer in Kansas.

Pittman-Robertson funds are also used to manage and promote pheasant and quail in Kansas on both public and private lands. Through the state's Wildlife Habitat Improvement Program (WHIP), begun in 1973, the department offers landowners technical advice and cost-sharing of habitat development. Currently there are more than 1.2 million acres enrolled in the WHIP program, which greatly contributes to the enhancement of wildlife.

In each of these cases, better information has led to better management, and today Kansas boasts some of the best pheasant and quail hunting in the nation. In fact, Kansas is one of only a few states with populations of both lesser and greater prairie chickens. Kansas' annual prairie chicken harvest is larger than the combined populations of these birds in the other prairie states.

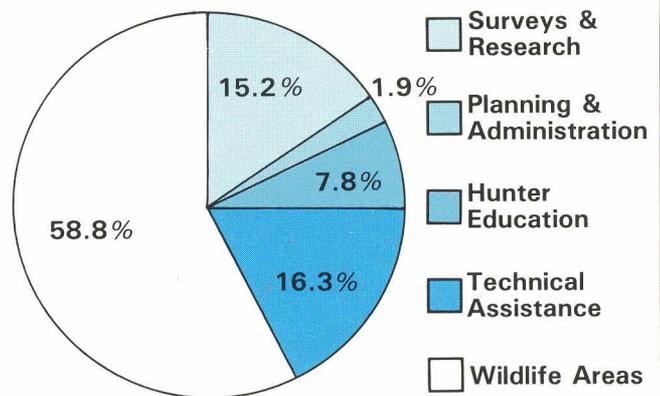
Nongame Wildlife

While most P-R funded efforts emphasize game animals, Kansas uses a good portion of its funds to help nongame wildlife species such as songbirds, eagles, hawks and bison. Last year the department spent more than \$486,000 on nongame, threatened and endangered wildlife species. Of this amount, approximately \$130,000 was provided through income tax contributions to the department's Nongame Program (Chickadee Checkoff). The rest of the work consisted of miscellaneous nongame work done on each wildlife area in the state and by the department's Environmental Services Section.

Research

Today many of us take knowledge of an animal's habitat for granted. All we have to do is turn on the TV to see one of a dozen nature specials. But 50 years ago the science of wildlife management was in its infancy. Little was known about wildlife populations, their life history or their management needs.

Use of P-R Funds in Kansas for 1986



Patti Murphy chart



Returning wild turkeys to huntable numbers has been one of the P-R success stories in Kansas. The turkey population numbers 80,000 birds statewide.

Many of the first P-R projects involved wildlife inventories. By having an idea of the numbers of pheasants, quail or deer in a state, wildlife biologists could make adjustments in hunting regulations, ensuring the continuation of each species. Methods for conducting these surveys steadily improved through the 1950s and 1960s.

In addition to studying the abundance and location of game animals, researchers began to study wildlife habitats more closely, determining such things as preferred foods, survival of young and the habitat needs of each species.

Ongoing wildlife research in Kansas includes small-game surveys and studies of reintroduced sharp-tailed grouse, ruffed grouse, Canada geese and river otters. In addition, researchers survey hunters to determine hunter-success ratios as well as the age and sex of harvested deer, antelope, bobcats and small game. Other researchers are using advanced radio-location techniques to study raccoon and turkey movements. The department currently employs a staff of eight full-time biologists to study the state's wildlife.

Hunter Education

In 1970 the Pittman-Robertson Act was amended to allow funds for hunter education and shooting-range development. Kansas' Hunter Education Program, ranked as one of the top 10 in the country last year, is funded primarily through Pittman-Robertson and supported with many hours of volunteer labor.

Hunter Education addresses many topics, but focuses primarily on safe handling of firearms, wildlife conservation and outdoor ethics. The goal is to produce a safe, responsible hunter. Last year more than 12,000 students attended hunter-education courses offered throughout Kansas. And hunter education has made a big difference in Kansas. Since 1968, when hunter education was first offered in the state, hunting-related fatalities have dropped from seven in 1968 to two in 1986.

Planning

When the Pittman-Robertson program was first established, the federal government established specific procedures for project approval. A state had to have each of its proposed projects reviewed and approved by the U.S. Fish

and Wildlife Service. This allowed the federal government to closely monitor projects and to ensure that states complied with the provisions of the new act.

In 1970 and again in 1982, the Fish and Wildlife Service liberalized its standards by allowing states more independence in managing their P-R projects. This action recognized the states' improved ability to manage their own wildlife resources. Kansas had the distinction of being one of the first three states to take advantage of this option, the Comprehensive Planning Option, along with Wyoming and Colorado.

