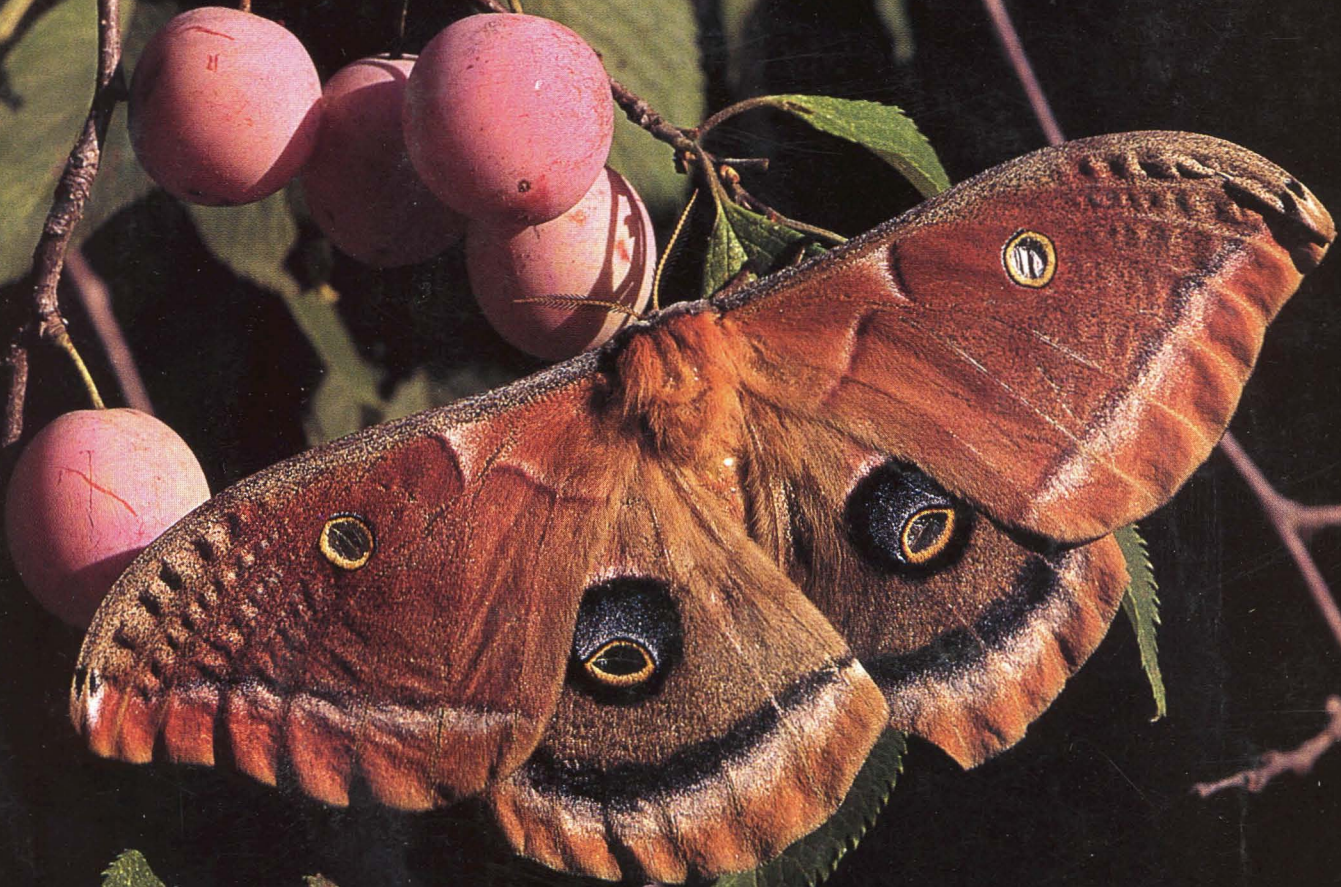


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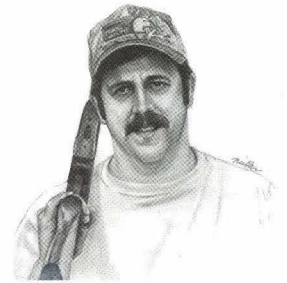
JULY/AUGUST 1999

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The View From Here



by Steve Williams

Act Now For Future Wildlife

September 2, 1937. Perhaps the most important date in conservation history. Over sixty years ago, President Franklin D. Roosevelt, the United States Congress, and American sportsmen made a historic decision for the future of our natural resources. Consider the magnitude of world events that were taking place as a backdrop to this decision. In spite of lingering effects of the depression and the onset of a world war, America stepped up to the plate for wildlife conservation. The Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act) dedicated a 10-percent federal excise tax on firearms and ammunition, with proceeds divided among the states for wildlife conservation. In 1950, similar legislation was established (Dingell-Johnson Act) to benefit our nation's fisheries. Since their inception, and with amendments that broadened taxable items, these two programs have generated more than \$5 billion. Simply put, these appropriation acts are the backbone of every state-level fish and wildlife conservation agency.

While Dingell-Johnson and Pittman-Robertson both benefit nongame species and their habitat, a growing list of species are in trouble, and the demand for outdoor recreation areas is increasing. A network of concerned conservationists formed a grassroots effort called Teaming With Wildlife (TWW) to help fund these unmet needs by extending the existing user fee on hunting and fishing gear to include outdoor gear used by birders, hikers and other outdoor enthusiasts. After years of building support for this funding, Congress recently responded to the TWW coalition's call by introducing legislation in October 1998 to meet the goals of TWW, though with a different funding source.

Known now as the Conservation and Reinvestment Act of 1999 (CARA), H.R. 701 and S. 25 would dedicate a portion of federal income from offshore oil and natural gas leases to fund nongame habitat development, conservation education, and outdoor recreation nationwide. Both bills contain these three key elements:

Title I – Over a billion dollars a year would go to coastal states to help offset any negative impacts associated with oil and natural gas retrieval from their shores.

Kansas would not be eligible.

Title II – \$400-\$500 million would be allocated to the states annually to develop and improve state and local recreation areas through the Land and Water Conservation Fund. This money could be used to revamp state park facilities and provide naturalist programs. Local communities could utilize these funds for a variety of projects, such as swimming pools, playground equipment, and ball fields. Title II could bring as much as \$4 million annually to Kansas.

Title III – \$300-\$400 million would be directed to states to help conserve wildlife populations and their habitats and to provide more opportunities for wildlife education and recreation. These funds will allow biologists to monitor a more diverse group of wildlife species and enhance important wildlife habitat so that many species never need special protection. Title III could bring as much as \$6 million to Kansas each year.

There is no better opportunity to receive major funding for wildlife programs, to implement major efforts for wildlife viewing, to conserve reptiles, amphibians, songbirds and shorebirds, and to meet so many wildlife and recreation needs. With bipartisan leadership in Congress already strongly supporting this effort, it is time now to ensure it happens. The concept is simple, use proceeds from nonrenewable resources to strengthen the foundation of renewable resource management. It is an investment in America's future.

As this millennium ends, it is my hope that Americans will again display the same vision and fortitude as our forefathers in supporting the Conservation and Reinvestment Act. If you feel strongly about the future of our natural resources, you may want to contact our congressional delegation and provide them with your viewpoint on this legislation. For more information on CARA, please call (316) 672-5911.

Steve Williams

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Wildlife & Parks

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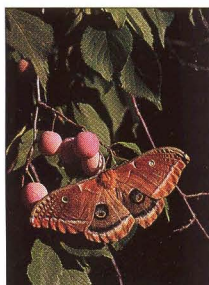
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About the covers

Front: A polyphemus moth rests in wait for the coming night. Mike Blair filmed the beautiful creature with a 105mm lens, @ f/16, 1/125 sec.

Back: A windsurfer enjoys a thrilling ride at Cheney State Park. Blair shot the scene with a 400mm lens @ f/4.5, 1/500 sec.



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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.

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Velvet Wings

by Herman Nonnenmacher, Ph.D.
Pittsburg

photos by Mike Blair

All who discover these big, beautiful moths – the luna, cecropia and polyphemus – have gazed in awe. They are delicate, intricately colored and fascinating.

Nature is never so inspiring as at those rare moments of true discovery, or when something familiar is seen in a fresh way. The best surprises come when something common but normally hidden from view suddenly enters the spotlight of attention. Many of us, if we were lucky, experienced such occasions when we were young and our eyes were closer to the ground. If such discoveries didn't send us into spasms of terror, we were transported to a state of wonder and awe, a condition which left us both quizzical and excited as we realized that something special was ours to observe. Occasionally, we experience such things as adults. And these are the finest discoveries, which take us back to the grace of childhood, where lessons were learned from the ants, from the smell of good soil, from the veins in a leaf, or from fossils in a rock.

My childhood was spent in Florida, where I went to the shores of the Atlantic and Gulf coasts and to the lakes and rivers that dotted the area. Most of my outdoor time, however, was spent in my own backyard, exploring the mysteries of spiderwebs, flowers, and grasshoppers. Sometimes amidst the familiar assemblages, there was a rare moment when I would find a creature so out of place that all of my attention and questions were focused upon it. One example, of all things, was a tiny cactus I found growing in a spot of sand so dry and sparsely weedy that my dad wouldn't waste the time to mow it. I thought I had seen everything in that part of the yard, but there was the cactus, thriving in a hidden sort of way.

There are many such memories, but one of them set me on a lifelong pursuit. At school one day, while finishing a third-grade math drill, my class had a special guest — a sixth grader — who arrived bearing a large jar with a wondrous creature



Silkworm caterpillars are large and showy but not easily spotted by accident. Locating them is easier when preferred foods are known. This beautiful polyphemus larva feeds on sugar maple.

inside. The strange winged insect was a curious blend of yellow, blue, and green, with faint markings that helped it to blend with the twigs in the jar. One of its two tails was broken off. I had seen pictures of it in insect books and knew it was a luna moth, but it was the first real specimen I'd seen. I considered how beautiful it was in spite of its imper-

fection. All my classmates were similarly affected, and we were full of questions to which no one had answers. And then our guest and her beautiful green moth departed.

Would I ever see another luna? Where could I find another? All I had were pictures in books and the local college's public insect exhibit. The pictures were not great, and the



The "eyespot" of a polyphemus hindwing is a study in color and detail. It may mimic an owl's eye, scaring potential predators long enough for the moth to escape.



The cecropia moth is the most difficult to find among the big three Kansas silkworm moths. The large and feathery antennae identify this one as a male. Antennae aid in locating female moths.

mounted luna specimens had long since faded to white. I vowed to learn everything I could about lunas and other wild silk moths of North America, so that I could look for them in the right places and increase my chances of finding one.

It was a decade and a move to Kansas later before my search was successful. In a Fort Scott church bus just back from a woodland summer camp, a luna was found perched inside. Then a few weeks later, a ragged polyphemus fluttered into my yard, spent and worn after laying eggs. Her beauty was gone, but it was a treasured find. From those encounters, I began a hobby of collecting silk moths and rearing their eggs. Observations of life cycles honed my interest, until eventually I incorporated my studies into a college degree.

Kansas is home to several species of wild silk moths in the family Saturniidae. These are heavy, velvety-bodied moths that are active at night but sometimes confused with day-flying butterflies because of their large, colorful wings. The

largest local members of this family are polyphemus, luna and cecropia moths. These species have wingspans of four to six inches, and are prized additions to any 4-H insect collection. A smaller colorful moth known as Io is also present in Kansas, as is the day-flying buck moth which is particularly hard to catch.

To fully appreciate these giants of Kansas, they must be seen in a natural state. Saturniids might be found anywhere within their ranges, including your back yard. Firsthand observation is a never-to-be-forgotten experience. But the nocturnal moths are not easily spotted by casual observation. A general summary of life histories is helpful in knowing when and how to look for these beautiful crea-

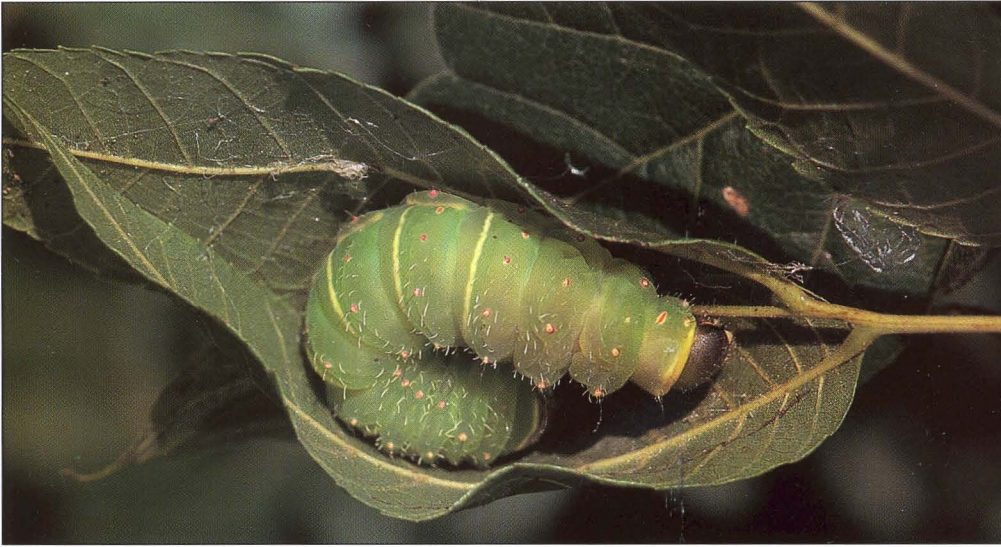
tures.

Some characteristics are general to the group. All of these moths emerge from tough, silken cocoons and are flight-ready within a matter of hours. They can neither eat nor drink, instead living off of energy stored within their bodies. Adult lifespans are short and geared strictly toward reproduction. Males become active at certain times of night, taking flight in search of females. The female usually remains stationary during this period, releasing a chemical signal called a pheromone which acts as a perfume. Males flying downwind use their large, feathery antennae to receive this incredibly faint signal, working in and out of the scentstream to reach the female from as far away as a mile. Mating

occurs immediately, though the pair may remain coupled throughout the following day. At evening, the male resumes his search, while the female



Cecropia caterpillars are quite large and marked with colorful tubercles. They eat a variety of leaves, including ash, persimmon, cherry and willow.



Using silk produced near its mouth parts, the luna caterpillar tacks a walnut leaf around its body in the first step of spinning a cocoon. The adult moth may emerge in two to three weeks.

seeks out foodplants on which to deposit her eggs.

A female carries a heavy load of hundreds of eggs, and tends to deposit many of them near her starting point. However, as the load lightens, she may fly greater distances between egg-laying sites, sometimes skipping over foodplant

areas. This helps to distribute eggs over a wide area, but the energy cost to the moth is heavy. Due to the stress of constant flight by both males and females during the reproduction period, moths seldom live more than a week. Wings become damaged in rainstorms or by flying through twigs, giving the moths a haggard look and detracting from their beauty. Many fall victim to birds or other predators, and some are attracted to lights where they are easily caught.

Silk moth caterpillars feed on trees and shrubs, but are rarely pests because their numbers are kept low by predators such as birds, paper wasps, and wheel bugs. Many times, the caterpillars become host to parasitoids — certain wasp and fly larvae which feed inside the caterpillar's body and do not fully develop until after it spins a cocoon. Only about 1 percent to 3 percent of all silk worm caterpillars survive to produce adults. If you find one, return often to observe it, but don't remove it from the foodplant. Remember that it can fulfill its natural role only if left to complete

its development.

Polyphemus is the most common silk moth in Kansas, considered to be a breeding resident across the state. It is easy to identify, usually some shade of olive to cinnamon with one small clear spot on each wing. Each hindwing displays a prominent, deep-blue eyespot, which some scientists consider a defensive pattern to distract or frighten off inexperienced birds that might eat them. Female antennae are wispy, while those of males are feathery. The caterpillar, which may grow more than three inches long, is found on oaks, elms, maples, dogwoods, willows, birches, and sycamores.

Like other silk moths, the polyphemus caterpillar is strikingly beautiful. It is plump and accordion-like with a deep, translucent green color accented by two rows of silvery droplets along its upper length. Its head is brown, like weathered wood. There are two generations in Kansas, the first



Luna larvae are distinguished from other silk-worm caterpillars by rows of red dots.



Though rarely observed firsthand, luna adults are among Kansas' most recognized insects.