As a "comp-plan" state, Kansas is freer to address its own needs without the delays that often accompany federal approval or comment. There's still some overview by the Fish and Wildlife Service, but it's mostly limited to ensuring that wildlife projects are based on proven needs.

The Bottom Line

In the 1930s, wildlife management was primarily a matter of enforcing game laws, controlling predators and releasing pen-reared pheasant and quail that had little chance of surviving in the wild. There was no coordinated effort to provide food and cover, two of the basic needs for wildlife survival.

Seeing the need for action, those who enjoyed hunting banded together to save wildlife. They established a cooperative effort among sporting groups, the federal government, the states and private industry that has done more for wildlife than any other effort in history. Their grass-root efforts have evolved into a highly sophisticated program to maintain healthy wildlife populations.

Kansans can be proud of the accomplishments made possible through the Pittman-Robertson program. Without these funds, the Kansas Department of Wildlife and Parks would find it difficult to meet the increasingly complex challenges of natural resource management: demands for more wildlife, species diversity and harvestable surpluses — all on fewer acres of habitat. Just as P-R funds helped us to conserve wildlands initially, they must now help us manage these lands ever more intensively.

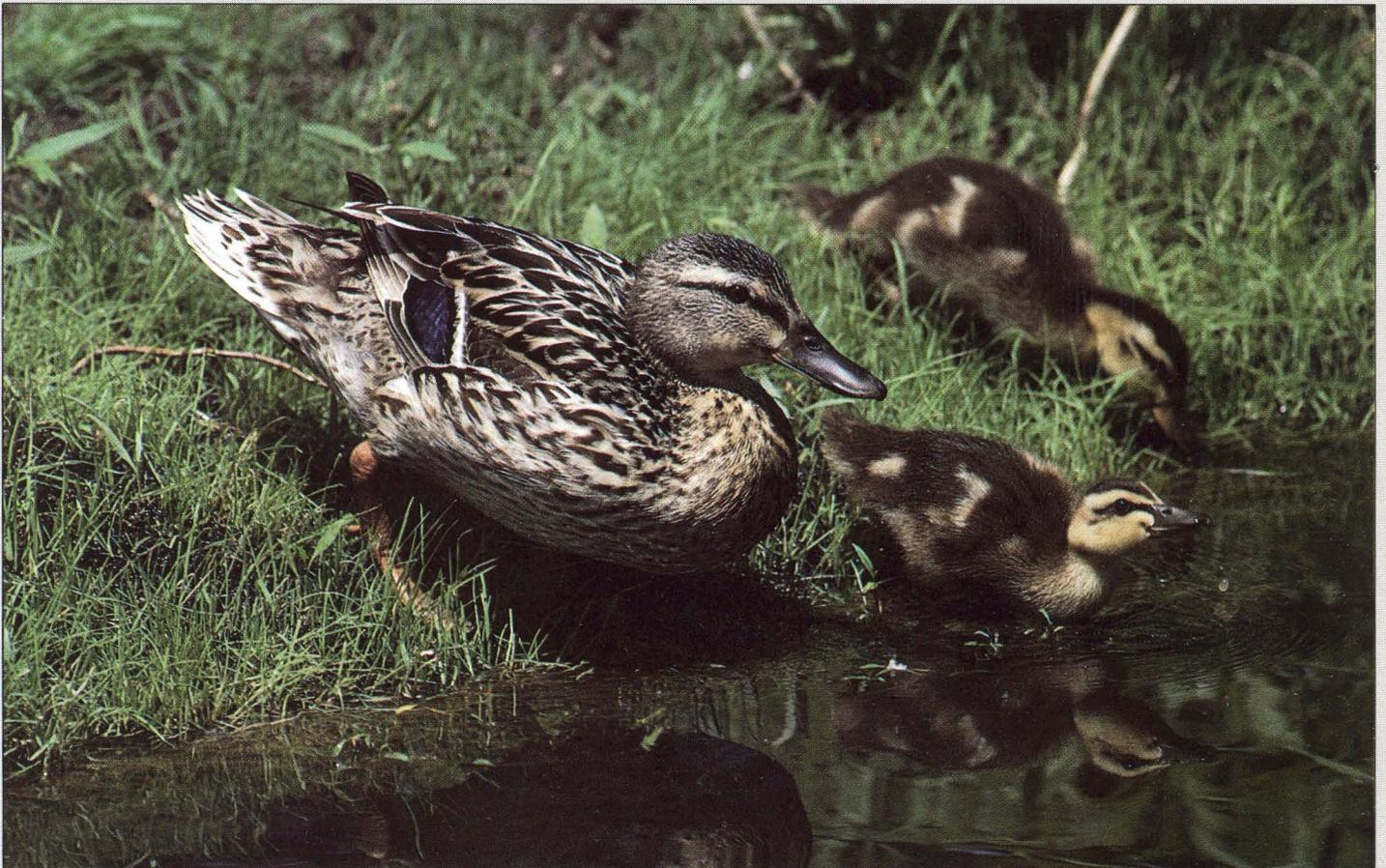
KW

KANSAS WILDLIFE

Gallery

photos by Mike Blair

A mallard hen maintains lookout as two of her ducklings get a drink of water. Mallards may nest some distance from water but waste little time marching the vulnerable ducklings to the nearest slough or pond. Shot with 400mm, f/9.5, 1/125.





Above: Some young animals remain with their mother for months while learning the skills necessary for survival. This 6-month-old November fawn will likely travel with its parent until new fawns are born in the spring. Shot with 400mm, f/5.6, 1/60.

Left: Waiting for the dew to dry, a young prairie dog greets its parent on their home mound. These animals show much affection between family members, often touching incisors in a ritual that resembles a kiss. Shot with 400mm, f/8, 1/125.

Below: Keeping track of turkey poults is no easy chore for a hen. She must be extra alert for danger from nocturnal hunters until her young learn to fly into the safety of nighttime roosts. Shot with 400mm, f/5.6, 1/250.



SPRING FORTH

I've always been fascinated with springs and have come to enjoy and appreciate them even more with each passing year.

by **Bill Layher**
Environmental Services Supervisor
Pratt

photos by **Mike Blair**

There's something mystical about clean, cold water bubbling over rocks, singing a never-ending monotonous melody. Searching for clean, clear water in Kansas — a prairie state dominated by agricultural activity — can be a real task. Well, not the searching but certainly the finding.

When I was a kid (longer ago than I care to put in print, but I will admit it was pre-NEPA and the Clean Water Act), it was even harder to find such waters. Because of the work of agencies such as the Soil Conservation Service and efforts aimed at soil erosion controls, many streams run clearer than they have since the white man rudely intruded on the prairie.

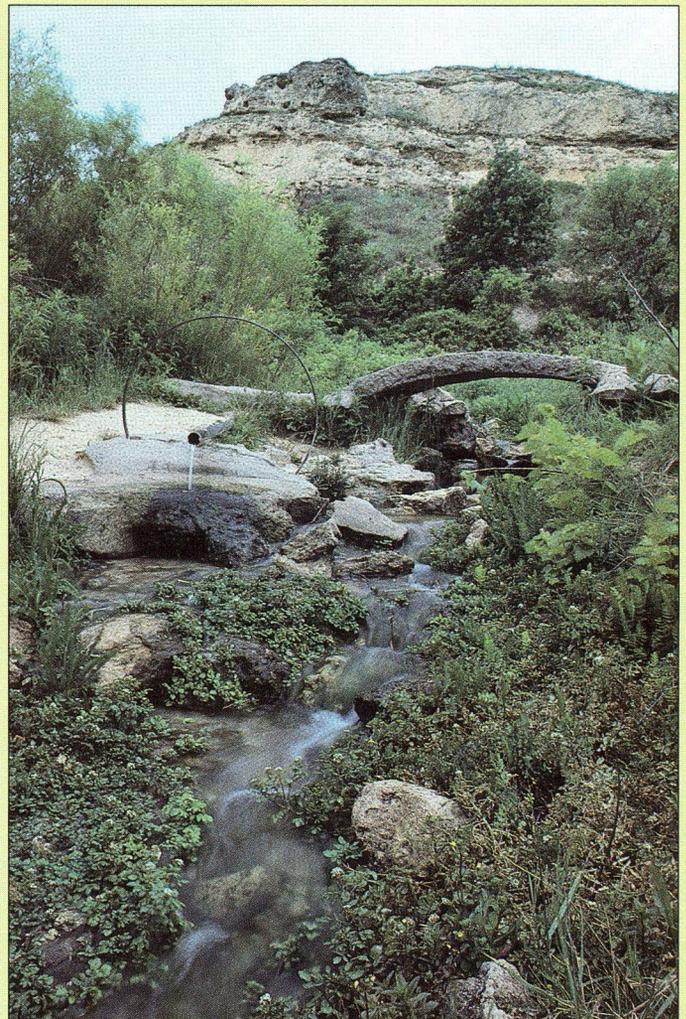
At any rate, as a small child I can remember Sunday afternoons, especially in the spring. I recall them because my dad always picked up my brother and me and we headed for the wild. My dad was a farmer but always took Sundays off to entertain us kids, who were raised by our grandmother. The outings that really excited us were trips to a somewhat secluded drainage where clear, sparkling water musically sprang from a rocky hillside. About all I can recall is a reference to May Day, a small community in north-central Kansas where the forays were directed.