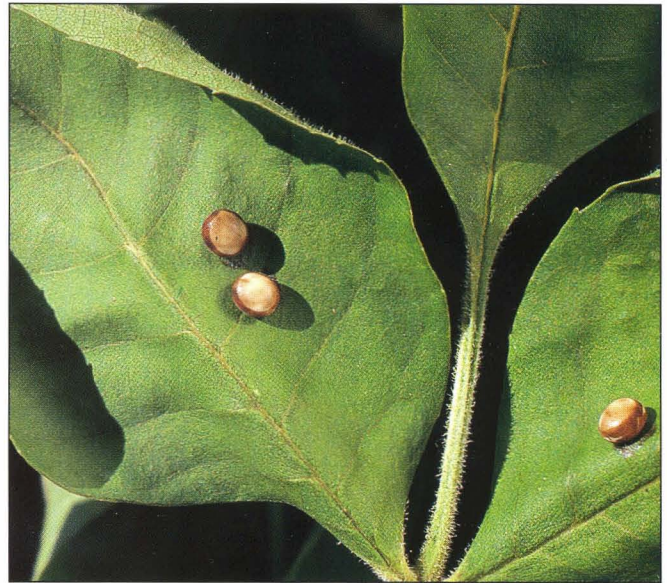
growing from May to July. Caterpillars spin egg-shaped cocoons wrapped in leaves, either on or near the food plant. Moths emerge two to three weeks later, mate, and raise a second generation which occurs through late summer. Caterpillars are generally easiest to find from about Labor day until the leaves begin to change color. To find them, look for the large, pea-sized fecal pellets beneath trees on pavement or bare ground. If you see these droppings, carefully search the plant. Though larvae are large and conspicuous, they blend surprisingly well with twigs and leaves. They feed day and night in gentle weather, but may be easier to spot with a flashlight at night.

Second-generation polyphemus spin cocoons in the fall, but do not emerge until the following April or May. The cocoons are oval and made of silk produced by glands near the caterpillar's mouth. The silken shell is then hardened from within by the larva's secretion of a chalky fluid. An emerging moth escapes the cocoon by secreting a softening fluid from its head, which is absorbed into the cemented silk. After much soaking, the moth applies pushing pressure until it gradually separates the strands and creates a hole.

The luna moth is common to abundant within its range, which is restricted in Kansas to the eastern third of the state. It grows on walnuts and hickories, persimmons, sweet gums and sumacs. Like polyphemus, luna has two generations per year. There are general similarities between larvae, and both species are active at the same time. However, each has its exclusive set of food plants, which helps with identification.

Luna moths are so striking that most people know them from pictures. The hindwings of these moths have long tails which easily break off, though flight is not affected. First-generation lunas are aqua-green, while late summer specimens are yellow-green. The moths are strong and rapid fliers.

Caterpillars are large, green, and marked with rows of red dots. The larvae have greenish- or blackish-colored heads. First-generation



Silkworm moths seek favored foodplants on which to lay their eggs. These polyphemus eggs were deposited on ash.

cocoons are spun in white silk, and are often attached to leaves above the ground, while second-generation cocoons are usually a darker, chocolate color, and are spun on the ground after the caterpillar crawls or drops from the foodplant. Cocoons are generally flimsier than those of polyphemus, though they may be larger. The moth escapes its cocoon by working two small structures located near the head until it cuts a small hole in the silk, allowing it to push through the



Silkworm cocoons are camouflaged with leaves. At left, leaves were stripped away to show how polyphemus may spin up in ground litter. Lunas often pupate on the foodplant, at right. Once the adult emerges, it lives only to breed, and usually dies within a week.

hole.

The cecropia moth breeds everywhere in Kansas except the southwestern fourth of the state. This moth is a powerful flier and sometimes turns up far from its source area, so it's possible to see it anywhere. In spite of the claimed abundance of this species, it is quite difficult to find in any stage of its life cycle. Foodplants are widely dispersed over the landscape and include birches, boxelder, silver maple, ash, privet, plum, apple, cherry, elderberry, willow, and persimmon.

The cecropia adult is a large and showy specimen, purplish-brown in color with pronounced creamy wing margins. Hind and forewings are marked with light-colored crescents, and there are bluish-eyespots at the apex of each forewing. There is one generation each year, and


moths emerge from mid-May through June.

Cecropia caterpillars are the largest in the silkworm family, often growing more than four inches long, depending on the abundance of rainfall and condition of foodplant. The larva is a dull bluish-green in color, and often has a whitish, powdery coating. It is impressive due to orange, yellow, or blue projections called tubercles located along its segments. These resemble tiny, pepper-flecked prickly pear cactus fruits. So large is this caterpillar that it is often noticeable to sharp-eyed observers from several yards away.

Cocoons are generally camouflaged and hard to see. They are spun lengthwise to the stem of a sturdy weed or woody plant, usually with a number of leaves glued to the outer silk layer. Three layers

complete the construction, each of which sports an escape valve to help the moth emerge. Rodents sometimes cache corn or seeds in the unique valves of cecropia cocoons, dooming the moth to a silken tomb.

The large and beautiful silk moths of Kansas are indeed special treasures to find and observe. Although somewhat common, they live their short lives in ways not easily detected by casual observation. Seeing them is a special treat, and no summer goes by without Kansas' moth enthusiasts anticipating the emergence of Saturniids.

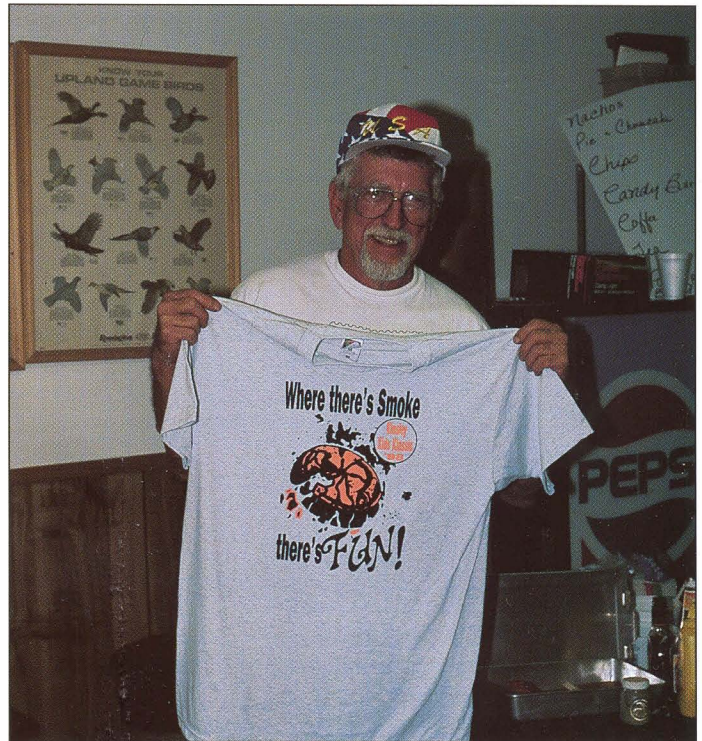
There is a charisma surrounding these wondrous creatures, and when you see one for the first time, you'll probably be hooked on them too. The silk moths are truly velvet-winged gems from the natural riches which abound in Kansas. 



Keeper Of The Flame

text and photos by J. Mark Shoup
associate editor, Pratt

A small-town trap and skeet range in the heart of rural Kansas, the Kinsley Gun Club has been in operation since 1901. Much of the club's resiliency and programs to get youth involved are the result of one man's dedication to the shooting sports.



Beneath blazing sun, the range is bustling with activity. Aromas of gunpowder drift by as shotguns pop in the muffled, dry September air. Old men sit on benches in front of the clubhouse, telling jokes and analyzing the skills of young shooters poised on concrete arcs behind five large green trap houses submerged in buffalo grass.

On the arc, a shooter shoulders his gun and yells, "Pull!" Instantly, a small orange disk rockets from the trap house like an alien ship trying to escape Earth's gravity, only to explode in a cloud of black dust. The next shooter raises his shotgun while the others wait respectfully, guns held safely, comfortably at their sides.

Behind the elevated scorers' benches (from which the targets are remotely launched) mothers, fathers, and coaches chatter as resting participants and curious observers mill about, examine products on sale, walk in and out of the clubhouse checking scores and grabbing a quick drink. And behind the clubhouse, the young shooters take turns at a game of skill in a semi trailer BB gun range supplied by the local 4-H Club.

The buildings and other facilities are like new, including a bank of night lights, which are obviously not needed on this fine sunny morning. Soon it will be time for lunch, and the 150 young shooters, as well as the rest of the crowd, will be treated to barbecue beef sandwiches with homemade potato salad and fresh apple pie.

Does this sound like an event at one of the wealthy private shooting preserves in eastern Kansas? Perhaps the NRA's elaborate Wittington center in New Mexico. Not a chance. This is the annual Kinsley Kids Klassic, held at the Kinsley Gun Club smack in the heart of rural westcentral Kansas. Anyone old enough to handle a gun safely and of high school age or younger may compete. Gold, silver, and bronze trophies are presented in classes for those 12 and under, 13 to 14, and 15 and older.

In addition, gold trophies are given in the Young Lady Class for each age group, and Olympic-style medallions are given to 4-H participants in each class. Two-person and five-person teams compete for plaques, a permanent trophy, and cases of shotguns shells. But that's not all. \$100 bond prizes are

awarded; door prizes include a new shotgun; and participants receive a customized T-shirt and free meal.

The brainchild of club secretary Frank O'Brien, the Kids Klassic is in its seventh year. It has grown from 40 kids that first year to 158 in 1998, the largest such event in the state. More are expected to participate in this year's shoot, which will be held Sept. 25.

It's not surprising that this small club in rural Kansas has created such an innovative and successful event. The Kinsley Gun Club has a history dating back to 1901, just one year after the first American Trapshooting Association's (ATA) first Grand American World Trapshooting Championships were held in Queens, New York. A local Kinsley shooter named Kirby Little was curious about the competition, which was to be held in Chicago the second year. Kirby attended and came home inspired enough to recruit 13 charter members of the Kinsley Gun Club.

Since that time, the club has had continuous membership, even through the depression years of the 1930s. It is owned by its members, who must pay a whopping \$3 for a lifetime membership. Because the



The Kinsley Kids Klassic began in the early 1980s when the first event hosted 40 kids. The 1998 Klassic attracted 158 youth from Kansas, Oklahoma, and Nebraska.

club's activities bring money into this small town, it is able to lease its ground from the city for a minimal fee.

"It's remarkable that the club has lasted all these years," says O'Brien. Some 1,200 shooters have been members (about 100 currently active) including two state handicap champions — Herbert Wetzel and Herman Schaller.

Over the years, O'Brien has sold and traded guns and manufactures and sells the Mercury Recoil Suppressor under his small business name, C & H Research. This has allowed him to supplement his income and provide the means to shoot more often.

And shoot he has, quite well. He was third in the nation in handicap average in 1975. His wife, Mary, was the Ladies Champion in the Vandalia handicap shoot at the Grand American in 1987. And in 1984, the couple won best combined score for husband and wife at the Kansas Trapshooting Association, (KTA) State Championships.

Between the two of them, they have a china cabinet jammed with trophies. Last year, they were inducted into the KTA Hall of Fame, only the second couple in KTA history to receive this honor.

These awards seem to mean little

to O'Brien, but when conversation turns to the club, he is eager to talk. He moved to Lewis, about 10 miles east of Kinsley, in 1964. He had shot a little trap as a youngster, so the Kinsley Gun Club offered the perfect outlet for his interests. O'Brien became club secretary in 1968 (a job he still performs). In 1970, he organized the first KTA registered shoot in the club's history.

Most registered shoots have three 100-target events: singles, doubles, and handicap. Singles is divided into five classes based on past average scores, and everyone shoots one target at a time from the 16-yard line. In doubles, everyone shoots from the 16-yard line, but two targets are thrown at the same time. Handicap shooters shoot from different distances based on past averages.

The Kinsley club now has two registered shoots each year. They have open practice every Wednesday evening (\$2 for 25 targets) and offer 100-target trophy shoots the last Sunday of every month, year round, no matter what.

"We don't care if it's Christmas, Mother's Day, or what," O'Brien chuckles. "We're going to be open."

While Frank's energy and dedication inspire and drive the club's everyday activities, it is his most

recent work with young people that he feels is most important. It all began in the early 1980s, when Frank visited Nebraska to shoot in tournaments.

"I was inspired by the level of commitment to young people in the shooting sports up there," he says. "We just haven't had much for kids here, but their state-level program is sponsored by the Nebraska Game and Parks Commission. And the schools even sponsor teams just like they do football or track or anything else. It's a big-time thing up there. I wanted to see us do something like that in Kansas, so I patterned our local shoot after what I'd seen up there."

Frank "dreamed up" a program for a youth trap shoot and mailed it to all the clubs in the western half of the state. The basic package for the \$20 entry fee would include 100 targets, lunch, a T-shirt, and a prize for every entrant. With 40 entrants that first year, the club considered it a success. It also attracted the attention of sponsors such as Winchester, Remington, Hornaday, and Plano, as well as many local businesses. Last year's Kids Klassic budget included more than \$2,000 in donations.

Frank will be the first to admit that this event is made possible not just through his efforts but through those of his wife, Mary, and an enthusiastic troop of volunteers. (In fact, the self-effacing O'Brien will be most likely to give them most of the credit, especially Mary.)

High school kids, club members, and even the participants themselves help make this event not only possible, but special. O'Brien also is quick to compliment the dedication of local clubs, such as the one at Hays, on how their involvement helps perpetuate the sport.

"Hays has had a team here every year since we started the Kids Klassic," he explains. "Their coach, Robbie Davis, was on the team when he was a few years younger."

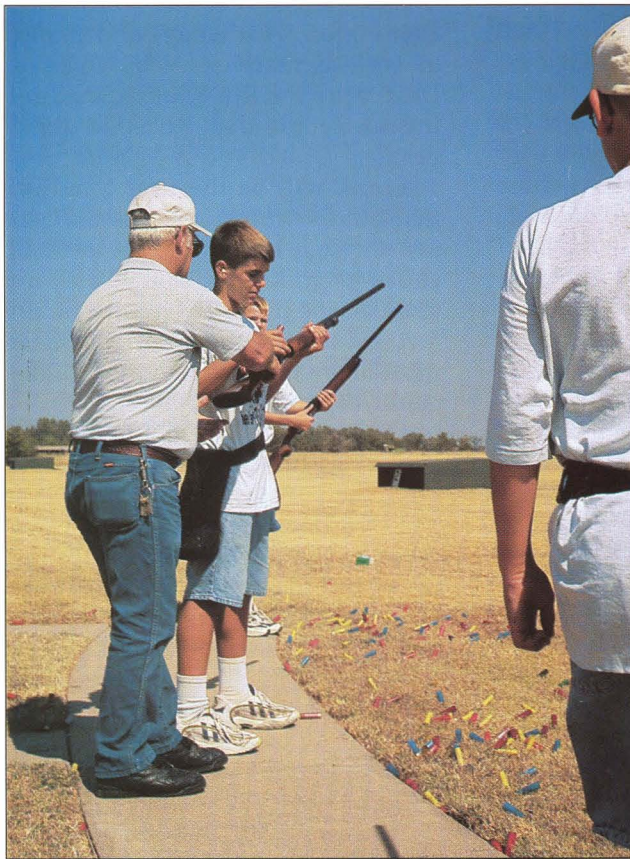
However, O'Brien doesn't see the Kids Klassic as the end product of his efforts.

"My dream for our program is

that the state will pick this up. If we keep growing, we'll reach the limits of our capacity, and that would be about 200 kids."

There are indications that "the state" may, indeed, pick up the program. The last few years, the KTA has sponsored state 200-target singles youth shoots, with free shells and targets. This year's shoot was on June 12 at the KTA home grounds north of Wichita. [Call Joe Randle, (316) 275-9162, for more information.] 4-H clubs around the state are also sponsoring shooting teams and events.

Coincidentally, the Kansas Department of Wildlife and Parks is currently developing plans for similar projects through its Hunter Retention and Recruitment Program. Proposed elements of this program would include vouchers for shooting ranges, development of ranges on private and public land, wingshooting clinics, and sponsoring youth shooting events with nonprofit groups such as the KTA.



Learning safe gun handling skills and proper shooting technique are emphasized at the Kinsley club's youth events.

All this should not only help preserve important traditions, it can provide people with an active lifetime hobby.

Perhaps O'Brien's efforts will inspire others throughout the state to involve youngsters at this critical juncture in the history of in the shooting sports. There is no question he has had an impact. While watching the young shooters at the Klassic last year, I had a conversation with Ken Carter, a retired representative for the Hornaday Company who had travelled all the way from Kansas City for the event. He was involved in the event by helping solicit donations for prizes. Of this event, he said:

"Anytime we have a young person involved in shooting, we help create a good citizen. I don't think I've ever been around such a fine group of youngsters."