I suppose it's trips like those that spurred my interest in nature, especially streams, and resulted in my career as an aquatic ecologist. I remember wading in the clear, cold water chasing minnows with a seine and looking under rocks for strange creatures with long tails (stonefly larva) and others that built little houses of stone (caddis fly larva).

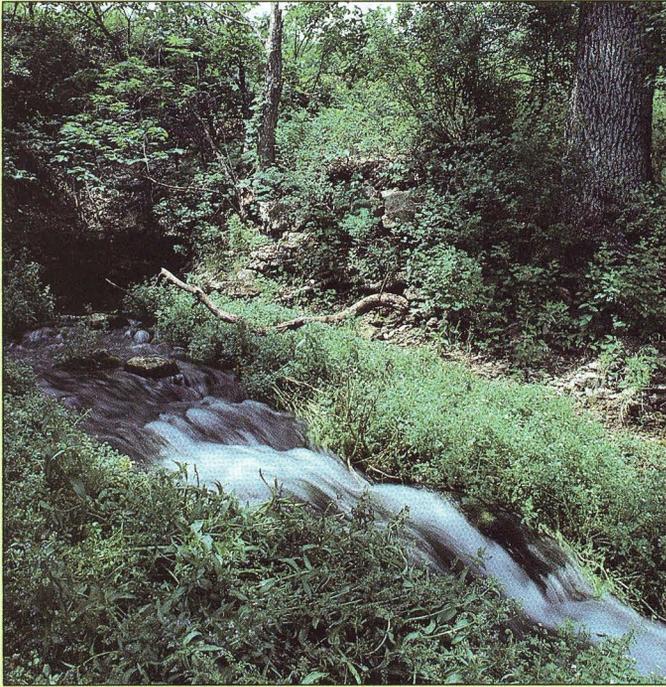
As I grew older, I never lost my attraction for springs, or I should say, they never lost their attraction for me. Just a few blocks behind my grandmother's house was a spring we called Brougher's Spring. It was a favorite haunt, and to ease my growing pains I'd sit for hours on large boulders of limestone, peering into the pool next to the spring. The setting was complete with a small cave eroded from the rock walls of a box canyon and even a 10-foot waterfall that ran after spring rains. The serenity of the place was good medicine to straighten out all kinds of teen-ager stress and mental anguish. It was Aldo Leopold who said, "Some men can live without wild places . . . I cannot." Brougher's Spring was my wild place, as pristine and secluded as a young boy could wish for.

Springs are formed by groundwater flowing to the surface. Some springs emerge as artesian wells, and many springs are seeps, small wetland areas that combine to form a headwater

A spring shown below at Scott State Lake near Scott City is the home of the Scott Riffle Beetle. This spring, the only known location for this threatened insect, may be viewed by the public. The spring shown at right is on private property in eastern Marion County. A one-second exposure softened the photo. This spring produces an impressive flow.







Privately-held springs (left) should be protected as rare habitat. The bottle of drinking water (lower left) indicates the demand for pure spring water.



stream. Others, such as the San Marcos springs in Texas, are literally torrents of flow when they emerge from the depths. Many Western states such as Texas, Arizona and California have lost many of their natural springs to irrigation and municipal water needs. Often springs contain unique species of fish adapted to a particular water quality.

Western Kansas also has lost many of its springs as the Ogallala aquifer and stream aquifers have been pumped for irrigation. Springs where some species (the Arkansas darter near Garden City, for example) were first found by scientists are now gone. In Kansas you can't get a water right to keep the water in your spring. If you divert it, cap it, consume it, it's a "beneficial use" and the law might let you do that. But protecting what the Creator made, that's hard to do.

Kansas still has some notable springs, though. Many occur on private lands throughout the state and aren't accessible unless you're on good terms with the landowner. Others, however, are tourist attractions found on public land.

Historically, springs served as watering holes for animals, later for cool drinks for passing pioneers. Settlers often built their homes near springs for several reasons, not the least of which was a pure water supply. "Ice-houses" were built to keep food refrigerated by the cool waters. On public land at the north end of Milford Reservoir is a spring known locally as Glace's Spring. As a schoolboy I caught my first raccoons there in the winter when other streams were frozen over. Springs often stay open in the coldest weather, and as such they often afford good late-winter mallard shooting. An old ice-house still stands at Glace's Spring.

Some other springs worth seeing also are found on public land. The Rock Springs 4-H camp offers a picturesque stop for the traveler in Geary County. In Cherokee County, Schemerhorn Park at Galena is home to several protected amphibians found nowhere else in Kansas. Springs flowing into Scott State Lake in western Kansas are home to the threatened Scott Riffle Beetle.

Private citizens often make use of springs because their constant temperatures provide water that's adequately cooled to support rainbow trout. I know folks who have stocked trout in Reno, Geary, Cowley and Marion county springs. In some cases, the trout have grown quite large, although reproduction hasn't occurred. In Cowley County, a developer is creating a recreation area near a spring. The spring will support a put-and-take rainbow trout fishery as well as a site for growing watercress commercially. And some bottling companies sell pure spring water to customers.

Large springs are unique areas in Kansas. We have but a few, and they should be protected as a rare habitat type. Many carry a strong historical background to the days of pioneers passing along their way through the great sea of grass. The serenity of springs also needs protection. These wild places will become more valuable as development and population growth continue to envelop our natural areas. Legislation is needed that will allow private individuals to protect waters and surrounding natural areas on private property.

Visit a spring if you have the chance. Marvel at the water's mystical journey from clouds to the ground, only to percolate at the surface and form the headwaters of a stream. Surely, unconsciously, your thoughts must turn to the marvels of nature, the splendor of untarnished wilderness, even the very beginnings of man. KW



by Martha Daniels

Like A River Flow

Mayflies lined the johnboat, glued to its shell by a September dew. There was always something mysterious about those lacy white flies, the way they came in with the river fog, lived only a few hours, then became foam on the water. I thought it a waste that something so delicate and beautiful was such a brief visitor. But perhaps their tenderness could not withstand a longer life on this strong river.

The short season of river floating came each fall, just after our scorched days in the Missouri hayfields and just before we were drawn back inside the walls of a school. I cannot recall the first time my father took me to that river; it just seems as if I've always been fishing there. And, through the eyes of a kid, that river was a mighty creature.

Catfish were the excuse we used, but just smelling the rich river and watching its thick waters roll over logs and out of sight were the real reasons we waded mucky creeks to get minnows for bait.

The farm work was laid aside for a month or so. Soybeans ripened, and we climbed out of bed at 4:30 a.m. to don our river britches and load the boat. Farmer's play, I suppose. To Grandpa's house we'd drive, never quite awake as the pickup jarred numb bodies over the rocked roads. A light would be on in the kitchen, and within a few minutes Grandpa would emerge from the house. I always thought of the three soft beds Grandma had but remained motionless in the truck. These were mornings worth sacrificing sleep over.

The riverbanks were steep and soft from the heavy fog, so taking the boat to water was usually the greatest challenge of the trip. We'd lower it on a chain, then slip down behind it like otters. The chilled water flowing through our worn sneakers as we launched the boat opened our eyes — and mouths. I'd shove off the sandbar and flounder into the boat. The motor would sputter and moan, then release some fog of its own and off we'd go.

Once the lines had been run for the



Patti Murphy illustration

morning, we'd park ourselves upon a sandbar downstream and do a little rod-and-reel fishing. A great blue heron would wing its way across the new sky, neck tucked back, pumping hard to keep its heavy body in air. I always preferred to explore this little island, rather than join Dad and Grandpa as they hooked up chicken livers and entrails and cast them into a likely spot.

The discoveries that could be made on that bar! Soft turtle eggs were treasures uncovered by a rain. Animal tracks pressed quietly into the sand. A doe, stepping down to the water's edge, had sunken deep to draw water.

The riffle nearby was perhaps my favorite. A pocketbook mussel would wash up, and tiny catfish fed in the shallows. Filigreed water swirled about rocks and logs. So there I'd stand in the middle of it, pondering the im-

portant stuff. Just what gives the river its flavor? Oh, the green grasses, fertile soil, rotting logs, dragonflies and, of course, a blue sky. But there was one question that still remains unanswered. Does a river smell of fish, or do fish smell of a river?

Soon Dad would notice the time that the river had taken with it, and we'd collect our belongings from the bar and put back into the river to make one last run. The old Evinrude would complain loudly as it fought the slow current. A couple of doozies would be waiting for us along the way. Sometimes, even a blue or a flathead.

To think of the river again fills my memory with young curiosities that defy knowledge. Like me, the river has changed courses many times. Still, delicate white flies will float in with the September fog and then away with the thick waters. KW