That's a compelling argument for involving young people in the shooting sports, but O'Brien's own life, raising five children with Mary,

may be even more inspiring. His kids were raised in "a house full of guns" with two parents actively involved in shooting. So what kind of citizens did the O'Briens raise: one railroad engineer, one accountant, two computer engineers, and one Ph.D. in Medieval history.

Fortunately for the youth of western Kansas, O'Brien's concern for young people does not end with his own kids. Gary Brehm is a trap shooter from Pratt who won the state singles championship in 1975 but dropped out of the sport for many years. Then about three years ago, he got a flyer for the Kids Klassic. His 11-year-old son expressed an

interest, so Brehm put together a five-man team from Pratt. He's had a team every year since, and now his own interest in the sport has been rekindled.

He gives the credit to O'Brien.

"Frank has probably done more for the shooting sports than any one person in Kansas," Brehm explains. "He has a rapport with kids that is unmatched. He gets through to them in an encouraging way, and he's a good organizer, too."

Although retired, Frank O'Brien is a busy man. Sitting at his kitchen counter drinking coffee, I am entertained by Mary's stories while Frank is interrupted by phone calls. There is usually laughter on his end of the line before he hangs up and shifts gears, back to his favorite subject — kids and shooting. Recoil suppressors lay on the table, and there is an organized litter of paperwork before him.

"Mary tells me I work better under pressure," he jokes of his filing systems and the many irons he has in the fire.

Perhaps he does, but I conduct a pretty laid-back interview, and this one is as smooth as it gets. If Frank O'Brien has anything to say about it, the future of young people and the shooting sports will be one pleasant ride. ♡

1998 Kinsley Kids Klassic

Last year's Kinsley Kids Klassic attracted 158 young people from all over western Kansas, Oklahoma, and Nebraska. Garden City teams won both the 5-Man and 2-Man events and Jason Hoke, also of Garden City, had the high score of 93. Eleven-year-old Erica Campbell, from Tribune, broke 50 straight singles to lead all shooters by three in that event.

Twenty-six savings bonds, trophies, and door prizes, including a new trap gun, were awarded through the generosity of the Edwards County business community, gun clubs, shooters, and the sporting goods industry. For information about the 1999 Klassic, phone 1 888 324-5445.



Grass Carp: Good, Bad, or Indifferent?

by Randy Schultz
fisheries research, Emporia

photos by Mike Blair

*It's been more than 20 years since this plant-eating fish debuted in Kansas.
How goes the war on weeds?*

It's simple human nature. We want it all, and we want it at the least cost. And this applies to fisheries management. There is no shortage of examples, good and bad, of well-intentioned fish introductions with goals of more fish to catch, better growth through additional prey or aesthetic benefits. That is, to be a panacea for whatever ails a fishery.

The grass carp, or white amur, (*Ctenopharyngodon idella*) certainly fits this bill. Native to China and Russia, where it gets the name white amur from the Amur River, grass carp were imported to the U.S. for aquatic "weed" control. Interestingly, the history of this fish dates back 700 years when Marco Polo, the first Western traveler to write about China, reported an enormous traffic in young grass carp from their native rivers to all parts of the Chinese Empire. They were a sought-after food fish. Trafficking of these fish still exists

today because spawning condition requirements are rarely found outside their native rivers. Grass carp require large rivers, where they spawn in turbulent channel reaches, such as below a dam or at the confluence of rivers. The eggs are free-floating and will drift as far as 100 miles before hatching. Larvae seek quiet wetlands or vegetated backwaters to feed on microscopic animals called zooplankton, where they grow quickly. They become strict vegetarians after reaching a length of about 4 inches.

Young grass carp continue to grow quickly, reaching a weight of 10 pounds within two years. Maximum size of this species is 4 feet and 100 pounds. The amount of vegetation they consume depends upon several environmental conditions, including water temperature and chemistry, as well as the types of plants available. Additionally, consumption rates vary with fish size. Until they reach weights of

about 6 pounds, grass carp may eat 100 percent of their body weight in vegetation per day. As they get larger, consumption rates decrease; up to 13 pounds, they will eat 75 percent of their body weight per day, and after 13 pounds they slow to about 25 percent of their body weight per day.

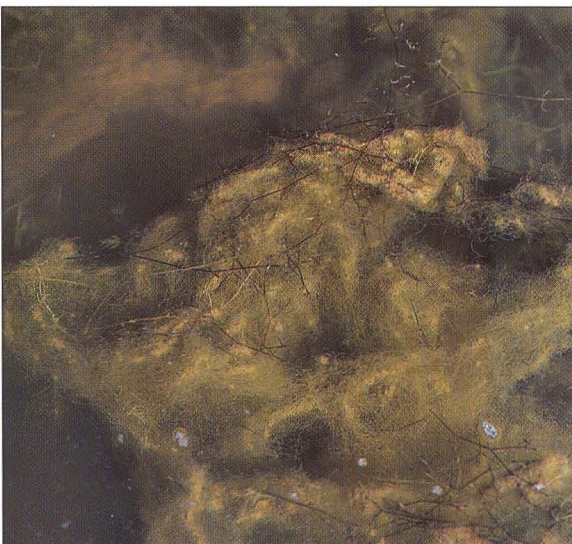
Since Marco Polo's writings, the fish has become quite worldly and is now found in more than 50 countries, although it is established in fewer than five. In the U.S., grass carp have established populations in Louisiana and Arkansas.

Aquatic vegetation control can be a frustrating task. Three methods to control vegetation include mechanical, chemical and biological. Mechanical control is hard work and is a short-term solution. Chemical control, using herbicides, is expensive and has a negative stigma among people who may use the water body. Biological controls, such as grass carp, are desirable

because they offer an alternative to herbicides and require little manpower.

Unfortunately, grass carp do not consume all types of aquatic vegetation equally. Soft-stemmed, low-fiber plants and branched algae are most preferred, although they may eat the soft new growth of more fibrous plants and refuse the more mature portions. Feeding preferences can also depend on the plants' chemical composition, which may vary among lakes. As preferred plants become scarce, grass carp will eat less desirable plants, even resorting to plants above the surface, including overhanging brush and tree branches in extreme cases. They have been observed beaching themselves to consume grass along a shoreline, then sliding back into the water. It is this voracious appetite that makes grass carp useful for controlling aquatic plants.

Because there is always a danger to native species when an exotic is introduced, a genetic derivative, or triploid grass carp, has been developed. Triploid fish are functionally sterile and minimize the potential for uncontrolled spread. Triploid fish are produced by subjecting fertilized eggs to either a temperature or pressure shock during maturation. Fish are verified sterile by collecting and testing a blood sample.



Grass carp don't eat all vegetation equally. It's best to consult a fisheries biologist or someone with grass carp experience before stocking a pond.



Aquatic vegetation is necessary for healthy largemouth bass and bluegill fisheries. If the vegetation isn't overly abundant and fishing is a desire, it's better left in the pond.

Triploids will have slightly larger blood cells, distinguishing them from diploids, or fertile fish. The screening process is laborious and expensive. Ten-inch diploid fish cost about \$5 each. Triploids may cost \$7.50 each.

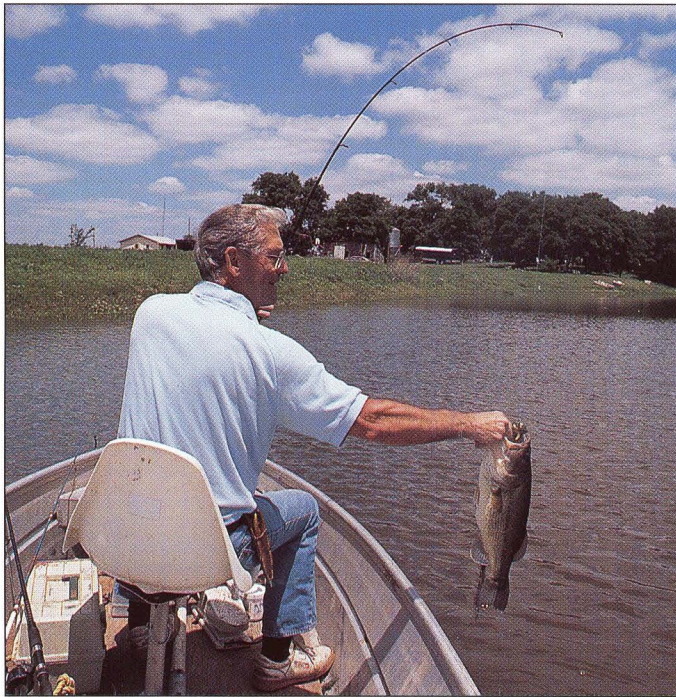
Some states prohibit the importation of diploid grass carp, although Kansas currently has no such restrictions. The grass carp's voracious appetite for aquatic vegetation has raised concerns over their potential to become an environmental problem, restricting their use in some areas. The benefits of aquatic vegetation include providing spawning and nursery areas for young fish, habitat for many invertebrates that are valuable fish prey, and structure that sportfish use for shade and camouflage. Additionally, loss of aquatic vegetation reduces a water body's appeal to waterfowl.

To get the most benefit from grass carp, a water body must be assessed. Considerations include the degree of aquatic infesta-

tion, type of plants, size of water body, and proper stocking rates. Ideally, enough grass carp are stocked to control the plants in one or two seasons, but not so many that they completely eradicate all vegetation in a short period of time. Grass carp should be considered a plant maintenance tool, not an eradication measure.

The most precise manner to determine proper stocking rates is to know the weight of aquatic vegetation in the pond. Knowing the consumption rates of the fish, the appropriate number of fish can be stocked to consume that amount of vegetation in a specified period. Research in the Midwest has recommended 1.33 grass carp per 1,000 pounds per acre of aquatic plants. Unfortunately, this is impractical to figure, and pond owners must use other means to determine stocking density. Typically, three to five grass carp per acre are stocked in new or renovated ponds, five fish per acre in ponds with 20 percent to 40 percent plant coverage, five to 10 fish per acre in ponds with 40 percent to 60 percent plant coverage, and 10-15 fish per acre in ponds with more than 60 percent plant coverage.

Grass carp can be a viable biological control for problem aquatic vegetation. But for good bass and bluegill fishing, aquatic vegetation may be a necessary nuisance. A small boat can alleviate angling problems the vegetation may cause.



However, a pond owner must consider what kind of recreation is desired from the pond. Fishable ponds with a narrow belt of vegetation around the edge should not be stocked with grass carp because this essential fish habitat will be eliminated. Bigger and more sportfish will be caught in these ponds if the vegetation remains. Anglers may have to use a boat for access, but the cost of a small boat is about the same as the initial cost for grass carp, and it will last much longer.

In a pond with adult largemouth bass, grass carp should be at least 10 inches long when stocked to avoid predation. It may be necessary to maintain grass carp populations after several years by stocking approximately one-half the original rate. On average, a lake will need to be restocked every 10 years to account for reduced vegetation consumption rates as the fish age, as well as natural mortality.

In many cases, grass carp have been shown to be an "all or nothing" control technique. Low stocking densities may result in selective grazing on preferred plant species, while less palatable vegetation actually increases in abundance. High stocking densities will result in complete eradication of vegetation, leading to poorer sport

fishing and reduced water quality. Additionally, they are a skittish fish, and may avoid areas of human traffic, such as swimming and boating areas and around docks, where control is most desired.

Unfortunately, there is a trade-off in water quality that typically accompanies stocking grass carp. Pond owners should be aware that they may be exchanging rooted aquatic vegetation for free-floating, planktonic algae by stocking grass carp. And this means trading water clarity for turbidity. This may be because grass carp assimilate only a small fraction of what they eat, returning the rest to the lake as waste and perhaps stimulating algal growth.

The solution to limiting vegetation or algae in a water body is to prevent nutrient input. Fencing out cattle, preventing septic system failures, and limiting runoff from construction, roads, urban areas and agricultural fields can decrease nutrient loading within the pond. This effort can reduce or eliminate aquatic vegetation problems.

What about fishing opportunities? Unfortunately, because of their strict vegetative diet and wariness, grass carp are usually caught by accident. There are a few anglers who've enticed grass carp to strike

flies tied to resemble bits of vegetation, and most catches are memorable due to the fish's legendary strength and leaping ability. The flesh is white and flaky, unlike the common carp's, which is loose and oily.

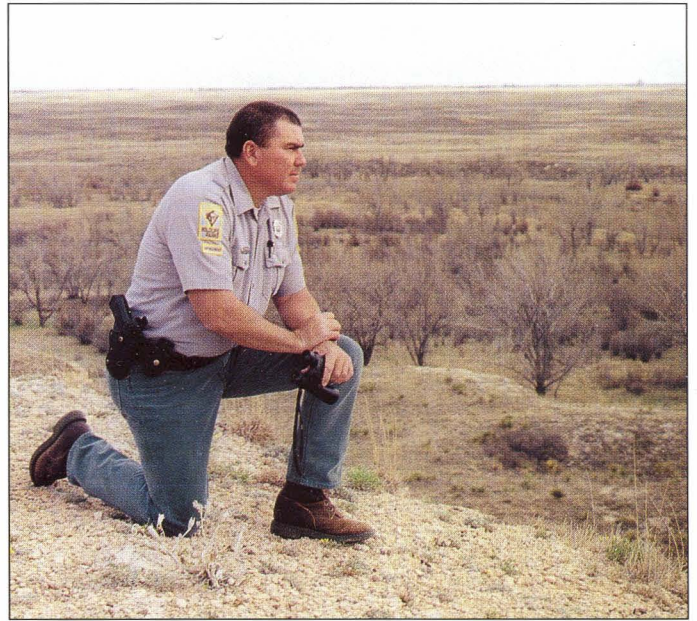
So where do we stand? Your best advice will come from your local district fisheries biologist. Most have shied away from recommending grass carp because of the adverse effects they can have on bluegill and largemouth bass fisheries, and the fact that once they are stocked, they are difficult to remove. The ideal scenario would be to stock grass carp, then remove them when the vegetation was reduced to the desired levels. Recently, a poison fish food has been registered by the Environmental Protection Agency for use on grass carp. Grass Carp Management Bait is a selective removal technique for grass carp. The grass carp are first trained to eat a pellet food, then the food is replaced with the poison bait. The poison is selective by being more palatable to plant-eating grass carp than other species. And it is made from a naturally-occurring chemical that is toxic to gill-breathing species only, making it safe to use on fish without affecting most other vertebrates. More information about Grass Carp Management Bait may be obtained from Prentiss, Inc., C.B. 2000, 21 Vernon St., Floral Park, NY 1102 or info@prentiss.com. Contact your local district fisheries biologist for advice.

The verdict is still out on grass carp. This fish certainly has much to offer as a management technique to control aquatic vegetation, but it is not a cure-all. The inexpensive biological control is often an all or nothing measure that may trade plants, good water quality and decent fish populations for no plants, turbid water, and a deteriorated largemouth bass-bluegill fishery. Your best advice is to do your homework on this fish and talk to those who've had experience with grass carp. ♡

Wildlife Conservation Officer

text and photo by Mike Ehlebracht
wildlife conservation officer, Great Bend

This is the first in a series of profiles of Kansas conservation officers, the men and women who enforce our wildlife laws.



Elkhart may not be the end of the earth, but you can see it from there. Jokes like this have been used to describe this picturesque community in far-southwest Kansas, perhaps unfairly. The town of 2,300 suits Kansas Department of Wildlife and Parks conservation officer (CO), B.J. Thurman, and his wife and three daughters, just fine.

Thurman came to Kansas 10 years ago, after serving seven years as a federal park ranger at Keystone Lake in Oklahoma and Marion Reservoir in Kansas. He started as a CO in Sedgwick County, moving to Elkhart eight years ago. That's a dramatic change — from one of the state's most populous counties to one of its least populous. But his current territory makes up for a lack of population with size. Thurman is responsible for enforcing wildlife-related laws in Morton, Stanton, Stevens and Seward counties — about 3,600 square miles, which includes the 106,000-acre Cimarron National Grasslands.

All Kansas COs face the challenge of covering large territories, but one of Thurman's unique problems is the distance to his nearest neighboring Kansas officer. He points out that wildlife officers in four other states are closer than the nearest Kansas CO. That and the sheer size of his territory are con-

stant concerns, especially during peak activity periods, which start the first of September and continue through the end of January. And with borders of two neighboring states in his district, Thurman also works the border areas during the Colorado and Oklahoma hunting season openers. Sometimes, their residents need to be reminded where the state line is.

How did Thurman end up a Kansas CO? It's a safe bet that it's all he ever wanted to do. Growing up hunting, fishing and camping with his family in Oklahoma fostered his life's direction. Thurman enjoys archery, upland bird, deer, turkey and antelope hunting, and he also loves to fish, although you might assume that a love for fishing and living in Elkhart means he doesn't mind traveling. He wouldn't mention it, but Thurman is also an accomplished sketch artist, and wildlife are usually the subjects of his drawings.

Job satisfaction runs high with Kansas COs, and Thurman echoes this attitude. He enjoys dealing with people who share his interests, and he likes the flexible hours, as well as the fact that every day brings something different to the job. To illustrate this, Thurman related an incident that happened last fall. He was busy writing a man a citation when the man got so nervous, he

passed out and fell to the ground.

On another day, Thurman was sneaking closer to some dove hunters he suspected were in violation. Getting close to suspected lawbreakers is sometimes necessary to get a better view or to facilitate an arrest. One of the suspects swung his shotgun on a dove just as Thurman was standing up to identify himself. When the man fired, Thurman was struck by several pellets. Luckily, he was far enough away that the pellets stung but did no damage. Unfazed, Thurman cited the men for trespassing.

In his 10 years as a CO, Thurman has handled many memorable cases, but one stands out from early in his career. We'll call it "Cold Turkey." Thurman was investigating a possible turkey poaching incident. He started on the case in early November, but by the time he compiled all of his evidence, it was near the end of the month. He says it was pure coincidence that the day he went to seize the turkey was Thanksgiving Day. Finding the illegally-taken bird was easy — it was still cooking in the oven!

Living near the "end of the earth," Thurman may get a little lonely during the off-season, but there's no chance he will ever get bored. ♡

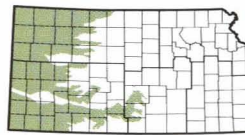
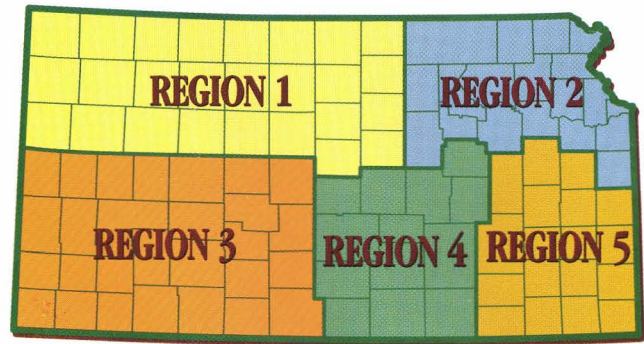
Kansas Hunting Guide



Hunting In Kansas

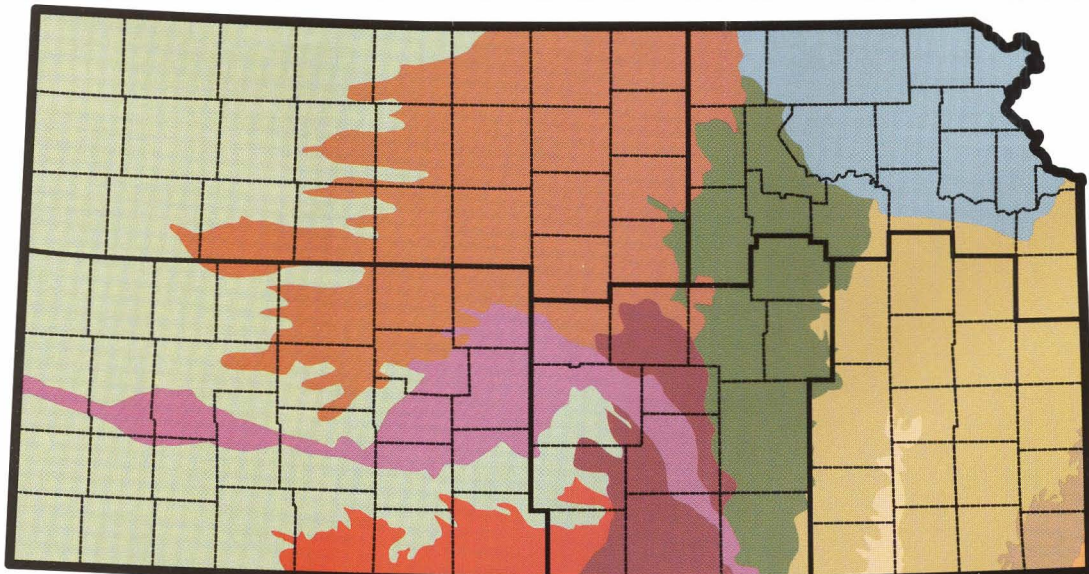
Hunting in Kansas can be described with one word: variety. From east to west, north to south, Kansas has a rich and diverse array of habitat and game species. The hunting heritage runs deep in Kansas, and hunting is important to the quality of life and rural economies. Unique hunting opportunities wait on the eastern and western borders, and the central region provides variety.

The physiographic regions of the state, distinguished by distinct climactic, topographic and vegetative differences, allow such variety. Generally, Kansas' climate is wetter in the east than the west. In fact, the southeast region may receive 40 inches of rain per year, whereas the southwest region may receive less than 15. Being familiar with the physiographic regions can help a hunter select an area of the state to correspond with the preferred type of game, as well as the style of hunting desired.



The **High Plains**, roughly the western one-third of the state, is the largest and driest region. Originally shortgrass prairie and nearly treeless, most of the High Plains has seen dramatic changes due to agri-

culture. Many areas of the High Plains are intensively farmed, and this combination of native grass and agricultural activities has made the High Plains region traditionally the best for ring-necked pheasants. The High Plains are wide open and vast. Where untilled, there are native shortgrasses, yucca, sagebrush and other arid-climate vegetation. Antelope, once native to most of the western half of the state, still inhabit the far western reaches of this region and provide limited hunting



L E G E N D			
Light Green	High Plains	Yellow	Chautauqua Hills
Dark Green	Flint Hills	Gold	Osage Questas
Red	Red Hills	Orange	Ozark Plateau
Purple	Arkansas River Lowlands	Brown	Cherokee Lowlands
Dark Red	Wellington / McPherson Lowlands	Orange-Red	Smoky Hills
Blue	Glaciated Region		

opportunities. Mule deer thrive in the region. Many acres of farmland in this region have been converted back to native grass through the Conservation Reserve Program.



In the northcentral part of the state, the **Smoky Hills** follow the Smoky Hill River to the east. The Smoky Hill region is characterized by vast areas of rolling grassland and some dramatic topography. The land is farmed along the river bottoms, and this combination of permanent native cover and agriculture, provides pheasant, quail, turkey, and deer hunting opportunities.

prairie chicken habitat. This midgrass prairie is dotted with sandhill plum thickets and eastern redcedars, and provides good quail, pheasant, deer and turkey hunting.

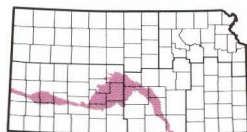


In the southcentral region, the beautiful **Red Hills** bring topographic relief to the land once again. The Red Hills are largely native grassland with bluffs, buttes and steep draws and canyons filled with cedars, sumac and sandhill plum thickets. Timbered areas follow the many spring-fed creeks and streams throughout the region. This area is known for bobwhite quail, turkey and deer hunting.

wetland, prairie and croplands provides a variety of game species for hunters, from upland birds, deer, turkey and small game. And during wet years, the wetlands and flooded croplands attract untold numbers of waterfowl.



The north-south strip of grassland through the east-central portion of the state is known as the **Flint Hills**. Much of this region remains in native grass because a layer of rock just beneath the soil's surface prevents tillage. Vast areas of unbroken tallgrass prairie with timbered, brushy draws and streambottoms make this unique area ideal for quail, deer, and turkey, and it remains the nation's stronghold for the greater prairie chicken.



In the southwest, the **Arkansas River Lowlands** follow the river from the Colorado border, east to Wichita, then south to the Oklahoma. Sand and sediment carried by the river have formed sandhill grasslands along this corridor, and this area provides ideal lesser



In the center of the state are the **Wellington and McPherson Lowlands**. These regions are characterized by several wetlands and salt marshes and form the transition zone between the west and the Flint Hills. Much of the region is intensively farmed. The combination of

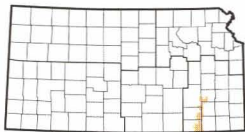


The far northeast corner of the state is the **Glaciated Region**. This region features gently rolling plains with broad stream valleys. It is characterized by heavily timbered, rocky hillsides and small irregular croplands. This region provides excellent deer and turkey hunting, as well as bobwhite quail, rabbit and squirrel opportunities.

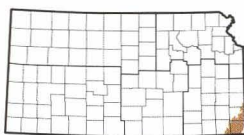


The **Osage Questas** dominate the southeast one-quarter of the state. Rolling grasslands, limestone bluffs, and heavily timbered bottomlands mark this region. The

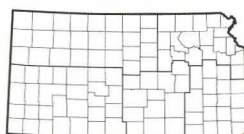
hardwood timber provides excellent deer, squirrel, and eastern turkey hunting. Quail hunting can also be very good on the grasslands and at the edges of timber, grass and small crop fields.



At the southern reaches of the southeast quarter are the **Chautauqua Hills**. This rolling tall-grass prairie is dotted with thickly timbered bottoms and draws. Underlying sandstone protects the grasslands, and the croplands are restricted to streambottoms. The region provides excellent deer, turkey and quail hunting.



The **Cherokee Lowlands** distinguish the southeast corner with thick brush and timber, and rich coal resources. In recent years, thousands of acres, once strip mined for coal, have been reclaimed to native vegetation. The Mined Land Wildlife area was donated to the department for public use. The area provides deer, quail, squirrel and turkey hunting, as well as fishing in the hundreds of strip pits.



In the far southeast lies the **Ozark Plateau**. This is the wettest region of the state receiving more than 40 inches of rain annually. Heavy timber, dissected by streams and broken with small croplands make this area ideal for deer and turkey hunting. Bobwhites are found on the edge areas between timber, grass and croplands.

Hunting

Ring-necked pheasant

Arguably Kansas' top draw, the ring-necked pheasant was introduced in the state in 1906. Since then, it has become a symbol of upland bird hunting in Kansas. Annual pheasant harvests are usually within the top three in the nation. Pheasants are found in all parts of the state except the southeast. Traditionally, the best hunting is found in the northcentral and northwest regions, with the southwest coming in a close third. Other regions can have locally good pheasant numbers, and often provide good pheasant and quail combination hunting opportunities.

Bobwhite quail

Number Two on the upland bird draw is the bobwhite quail. And Kansas generally ranks within the top three states in quail harvest. While quail can be found statewide, populations are generally better in the east. The southeast region of the state is usually the top quail producer. And the northeast generally runs a close second. Numbers can be good locally in the northcentral, southcentral and southwest regions, where good pheasant/quail hunts are an attraction. During years of favorable weather, the Red Hills region can provide very good quail hunting amid a beautiful setting. In the far southwest corner of the state, scaled, or blue, quail are found in addition to bobwhites.



Prairie chicken

Kansas is home to two species of this prairie grouse; the greater and the lesser prairie chickens. Greater prairie chickens are found in most abundance in the Flint Hills. Greater are found in smaller numbers in the northcentral part of the state. These birds thrive in large areas of native grass, but have adapted to benefit from the small grain fields which provide high-protein food in winter. A special early season, opening in mid-September, allows hunters to hunt greater chickens over dogs, before the winter flocks form and the birds become unapproachable. The traditional opener on the first Saturday in November finds hunters stationed around the grain fields waiting for birds to fly in from the surrounding grasslands. The lesser prairie chicken is found mostly south and west of the Arkansas River Lowland. The lesser thrives in mid- and shortgrass grassland. Numbers of lessers have decreased as the prairie has been fragmented by land use.

Deer

Two deer species thrive in Kansas: the mule deer and the white-tailed deer. Mule deer are restricted to the western one-third of the state, primarily on the High Plains, Smoky Hills, and Red Hills regions. As you travel west to east, mule deer are less abundant, and whitetail numbers increase. White-tailed deer numbers have increased dramatically in the last 20 years, and they can be found virtually statewide, wherever suitable habitat exists. Highest whitetail densities are in the eastern one-third of the state. Whitetails have adapted well to Kansas' modern landscape, finding cover in natural woodlands, shelterbelts, old homesteads and grasslands and abundant food in cropfields. The selective management program has created a healthy deer herd, with excellent potential for trophy-sized bucks in all regions.

Turkey

Wild turkeys were reintroduced into Kansas in the 1960s, and the program has been a great success. Today, huntable populations of turkeys exist in nearly every county. The Rio Grande subspecies dominates in the western two-thirds of the state. Low numbers in the southwest provide only limited hunting. Hybrid Rio Grande/-Eastern birds are found in the northcentral region. The Eastern subspecies is common in the northeast and far southeast regions, where numbers have grown tremendously in recent years.

Waterfowl

Kansas lies in the middle of the Central Flyway, and waterfowl migrations can be spectacular. Waterfowl opportunities are limited in the arid west, but wherever reservoirs and marshes exist, good waterfowling can be found. Several waterfowl management areas and national wildlife refuges attract good numbers of waterfowl each fall and provide very good hunting, especially during wet water patterns when sheet water covers crop fields. An abundance of rivers, lakes, reservoirs and wetlands in the east attract good numbers of waterfowl, and in the far northeast, large numbers of snow geese congregate in late winter and early spring. Non-toxic shot is required for all waterfowl hunting, and in addition to the federal duck stamp, all hunters required to have a license, must have a state waterfowl stamp and a Harvest Information Program stamp. Weekly waterfowl reports are posted on the department's

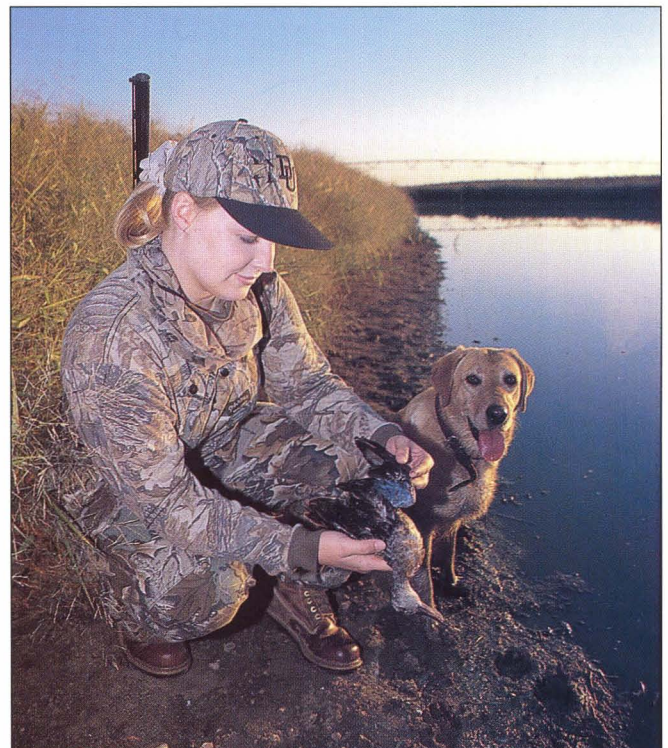
website beginning in October. www.kdwp.state.ks.us

Small Game

Cottontail rabbits and squirrels exist throughout the state wherever suitable habitat is available. Both are most abundant in the east, and in addition to fox squirrels, the hardwood timber of the eastern one-fourth of Kansas also has grey squirrels. Both rabbits and squirrels are overlooked by upland bird hunters, and hunting pressure is light. Excellent hunting opportunities are available for both species.

Other

Dove hunting can be excellent when warm, dry weather conditions continue into September. Good shooting can be found over worked crop fields, windmill water holes and grassland ponds. Doves may migrate before the traditional Sept. 1 opener in the northwest, especially ahead of an early cold front. Furbearers are common throughout the state. Coyote, bobcat, beaver, and raccoon are top draws, and provide good to very good trapping and hunting opportunities.



Private Land

Most land in Kansas is privately owned, so most of the hunting opportunities are found on private land. Kansas law requires that all who hunt on private land must have permission, whether that land is posted or not. For those who have the time to scout, contact landowners, and get acquainted, permission to hunt can be obtained. For those that don't have that luxury, the department has initiated the Walk-in Hunting Area (WIHA) program. The department began leasing private land for public hunting in 1996. In just three years, the program grew to nearly 500,000 acres. The department's goal is 1 million acres by 2004. WIHA has been popular with both hunters and landowners. Tracts range in size from 80 acres to several thousand,

and a wide variety of hunting opportunities are available. Two lease agreements are enrolled, opening land to hunters Sept. 1-Jan. 31 or Nov. 1-Jan. 31. The department prints atlases, available free of charge, showing county maps with enrolled lands marked. With an atlas in hand, a hunter can choose from several thousand tracts to hunt, many of which are in remote, out-of-the-way areas.

Public Lands

Approximately 400,000 acres of state- or federally-owned land are open to public hunting in Kansas. Many of the larger areas are located around reservoirs built by the U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation. These areas are often managed by the Department of Wildlife and Parks to provide optimum hunting opportu-

nities. Other public hunting lands are provided by U.S. Fish and Wildlife Service's national wildlife refuges, and the U.S. Forest Service's Cimarron National Grasslands in Morton County. Other state-owned and managed areas include waterfowl management areas such as Cheyenne Bottoms, and small tracts around state fishing lakes or land that has been acquired or donated to the state. Public areas, especially those near large population centers, can receive heavy hunting pressure. But hunters who avoid season openers or plan hunts during mid-week, can have good hunting experiences. As expected, hunters who put in extra scouting effort and avoid easily accessed areas will have more success.

Wildlife areas are managed specifically for wildlife and hunting opportunities, so camping is limited. Many wildlife areas are located near state parks, where excellent camping facilities are available. Some remote wildlife areas offer primitive camping in designated areas, but it's a good idea to check with the area Wildlife and Parks office for more specific camping information.

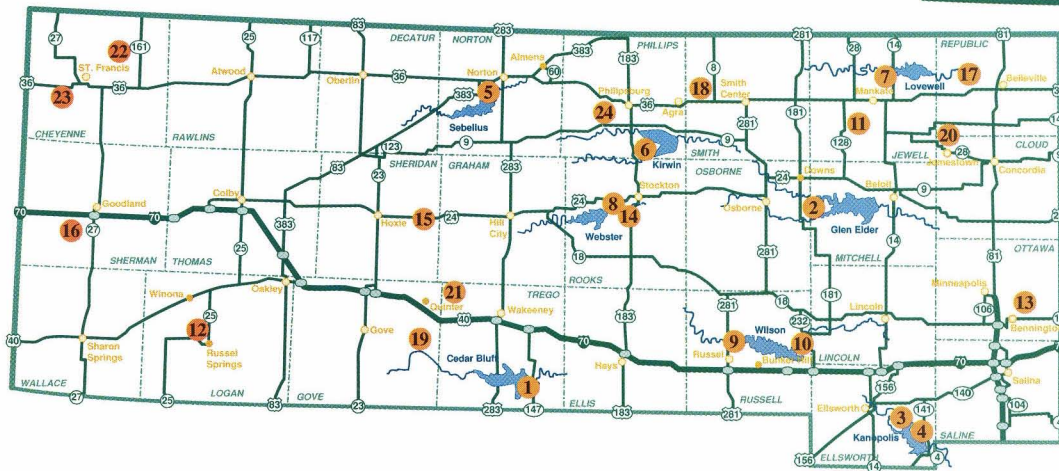
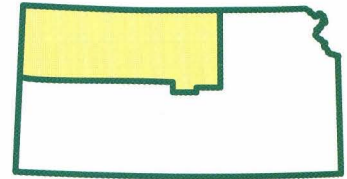
Some wildlife areas offer special hunts. These special hunts may limit the number of hunters on the area on a given day through a random drawing, or they may provide youth and other first-time hunters with a quality experience. Check with the local regional or wildlife area offices for information about special hunt options. A brochure listing special hunts along with an application is available.

Need More Information?

For more information about hunting in Kansas, individual wildlife area maps or a Walk-in Hunting Area atlas, contact your nearest Wildlife and Parks office, call the Pratt Operations office, (316) 672-5911, or visit the department's website, www.kdwp.state.ks.us.

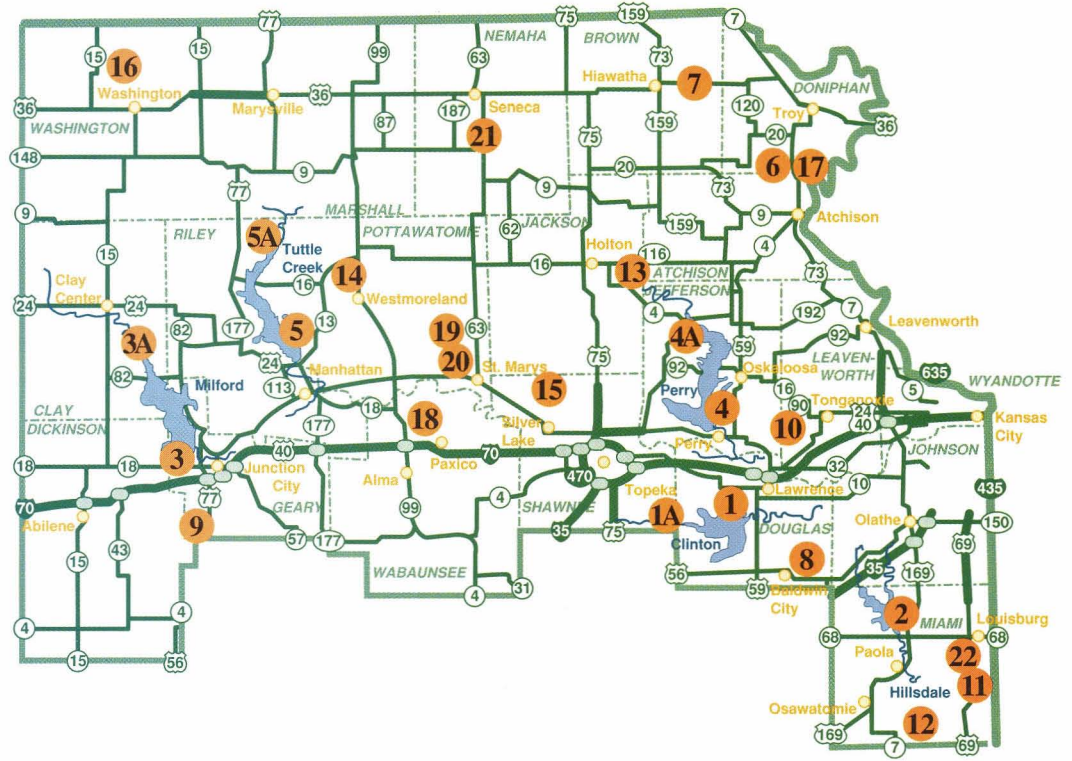
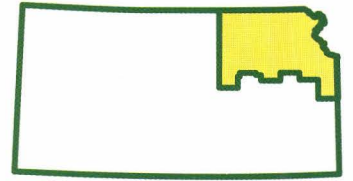


Region 1

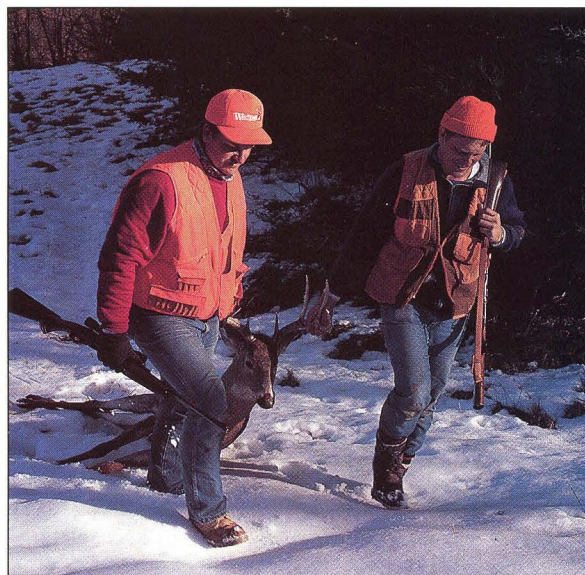


RESERVOIR WA					Boat Ramp	Designated Camping	Walk-In-Camping	Special (Draw) Hunts	Youth Hunt Area	ADA Hunt Area	Refuge Area	Trapping	Vault Toilet	Shooting Range	Whitetail Deer	Mule Deer	Rio Grande Turkey	Pheasant	Quail	Greater Prairie Chicken	Doves	Ducks	Snow Geese	Canada Geese	White Fronted Geese	Rabbits	Squirrels	Furbearers	
	acres (L)	(W)	phone (area)	managing agency																									
1 Cedar Bluff - 13 mi. S of I-70 on K-147	7,300	9,600	(785) 726-3212	KDWP/BOR	●	●	●	●	●	●	●	●	●		G	F	F	F	F	F	G			G	F	T	P	G	
2 Glen Elder - S of US 24 from Downs to Glen Elder	12,514	12,586	(785) 545-3345	KDWP/BOR	●	●	●	●	●	●	●	●	●		G	P	F	G	F	G	G	F	G	F	G	G	P	G	
3 Kanopolis - 30 mi. SW of Salina on K-141	4,179	3,550	(785) 546-2565	KDWP/COE	●	●	●	●	●	●	●	●	●		G	G	F	F	F	F	G			G	F	G	G	G	
4 Kanopolis - 30 mi. SW of Salina on K-141	10,000	0	(785) 546-2294	COE								●			G	G	P	F	F	F	G			G	F	G	G	G	
5 Norton - 3 mi. SW of Norton	6,421	2,230	(785) 877-2953	KDWP/BOR	●	●	●	●	●	●	●	●	●		F	F	F	G	P	F	F	G		G	P	G	P	G	
6 Kirwin - 15 mi. SE of Phillipsburg	3,700	5,080	(785) 543-6673	USFWS	●	●	●	●	●	●	●	●	●		G	F	G	G	F	F	G			G	F	G	P	G	
7 Lovewell - 4 mi. E, 10 mi. N of Mankato	2,229	2,986	(785) 753-4971	KDWP/BOR	●	●	●	●	●	●	●	●	●		G	G	G	F	F	F	F	G			G	F	G	G	
8 Webster - 8 mi. W of Stockton	5,750	3,740	(785) 425-6775	KDWP/BOR	●	●	●	●	●	●	●	●	●		G	F	F	F	F	F	F	F			F	F	G	P	G
9 Wilson - 8 mi. N of I-70 at Bunker Hill exit	8,039	9,040	(785) 658-2465	KDWP/COE	●	●	●	●	●	●	●	●	●		G	F	F	F	F	F	F	F			F	F	G	P	G
10 Wilson - 8 mi. N of I-70 on K-232	3,200	0	(785) 658-2551	COE								●			G	F	P	P	F	F	F			F	F	G	P	G	
STATE FISHING LAKE WA																													
11 Jewell - 6 mi. SW of Mankato	165	57	(785) 753-4971	KDWP	●	●							●		P			F	P						F	F			
12 Logan - 2 mi. NW of Russell Springs	271	SEAS	(785) 726-3212	KDWP	●	●							●				F		F	F					F	F			
13 Ottawa - 6 mi. NE of Bennington	611	148	(785) 546-2565	KDWP	●	●							●		F	F	F	F	F						G	F	F		
14 Rooks - 3 mi. SW of Stockton	243	64	(785) 425-6775	KDWP	●	●							●		F	F	F	F	F						G	F			
15 Sheridan - 11 mi. E of Hoxie	48	67	(785) 877-2953	KDWP	●	●							●		F	P	P	F	F										
16 Sherman - 10 mi. SW of Goodland	1,547	SEAS	(785) 726-3212	KDWP	●								●		F	F	P	P	F	F					F	G			
OTHER WILDLIFE AREAS																													
17 BRZON - 6 mi. NW of Belleville	320	2	(785) 753-4971	KDWP			●												G	F	G				G	F			
18 Francis Wachs - 11 mi. NE of Agra	785	2	(785) 425-6775	KDWP								●			F	P	P	G	F	P	P				G	G			
19 Gove - 23 mi. S of Quinter	160	0	(785) 726-3212	KDWP								●			F					F					F	G			
20 Jamestown - 3 mi. NW of Jamestown	2,038	1,400	(785) 753-4971	KDWP	●	●	●	●	●	●	●	●	●		F	P	G	F	F	G	G	G	F	G	P	G	P	G	
21 Sheridan - 5 mi. NE of Quinter	458	3	(785) 425-6775	KDWP									●		F	P	F	P	F	F				F	P	G			
22 South Fork - 11 mi. NE of St. Francis	1,100	3	(785) 877-2953	KDWP									●		F	F	F	F	P	F				F	F	G			
23 St. Francis - 3 mi. SW of St. Francis	480	5	(785) 877-2953	KDWP									●		F	F	F	P	F					F	F	G			
24 Vogel - 9 mi. SW of Phillipsburg	200	0	(785) 425-6775	KDWP			●						●					G	P						G	G			

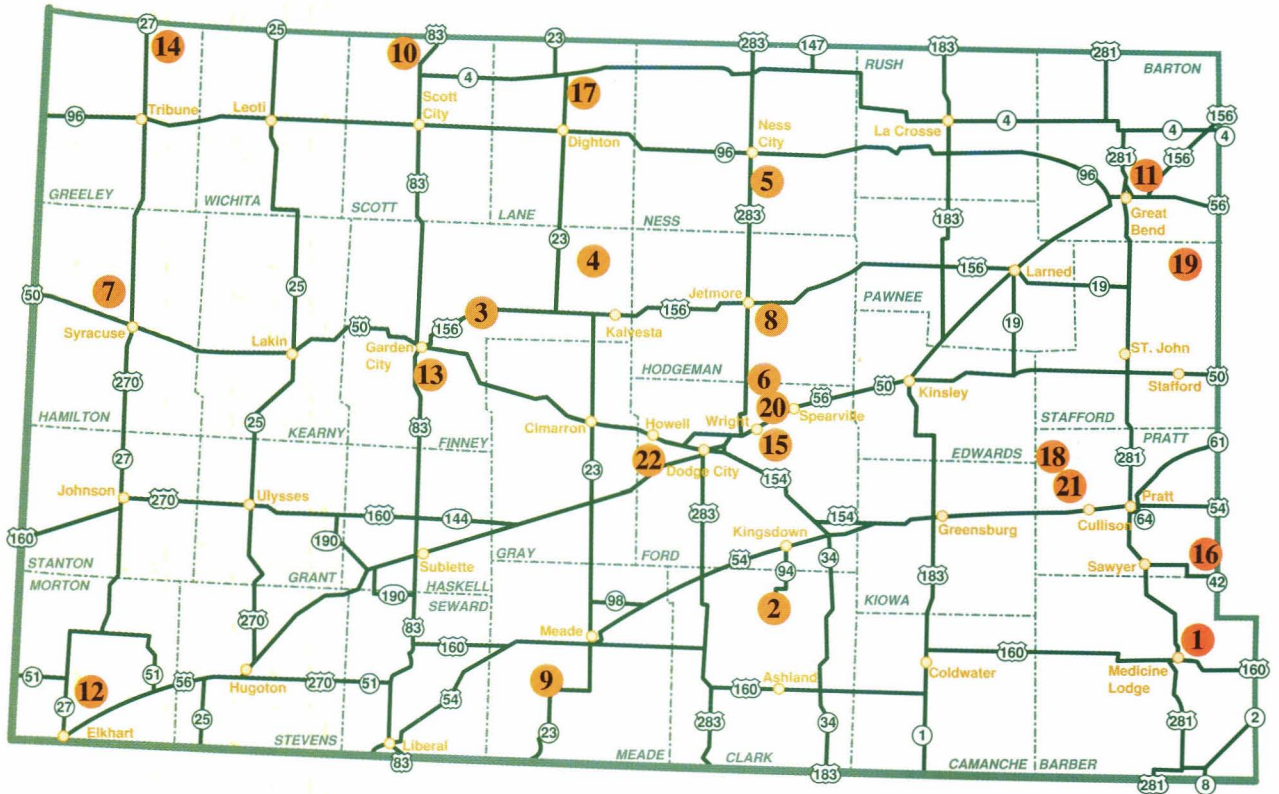
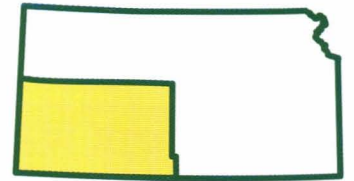
Region 2



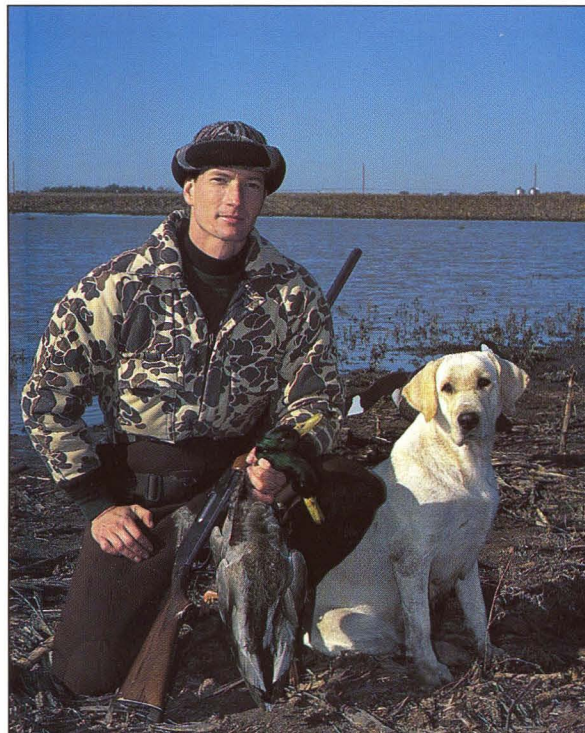
RESERVOIR WA					Boat Ramp	Designated Camping	Walk-In-Camping	Special (Draw) Hunts	Youth Hunt Area	ADA Hunt Area	Refuge Area	Trapping	Whitetail Deer	Eastern Wild Turkey	Rio Grande Turkey	Pheasant	Quail	Greater Prairie Chicken	Doves	Ducks	Snow Geese	Canada Geese	White Fronted Geese	Rabbits	Squirrels	Furbearers	
		acres (L) (W)	phone (area)	managing agency																							
1	Clinton - 4 mi. W of Lawrence	920	7,000	(785) 843-7665	COE	●	●	●					F	G		F		G	G	F	F	F	F	G	G		
1A	Clinton - 8 mi. W of Lawrence	9,200	100	(785) 887-6882	KDWP	●	●						F	G		F		G	G	F	F	F	F	G	G		
2	Hillsdale - 15 mi. S of Olathe on Hwy 169, 3 mi. W on 255 St.	7,700	4,500	(913) 783-4507	KDWP	●							F	G		F		G	G	P	F	F	F	G	G		
3	Milford - 5 mi. N of Junction City	1,500	15,600	(785) 238-5714	COE	●	●						G	G		G	F	G	G	P	P	F	F	G	G		
3A	Milford - 25 mi. N of Junction City	18,800	550	(785) 461-4502	KDWP	●	●	●					G	G	G	F	F	G	G	P	F	F	F	G	G		
4	Perry - 3 mi. N of Perry	5,000	11,200	(785) 597-5144	COE	●	●						G	G		F	F	G	G	F	F	F	F	G	G		
4A	Perry - 25 mi. NE of Topeka	9,894	1,000	(785) 945-6615	KDWP	●							G	G		F	F	G	G	F	F	F	F	G	G		
5	Tuttle Creek - 4 mi. N of Manhattan	6,500	13,500	(785) 539-8511	COE	●	●						G	G		F	F	F	G	G	P	F	P	G	G		
5A	Tuttle Creek - 22 mi. N of Manhattan on Hwy 77	12,000	360	(785) 363-7316	KDWP	●	●						G	G		F	F	F	G	G	P	F	P	G	F		
STATE FISHING LAKE WA																											
6	Atchison - 3 mi. N, 2 mi. W, 1/2 mi. N of Atchison	182	66	(913) 367-7811	KDWP	●	●						F	F		F		P	F				P	F	F		
7	Brown - 8 mi. E of Hiawatha	129	60	(913) 367-7811	KDWP	●	●						F		F	F		P	F	F			P	F	F		
8	Douglas - 1 mi. N, 2 mi. E of Baldwin City	538	180	(785) 887-6882	KDWP	●	●						F	F		F		P	P				P	F	F		
9	Geary - 10 mi. S of Junction City off Hwy 77	180	90	(785) 461-5402	KDWP	●	●						F		P	F		P	P				P	F	F		
10	Leavenworth - 3 mi. N, 2 mi. W of Tonganoxie on Hwy 90	341	160	(785) 887-6882	KDWP	●	●						G	F		F		P	F				P	F	F		
11	Louisburg-Middle Creek - 7 mi. S of Louisburg	220	281	(913) 783-4507	KDWP	●	●						G	F		F		P	P				P	F	F		
12	Miami - 8 mi. E, 5 mi. S of Osawatomie	149	118	(785) 783-4507	KDWP		●						F	F		P		P	F				P	F	F		
13	Nebo - 8 mi. E, 1 mi. S, 1/2 mi. W of Holton	45	30	(913) 367-7811	KDWP	●	●						F		P		P	P					P	F	F		
14	Pottawatomie No.1 - 5 mi. N of Westmoreland	160	25	(785) 537-9804	KDWP	●	●						G		P		P	P					P	F	F		
15	Shawnee - 7 1/2 mi. N of Silver Lake	680	135	(785) 887-6882	KDWP	●	●						P		F	P		P	P				P	F	F		
16	Washington - 7 mi. N, 3 mi. W of Washington	400	20	(785) 461-5402	KDWP	●	●						G		F	F		P	F				P	F	F		
OTHER WILDLIFE AREAS																											
17	Benedictine Bottoms - 2 mi. NE of Atchison	943	200	(913) 367-7811	KDWP			●	●				G		G	F	F	G	F	F	F	F	P	P	F		
18	Bolton - 2 1/2 mi. N, 1 1/2 mi. W of Paxico	659	1	(785) 945-6615	KDWP								F	P	P	F	F	F					P	F	F		
19	Jeffery Energy Center Unit 1 - 5 mi. N, 3 mi. W of St. Marys	1,380	6	(785) 537-9804	KDWP								G	G	F	F	F	F				F	F	F	F		
20	Jeffery Energy Center Unit 2 - 5 mi. N, 3 mi. W of St. Marys	5,100	575	(785) 537-9804	W. RESOURCES	●		●	●				G		F	F	F	F	G	G	F	F	F	F	F		
21	Nemaha - 4 1/2 mi. S of Seneca on Hwy 63	705	0	(785) 363-7316	KDWP		●						G	G		F	F	F					P	G	F		
22	Rutlander - 1/2 mi. N of Louisberg-Middle Creek SFL	108	0	(913) 783-4507	KDWP								F	P		F		F					P	F	F		



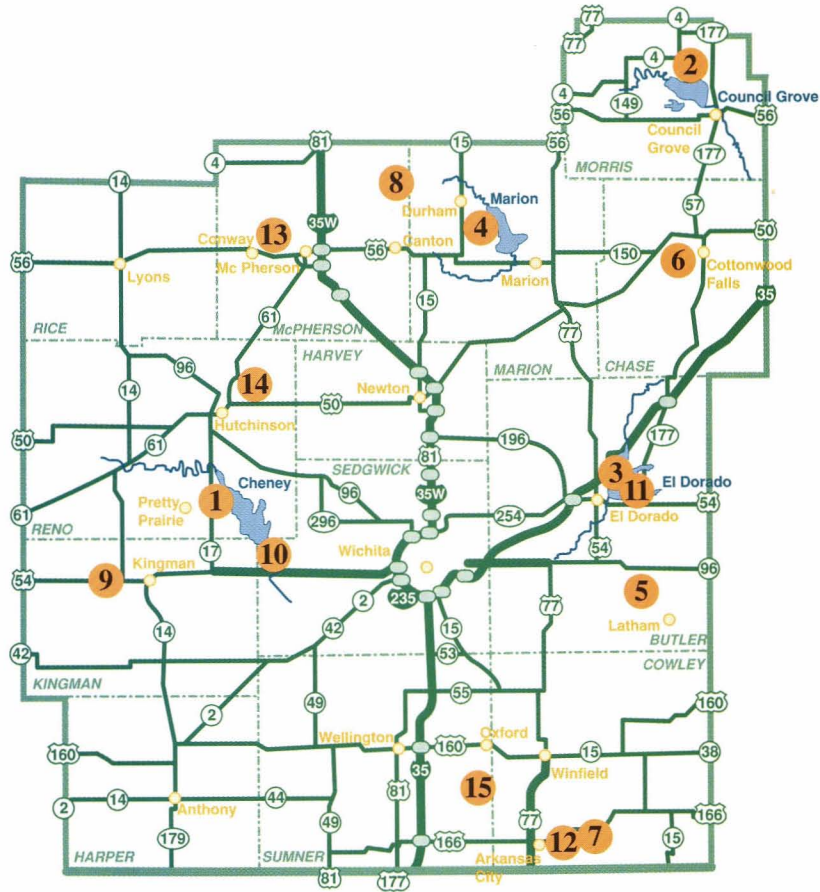
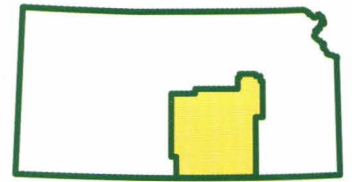
Region 3



STATE FISHING LAKE WA					Boat Ramp	Designated Camping	Walk-In-Camping	Youth Hunt Area	ADA Hunt Area	Refuge Area	Trapping	Unrestricted Camping	Open by Written Notice	No-tox Shotgun hunting	Whitetail Deer	Mule Deer	Rio Grande Turkey	Pheasant	Quail	Lesser Prairie Chicken	Doves	Ducks	Snow Geese	Canada Geese	White Fronted Geese	Rabbits	Squirrels	Furbearers
		acres (L) (W)	phone (area)	managing agency																								
1	Barber – Upper end of Barber SFL, north edge of Medicine Lodge	179	77	(316) 227-8609	KDWP	●	●				●	●			F	F	P	G	P	G	P	G	G	G	G	G	G	
2	Clark – 8 1/2 mi. S, 1 mi. W of Kingsdown	700	337	(316) 369-2384	KDWP	●	●			●	●				G	P	G	F	G	F	F	G	F	G	G	G		
3	Concannon – 18 mi. E of Garden City on Hwy 156	800	60	(316) 276-8886	KDWP	●	●				●	●			G	G	G		G	G	G	G	G	G	G	F		
4	Finney – 8 mi. N, 3 mi. W of Kalvesta	863	110	(316) 276-8886	KDWP	●	●				●	●			G	G	G		G	G	G	G	P	G	F	F		
5	Goodman – 5 mi. S, 2 1/5 mi. E of Ness City	40	225	(316) 276-8886	KDWP	●	●				●				F	F	F		G	F	F	F	G					
6	Hain – 5 mi. N, 2 1/4 mi. E of Wright off Hwy 283	53	53	(316) 369-2384	KDWP		●				●	●							G	G	F	G	P					
7	Hamilton – 3 mi. W, 4 mi. N of Syracuse	432	60	(316) 276-8886	KDWP	●	●				●	●			G	G	G	P	G	F	F	F	G					
8	Hodgemen – 3 mi. E, 2 mi. S of Jetmore	254	87	(316) 276-8886	KDWP		●	●	●	●	●				G	G	G	P	G	G	F	F	G					
9	Meade – 8 mi. S, 5 mi. W of Meade	420	0	(316) 276-8886	KDWP		●	●	●	●	●				G	G	G	F	G	F	G	G						
10	Scott – 14 mi. N, 1 mi. W of Scott City	160	0	(316) 276-8886	KDWP				●	●					G	F	G	F	F	G				G	F			
OTHER WILDLIFE AREAS																												
11	Cheyenne Bottoms – 5 mi. N, 2 mi. E of Great Bend	7,957	12,000	(316) 793-3066	USFWS	●	●	●	●	●	●	●	●		G	P	P	G	F	G	G	G	G	G	G	G	G	
12	Cimarron National Grasslands – Morton County near Elkhart	108,000	11	(316) 697-4621	USFWS		●				●				G	G	G	G	G	G	G	F	F	P	G	G		
13	Finney Game Refuge – 1/2 mi. S of Garden City (Restricted)	3,700	5	(316) 276-8886	KDWP					●		●			G	G	F	G	G					G	F			
14	Greeley Co. – 8 mi. N, 5 mi. E, 2 mi. N, 1/2 mi. E of Tribune	900	0	(316) 276-8886	KDWP						●				G	G			G				G	F				
15	Herron Playa – 1 mi. S, 1/2 mi. W, 3 mi. S of Spearville (Restricted)	360	50	(316) 227-8609	KDWP							●	●		F	F	G	F	G	G	F	G	F	G				
16	Isabel Wetlands – 8 mi. E of Sawyer	200	40	(316) 227-8609	KDWP		●			●	●	●			G	F	G	G	G	G	F	G	F	G	P	F		
17	Lane – 6 1/2 mi. N, 3 mi. E of Dighton	42	0	(316) 276-8886	KDWP		●			●	●				F	F	G		G					G				
18	Pratt Sandhills – 5 mi. W, 7 mi. N of Cullison	4,757	0	(316) 227-8609	KDWP		●	●	●	●					G	F	G	G	G	G				G	F	G		
19	Quivira NWR – 13 mi. N of Stafford	8,000	1,200	(316) 486-2393	KDWP				●			●			G	F	F	F	G	G	G	G	G	G				
20	Stein Playa – 2 1/2 mi. W, 1/2 mi. S of Spearville (Restricted)	115	50	(316) 227-8609	KDWP							●	●		F	F	G		G	G	F	G	G	F	G	F		
21	Texas Lake Wetlands – 4 mi. W, 1 mi. N of Cullison	880	50	(316) 227-8609	KDWP		●			●	●	●			G	G	G	G	G	F	G	F	G					
22	Wild Turkey Playa – 4 mi. S of Howell (Restricted)	160	10	(316) 227-8609	KDWP							●	●		G	G	G	G	G	F	G	P	G					



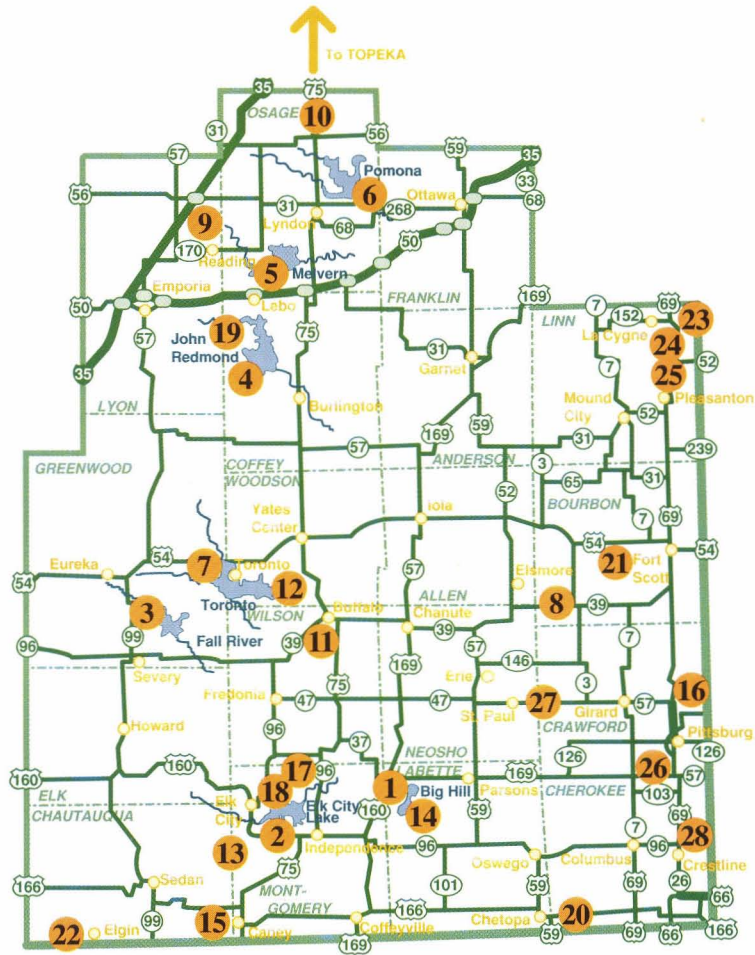
Region 4



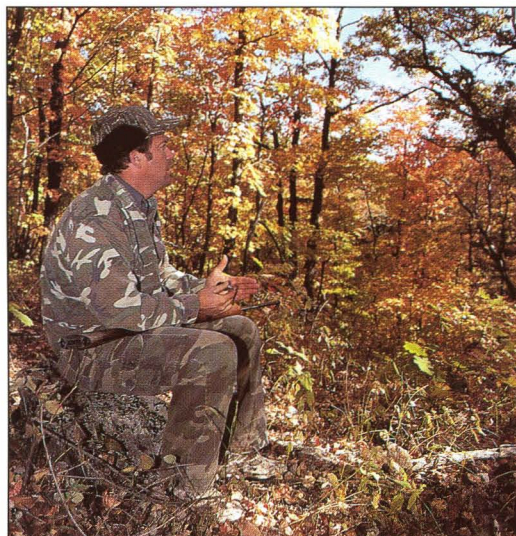
RESERVOIR WA					Boat Ramp	Designated Camping	Vault Toilet	Special (Draw) Hunts	Youth Hunt Area	ADA Hunt Area	Refuge Area	Trapping	Archery Deer Only	White-tail Deer	Wild Turkey	Pheasant	Quail	Greater Prairie Chicken	Doves	Ducks	Snow Geese	Canada Geese	White-fronted Geese	Rabbits	Squirrels	Furbearers	
	acres (L)	acres (W)	phone (area)	managing agency																							
1	Cheney - 7 mi. E of Pretty Prairie	5,397	9,537	(316) 459-6922	KDWP	●	●	●			●	●	G	F	G	F	G	F	G	P	G	P	G	F	G		
2	Council Grove - 5 mi. NW of Council Grove	2,638	3,235	(316) 767-5900	KDWP	●	●	●	●	●			G	F	P	G	F	G	G	F	G	P	G	G	G		
3	El Dorado - 2 mi. E, 1 mi. N of El Dorado	4,000	8,000	(316) 321-7180	KDWP	●	●	●			●	●	G	F	P	G	F	G	G		G		G	F	G		
4	Marion - 2 mi. S, 2 mi. E of Durham	4,300	6,160	(316) 732-3946	KDWP	●	●	●	●	●			G	F	G	F		G	G	F	G	F	G	P	G		
STATE FISHING LAKE WA																											
5	Butler - 3 mi. W, 1 mi. N of Latham	196	124	(316) 876-5730	KDWP	●	●	●			●		F	F		G	P	F	F		F		F	F	F		
6	Chase - 1 1/2 mi. W of Cottonwood Falls	383	109	(316) 767-5900	KDWP	●	●	●			●		F	P		F	F	P	F		F		F	P	F		
7	Cowley - 16 mi. E of Arkansas City on Hwy 166	113	84	(316) 876-5730	KDWP	●	●	●			●		F	F		F	F	F	F		F		F	P	F		
8	McPherson State Lake - 6 mi. N, 2 mi. W of Canton	260	46	(316) 628-4592	KDWP	●	●	●			●	●	G														
OTHER WILDLIFE AREAS																											
9	Byron Walker / Kingman State Lake - 7 mi. W of Kingman	4,529	165	(316) 532-3242	KDWP	●	●	●			●	●	G	G	P	G		G	G	P	F	P	G	G	G		
10	Cheney State Park - 25 mi. W of Wichita	1,913	9,537	(316) 542-3664	KDWP	●	●	●					F	P		F	F						P	P	G		
11	El Dorado State Park - 2 mi. E of El Dorado	4,000	8,000	(316) 321-7180	KDWP	●	●	●	●	●			F	P	G	G		P	F		G		P		F		
12	Kaw - 1 mi. SE of Arkansas City	4,341	0	(316) 878-5730	KDWP	●					●		G	G	P	G		G	F		F		F	F	G		
13	McPherson Wetlands - 2 mi. N, 1 mi. E of Conway	2,092	926	(316) 241-7669	KDWP						●	●	P	G	P		G	G	G	G	G	P		G			
14	Sandhills State Park - 3 mi. NE of Hutchinson	800	0	(316) 542-3664	KDWP				●	●			G	G	F	G		F				F		F			
15	Slate Creek - 6 mi. S, 1 1/2 mi. W of Oxford	827	85	(316) 876-5730	KDWP						●		G	P	G	G		F	G	P	G	P	F		G		



Region 5



RESERVOIR WA					Boat Ramp	Designated Camping	Walk-In-Camping	Shotgun & Archery Only	Youth Hunt Area	ADA Hunt Area	Refuge Area	Trapping	No-Pistols on Cntr Rifles	No-tox Shotgun hunting	Waterfowl permit Reqrd.	Whitetail Deer	Eastern Wild Turkey	Rio Grande Turkey	Quail	Greater Prairie Chicken	Doves	Ducks	Snow Geese	Canada Geese	White Fronted Geese	Rabbits	Squirrels	Furbearers
		acres (L) (W)	phone (area)	managing agency																								
1	Big Hill - 9 mi. W, 4 mi. S of Parsons	800	1,240	(316) 336-2741	COE	●	●					●				G	G				F	G	G	G	G	G	G	
2	Elk City - 3 mi. W of Independence	11,880	4,450	(316) 331-6820	COE/KDWP	●	●		●		●	●				G	G	F		F	G	G	G	G	G	G	G	
3	Fall River - 6 mi. N, 1 mi. E of Severy	8,382	2,500	(316) 583-6783	COE/KDWP	●	●				●	●				G	G	F	F	G	G	G	G	G	G	G	G	
4	John Redmond - 4 mi. W, 2 mi. N of Burlington	1,637	100	(316) 364-8614	COE/KDWP	●	●	●				●				G	G	G		G	G	G	G	G	G	G	G	
5	Melvorn - 4 mi. N of Lebo	10,407	7,000	(316) 699-3372	COE/KDWP	●			●	●	●	●				G	G	F		G	G	G	G	G	G	G	G	
6	Pomona - 17 mi. W of Ottawa	3,600	4,000	(785) 539-8511	COE	●						●				G	G				G				G	G	G	
7	Toronto - 1 mi. W of Toronto	3,981	2,800	(316) 583-6783	COE/KDWP	●	●		●		●					G	G	F		F	G	G	G	F	G	G	G	
STATE FISHING LAKE WA																												
8	Bourbon - 4 1/2 mi. E of Elsmore	277	119	(316) 449-2539	KDWP	●	●					●				G	G	F		G					G	G	G	
9	Lyon - 5 mi. W, 1 mi. N of Reading	442	140	(316) 699-3372	KDWP	●	●			●		●				F		G		G	G				G	G	G	
10	Osage - 10 mi. S of Topeka	366	140	(316) 699-3372	KDWP	●	●	●				●				G		G		G					G	G	G	
11	Wilson - 1 mi. S of Buffalo	172	119	(316) 637-2748	KDWP	●	●	●										G		G					G			
12	Woodson - 5 mi. E of Toronto	2,700	180	(316) 637-2748	KDWP	●	●	●				●				G	G	G	F	G		G		G	G	G	G	
OTHER WILDLIFE AREAS																												
13	Berentz/Dick - 2 mi. W, 2 mi. S, 10 1/2 mi. W of Independence	1,350	10	(316) 331-6820	KDWP			●				●				G	G	G							G	G	G	
14	Big Hill - 8 mi. W, 4 mi. S of Parsons	1,300	20	(316) 331-6820	KDWP	●	●	●		●		●				G	G	G		G					G	G	G	
15	Copan - 1/2 mi. W of Caney	2,340	20	(316) 331-6820	KDWP				●		●					G	G	G		F					G	G	G	
16	Crawford - 4 mi. N, 1 mi. E of Pittsburg	510	0	(316) 231-3173	KDWP													G							G			
17	Dove Flats - 2 1/2 mi. E, 1 1/2 mi. N of Elk City	206	0	(316) 331-6820	KDWP							●						G							G	G	G	
18	Duck Creek - 1 1/2 mi. E, 3 1/3 mi. N of Elk City	246	0	(316) 331-6820	KDWP							●				G	G	G							G	G	G	
19	Flint Hills NWR - 15 mi. SE of Emporia	7,500	9,400	(316) 392-5553	USFWS	●					●	●	●			G	G	F	F	G	G	G	F	G	G	G	G	
20	Harmon - 2 mi. N, 1 1/4 mi. E, 1 mi. S of Chetopa	100	2	(316) 231-3173	KDWP		●	●				●				G	G	F							G	G	G	
21	Hollister - 6 mi W, 2 mi. S of Fort Scott	2,432	0	(316) 449-2539	KDWP			●				●				G	G	G	G						G	G	G	
22	Hulah - Scattered tracts east and west of Elgin	800	0	(918) 532-4334	COE							●				G	G	F		F					G	G	G	
23	La Cygne - 5 mi. E of La Cygne	4,080	2,600	(913) 352-8941	KDWP							●	●			G	G	F		G					G	G	G	
24	Marias des Cygnes - 5 mi. N of Pleasanton	4,418	2,817	(913) 352-8941	KDWP							●	●	●		G	G			G	F	G	F	G	G	G	G	
25	Marias des Cygnes NWR - 1 mi. N of Pleasanton	7,500	100	(913) 352-8956	USFWS	●	●					●				G	G	G		G	G	G	F	G	G	G		
26	Mined Land - Crawford and Cherokee Counties	12,962	1,543	(316) 231-3173	KDWP	●	●		●		●	●	●			G	G	G	G	G	F	G	F	G	G	G	G	
27	Neosho - 1 mi. E of St. Paul	3,243	800	(316) 449-2539	KDWP	●	●				●	●	●			G	G	F		G	F	F	F	F	G	G	G	
28	Spring River - 3 mi. E, 1 1/4 mi. N of Crestline	424	0	(316) 231-3173	KDWP	●	●					●	●			G	G	F							G	G	G	



Department Offices

OFFICE OF THE SECRETARY

900 SW Jackson, Suite 502
Topeka, KS 66612-1233
(913) 296-2281

REGION 2

3300 SW 29th
Topeka, KS 66614-2053
(913) 273-6740

REGION 5

1500 W. 7th
P.O. Box 777
Chanute, KS 66720-0777
(316) 431-0380

OPERATIONS OFFICE

512 SE 25th Avenue
Pratt, KS 67124-8174
(316) 672-5911

REGION 3

808 McArtor Rd,
Dodge City, KS 67801-6024
(316) 227-8609

KANSAS CITY OFFICE

14639 W. 95th
Lenexa, KS 66215-1164
(913) 894-9113

REGION 1

P.O. Box 338
U.S. 183 Bypass
Hays, KS 67601-0338
(913) 628-8614

REGION 4

6232 E. 29th. N.
Wichita, KS 67202
(316) 683-8069

EMPORIA INVESTIGATIONS OFFICE

1830 Merchant
Emporia, KS 66801-1525
(316) 342-0658

Wildlife Area Offices

Cedar Bluff/ Webster/ Norton	(913)726-3212	Lovewell	(913)753-4971	Prairie Dog SP	(913)877-2953
Cheney	(316)542-3664	Marais des Cygnes	(913)352-8941	Webster	(913)425-6775
Cheyenne Bottoms	(316)793-7730	Meade	(316)873-2572		
Clinton	(913)842-8562	Milford	(913)238-3014	FEDERAL OFFICES	
Council Grove	(316)767-5900	Mined Land	(316)231-3173	Cimarron National Grasslands	(316)697-4621
Crawford	(316)362-3671	Perry	(913)246-3449	Flint Hills National Wildlife Refuge	(316)392-5553
Eisenhower/Pomona	(913)528-4102	Scott	(316)872-2061	Kirwin National Wildlife Refuge	(913)543-6673
El Dorado	(316)321-7180	Toronto/Fall River	(316)637-2213	Quivira National Wildlife Refuge	(316)486-2393
Elk City	(316)331-6295	Tuttle Creek	(913)539-7941		
Glen Elder	(913)545-3345	Wilson/ Kanopolis	(913)658-2465		
Hillsdale	(913)783-4507	Kanopolis State Park	(913)546-2565		
		Pomona State Park	(913)828-4933		

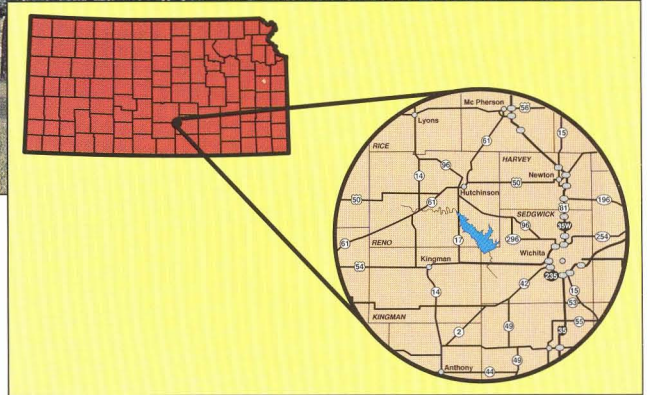
Equal opportunity to participate in and benefit from programs described herein is available to all individuals without regard to race, color, national origin, sex, religion, age or handicap. Complaints of discrimination should be sent to Office of the Secretary, Kansas Department of Wildlife and Parks,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

Cheney State Park

By Bob Mathews

Chief of Information and Education Section, Pratt

photos by Mike Blair



Located within an hour of 25 percent of the state's population, Cheney State Park is an understandably popular destination. But its annual visitation — about 550,000 — is as much a reflection of its unique variety of recreational opportunities as for its location. World-class sailing conditions. More than 9,000 acres of boating waters. Sixty-seven miles of shoreline. Productive white bass, crappie, channel catfish, striped bass, and walleye fishing. A nearby, 5,200-acre public wildlife area. And a lakeside state park totalling more than 1,900 acres of aesthetic campgrounds, beaches, and greenery.

Lying along the North Fork of the Ninnescah River in Reno, Kingman, and Sedgwick counties, the 9,500-acre Cheney Reservoir has served a steadily growing demand for water-based recreation since it was completed in 1964. Due to its proximity to Wichita and Hutchinson, Cheney quickly became the most visited state park in Kansas as facilities were developed through the 1960's. As development continued, on land leased from the U. S. Bureau of Reclamation, visitation grew steadily.

The park comprises two separate tracts on opposite ends of the dam at the south end of the reservoir. Facilities include a large marina, a sailboat marina, numerous developed campgrounds, hiking/biking trails, several large beaches, and a

handicapped-accessible fishing pier. Park users reflect the variety of recreation available. Campers, picnickers, swimmers, boaters, sailors, windsurfers, anglers, and wildlife watchers are among the most frequent Cheney visitors. Park facilities include the following:

- 185 electric hookup-equipped campsites with water;
- 250 designated primitive camp sites, plus numerous open camp sites;
- seven day-use areas;
- six boat ramps;
- three courtesy docks;
- four swim beaches;
- a handicapped-accessible fishing jetty;
- four trailer dump stations;
- nine modern restrooms;
- six vault toilets;
- several shelter houses;
- Giefer Creek Nature Trail; and
- Spring Creek Wildlife Observation Area.

Major renovation has been underway at Cheney State Park in recent years. Appropriations from the Kansas Legislature and matching grants from the Bureau of Reclamation have outfitted the park with a variety of popular improvements. National Guard and Navy Seabee units have contributed substantial time and effort to many of them. New campgrounds have been built incorporating designated sites, ground grills, lantern stands,

picnic tables, and parking areas. Campgrounds have been separated from day-use areas, and new day-use areas have been developed. Low-water boat ramps and parking lots have been built for personal watercraft access. New handicapped-accessible restrooms have been added. Beaches have been renovated and equipped with handicapped-accessible walkways. Several miles of new paved roads have been constructed. Shore-protecting rip rap and jetties have been placed. Construction of six cabins is planned for the West Shore Area.

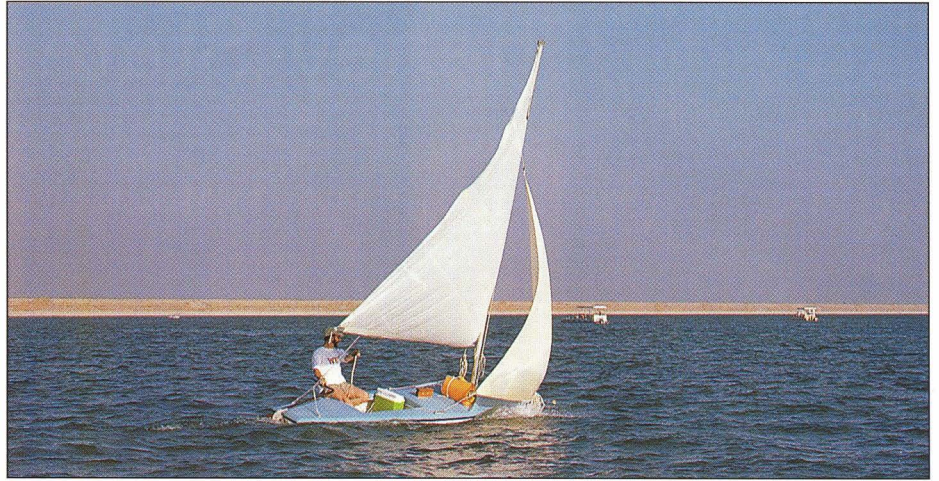
Sailboaters and windsurfers are well aware of Cheney's attraction. Sailors of every stripe, and from all parts of the U. S. and some foreign countries, are attracted to the dependable winds and expansive waters of Cheney Reservoir. Olympic-qualifying sailing competitions are conducted here. National and international regattas provide frequent, colorful reminders that the wind that vexes non-sailing Great Plains dwellers is a pure delight for mariners. Regattas are planned this year on July 4, July 10-11, July 17-18, August 7-8, August 28-29, and Sept. 5-6. As sailing activity has developed over the years, there has been similar growth in support facilities

and services for sailboaters.

The Cheney Lake Association, Ninnescah Sailing Association, Cheney Marina, and local businesses are well-organized and active supporters of Cheney State Park. The Marina, located on the East Shore Area, is a privately-owned business that provides slip rental, boat fuel, supplies, and winter boat storage services.

The Ninnescah Sailing Association is located on the West Shore Area and operates as a non-profit organization. NSA members' dues and slip fees pay for operation and maintenance of the area, which provides 165 uncovered slips, a large loading dock, youth sailing dock, boat ramp, and boat storage compounds. This year, the NSA completed construction of a 45-foot by 70-foot log structure known as the Afterdeck Activity Center, which provides meeting and storage space.

Cheney is well-known for its excellent channel catfish and white bass fishing. It also offers good prospects for crappie, striped bass, wiper, and walleye fishing. Anglers regularly look for walleye along the dam in late March and early April, crappie in the brush and cattails in April and May, white bass



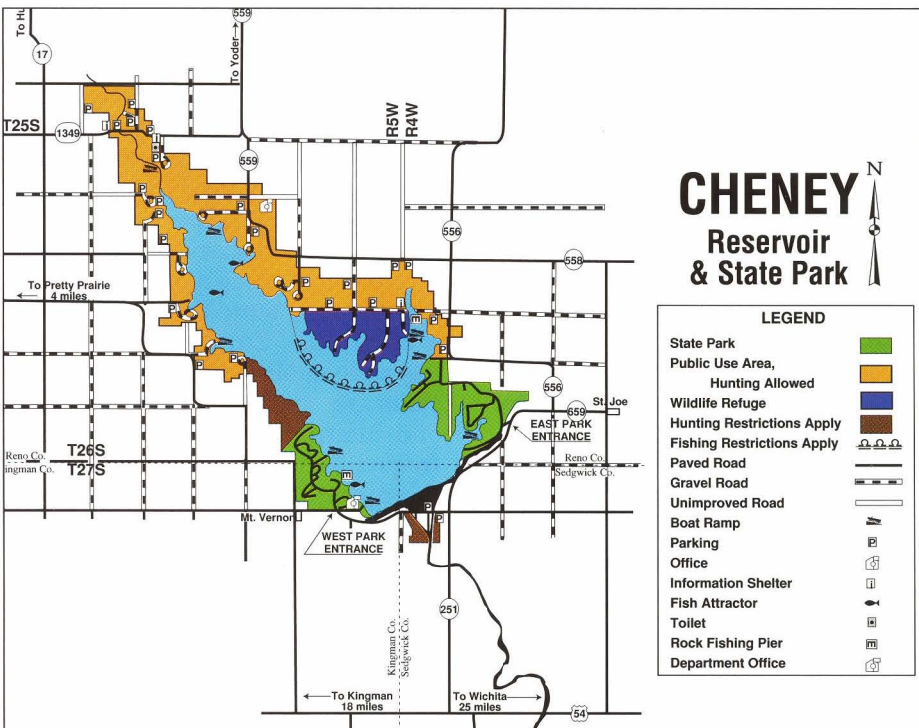
Just more than 9,000 acres of open water and dependable winds make Cheney popular with sailors. National and international regattas are held at Cheney each year.

spawning runs upriver in May, and channel catfish at fish feeders through the summer. Three deep-water fish attractors, marked by buoys, are productive for crappie especially in midsummer and winter, when crappie are not typically in shallow water. A handicapped-accessible fishing complex at the Toadstool Loop Jetty provides a fishing pier, brushpile fish attractors, and a fish feeder.

Wildlife watching is a prime attraction for many park visitors. The West Shore Area, with its grassy campsites and mature cot-

tonwood trees, is ideal for scouting out red-headed woodpeckers, orioles, kingbirds, and Mississippi kites. Fall and winter months offer a look at large flocks of waterfowl, as well as numerous bald eagles. The adjacent, 5,250-acre Cheney Wildlife Area at the north end of the reservoir is managed for a diversity of habitats that appeal to hunters and wildlife watchers alike. Pheasants, quail, rabbits, squirrels, and white-tailed deer are common. Wood ducks, kingfishers, herons, and woodland birds abound at the upper end of the reservoir where the Ninnescah River feeds into the lake. Shallow areas at the lake's north end attract large flocks of white pelicans during spring and fall migrations. A refuge has been established on the wildlife area for migratory waterfowl and is closed to all activities from Sept. 15 through March 1.

Cheney State Park has served as a springboard to a rich variety of outdoor fun for more than three decades. Recently-completed and planned improvements at the park make it even more enticing as a uniquely-equipped outdoor recreation destination for Kansans. You're invited to sample for yourself the diverse facilities and environments that make Cheney State Park and its associated public use areas a prime attraction.



Edited by Mark Shoup

COOL WEB

Editor:

I've got just one word to describe your Wildlife and Parks website [www.kdwp.state.ks.us]: Incredibly cool.

Okay, that's two words. So sue me.

It's visually appealing, yet the site isn't bogged down with time- (and bandwidth-) consuming visuals. It's got plenty of great information, yet it's all relatively easy to access. The layout is fantastic, and other states only dream html fantasies that they, too, could look so great on the information superhighway.

Although for the past 27 years I lived, hunted, and fished in the great state of Kansas, I've recently been transplanted to Springfield, Mo. (If only Bass Pro Shops would relocate their world headquarters to Wichita.) I've found it hard to explain just how incredible the outdoor lifestyle is in Kansas to my new co-workers. I e-mailed the KDWP URL to several co-workers, and now each one is begging for me to take them home for the opening weekend of pheasant/quail season.

Your site has made a number of new friends in the state of Missouri, I'll tell you that.

Thanks again for such a great site. It has made it real easy for me to impress my new Show-Me State neighbors, and although I'm not an official member of the state anymore (which, by the way, kills me), this site makes it easy for me to still consider myself a Kansan at heart.

*Todd Winters
Springfield, Missouri*

IN-LINES OK

Editor:

In response to Mr. Steele's letter in the Nov./Dec. issue of *Kansas Wildlife and Parks* (Page 33), I would like to say that although he made some fine points and painted a wonderful picture of a hunter in traditional dress toting a

matchlock rifle, I believe that the reason that hunters enjoy the season are as different and varied as the hunters themselves. Some hunters may want to hunt pre-rut; some may prefer the milder weather; some may just enjoy hunting with state-of-the-art equipment on a more limited budget.

I think that Kansans have many issues to look at before we start adopting the laws of Colorado. Some of these concerns include the size of deer herds, buck/doe ratios taken during muzzleloader season, muzzleloader tag revenue, and modern muzzleloader revenue in Kansas gun shops.

It seems like every article I read, in every hunting and wildlife magazine, tries to tell me why I should enjoy the sport I already enjoy, for my own personal reasons. Instead of regulating hunting more, I believe that we need to try to keep the sport open, to adapt the laws and equipment to make hunting more appealing and accessible to a greater number and variety of people.

*Jay Townley
Gardner Lake*

DUCK DUMBFOUNDED

Editor:

Last winter, I became interested in duck hunting. I saw thousands of ducks, mainly in the Flint Hills of Kansas. I was really interested in the fact that the regulations for the number of ducks had changed from the past years.

So I got my first set of decoys. I was really anxious to try them out. It wasn't until after Christmas when I got them, so I was limited on the time I was going to get to use them. I know that according to the regulations in my area, the season ended on Jan. 10. The date itself was not the problem, but I got confused on the time because almost every other hunt-able species closes on Jan. 31. It wasn't until a last-minute check that I found out that the season had already closed. If I had gone out, it could have jeopardized

my hunting privileges. I'm just 18, and it frustrated me that I almost made such a big mistake.

What I want to propose is that you make the dates in the regulations brochure bigger. I know that the dates are written plain and simple to read, but just like me, some people don't realize that date difference. Maybe just bold lettering to enhance the appearance might do the trick. This might cut down on illegal hunting by people who were unaware of the dates.

*Bill Cook
Eskridge*

Dear Mr. Cook:

Sorry you became confused about the waterfowl seasons. We appreciate your suggestion. It would be nice if we could set all hunting seasons the same, but that is simply not possible. Different species occur in different numbers, have different habitat needs, and are subject to hunting pressure at different levels. For this reason, biologists must spend much of the year analyzing research and harvest reports in order to determine how long a season is appropriate for any given species.

In the case of waterfowl, the U.S. Fish and Wildlife Service regulates the number of days we may hunt and the maximum bag limits. This is because they are migratory species -- not just Kansas residents -- and therefore protected by international treaty. Although we had one of the most liberal duck seasons in recent history last year, all we can -- or should -- do is follow the frameworks given us by the Service in setting these seasons.

I'm glad to know that you, as a dedicated hunter, have discovered that perhaps the first and most important tool you need is the "Kansas Hunting and Furharvesting Regulations Brochure." We're trying to improve it every year and appreciate suggestions. We'll try to make those dates stand out more next time.

--Shoup

NO DEAD ANIMALS

Editor:

My husband and I enjoyed *Kansas Wildlife and Parks* magazine for one year. In the past, the photographs of Kansas' wildlife made the magazine well worth the minimal cost. But I sent in a renewal of the subscription before receiving the Sept./Oct. 1998 issue. Because of the dead animal/hunter orientation of this issue, I have decided that I do not want this magazine to be delivered in future. I am not asking for a return of the subscription cost.

*Susan Armstrong
Bluff City*

Dear Ms. Armstrong:

I'm sorry you feel this way. Personally, I think diversity is one of the strong points of our magazine. In an issue that covers the first two months of hunting season, only three of the nine feature articles were about hunting. Articles on monarch butterflies and aquatic insects, pressing flowers and protecting the environment add strength to this issue of the magazine that goes far beyond hunting. And considering that of the issue's 40 photographs only two showed dead animals, I think it's unfair to characterize the magazine - and this issue in particular - as having a "dead animal/hunter orientation."

We believe that covering hunting issues, including ethics, is an important part of our mission, but it is no more important than protecting habitat for all wildlife, as the Environmental Services article shows.

We will respect your wishes and cancel your subscription but hope that you might take a closer look and, perhaps, one day reconsider.

-Shoup

WHITETAIL BOAR

Editor:

I have just received and read my May/June *Kansas Wildlife and Parks* magazine cover to cover. As usual, it is quite interesting with great articles and pictures. One article really caught my

eye. It was the one about the deer and elk eating the eggs (Page 41, "Bird-Eating Deer?"). What a refreshing thought. Most people thought the turkeys were eating them. What more healthy breakfast than for a deer to wakie wakie up in the morning to an egg and baby bird breakfast.

Tell the wild hogs to watch out.

At our annual Caldwell Sportsman dinner, this critter shows up [see photo]. I personally think it just may be the deer you are looking for. Notice the eyes; are they heat sensitive? The teeth could uproot any kind of nest. It's sure as the world not Bambi, and Little Red Riding Hood would probably be scared to death of him. Maybe we could have a special season on these critters.

All kidding aside, you have a great magazine. Keep up the good work. One thing I would like to see is more on the "Law" section - who is fined and how much. I think the sportsmen and sportswomen of Kansas are getting robbed of some of our natural resources for a small

amount of fines by our court system. Maybe if this was published and highlighted in our magazine, we could open some eyes in the courts and get stiffer fines. This, I feel, needs to be addressed by the system with backing by the sportsmen and sportswomen of this great state.

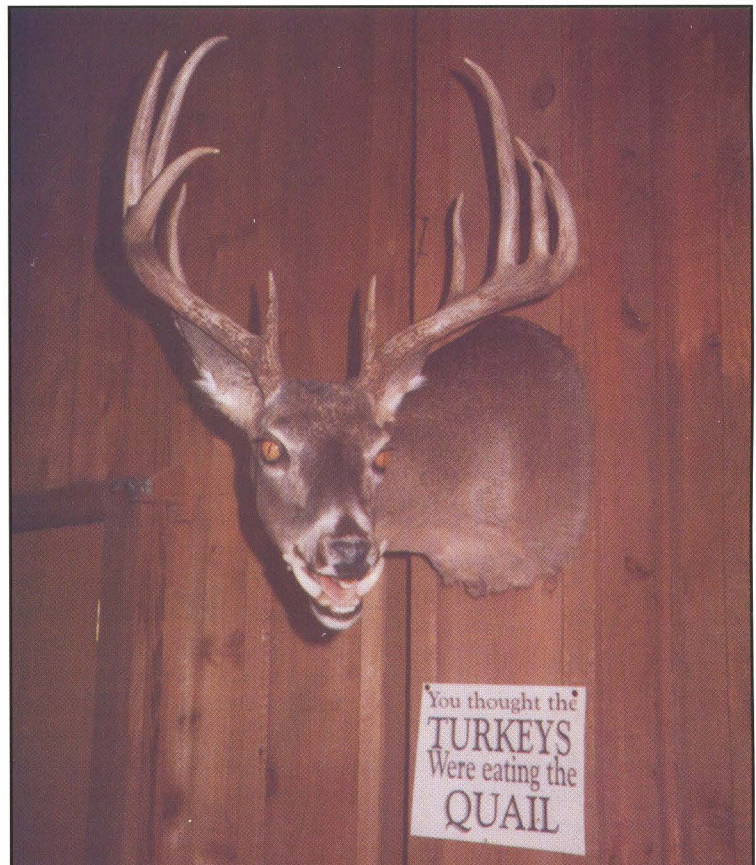
*Dennis Thurman, Sr.
Caldwell*

Dear Mr. Thurman:

Thanks for the picture. I'll keep my eye out for one of these critters next fall. Sure wouldn't want to walk in on him in the dark.

Thanks, too for your thoughts on the "Law" section. When we have the information at press time, we include fines. Names are included only if the cases have already been resolved by the courts at press time.

-Shoup



CITATION SHOCK

Last deer season, I received a call from a sportsman who asked if there was any legal way that a group of five or six Texans could be hunting deer in unit 18. I informed him that, yes, there was a way for it to happen. I asked “why” because it was not deer rifle season yet. He told me that he was out scouting and had been asked not to hunt a certain area by another local because he had a group of Texans that he was going to be taking out opening day.

I checked my records and found that there were fewer than five Texans that had permits for this area.

On opening day, I went to the area and waited for daylight. It was shortly before sunrise when I saw a pickup stop at all four corners of the pasture. It was still dark.

The pickup then went into the pasture and parked by a creek. It was light enough now that I could see one person get out, put on hunter orange, grab his rifle, and take to the woods. I watched the area for about two hours, looking for others in the hunting party, but I never once saw any other hunter orange. I kept my eye on the one person who I knew was hunting. He had walked about one-half mile south and set up. After he set up, I circled the pasture and saw no other hunters.

I drove down an oil field road to get a better look at the area the hunter was in. He was walking out on the edge of the trees when I pulled up. He raised his rifle and looked at me through the scope. When he saw that I was a conservation officer, he ran back into the woods. After having the rifle pointed at me, I was determined to stick this out.

I sat on the area for four more hours waiting for the subject to leave. Every hour or so, he would come back out of the woods to see if I was still there. After four hours of playing peek-a-boo, I radioed conservation officer Dennis Sharp to come down from Garden City and assist me. He arrived about an hour and half later.

I asked Sharp to stay in his location and watch while I went around the east

side of the pasture. Less than five minutes after I left, Sharp radioed me and told me that the subject was running to his pickup. The gate was locked to the pasture, so I couldn't get in, but the subject had not seen officer Sharp and drove right to him.

Officer Sharp made the stop and held the man at his location until I could get back. The man had a hunt-own-land deer permit. I asked him where the guys from Texas were, and he told me that he had made up that story to keep other hunters away from this area. I looked at the hunt-own-land deer permit, and the legal descriptions on the permit did not match where he was hunting. I asked if he owned the ground he was hunting on and he told me “no.”

The ground north of where he was hunting belonged to his mom but was tied up in a trust. He admitted to hunting on ground that was not listed on the permit but thought that because his family used to own it that it was alright to hunt it.

I told him that he was in violation of

hunting without a valid permit and that I would have to take care of this problem now. I also told him that I would have to check with the office to get a clarification on the ground that he did have listed on his permit to see if he could legally hunt it.

I called the Pratt office and was talking to Steve Stackhouse, the Law Enforcement Division director, about this issue when Sharp approached me and said, “Hey B.J., our guy doesn't look so good.”

I turned around to look at the subject, and he did an ice tea plunge. I told Steve that I would have to call him back because the subject had just passed out. After reviving the subject and calming him down, I informed him that he was going to be cited for hunting deer without a valid permit. He said that he was sorry for any inconvenience that he had brought on us. He was put on diversion by the court and ordered to pay \$150 diversion fee.

— B.J. Thurman,
conservation officer, Elkhart

TURKEY HUNTER SHOT

On April 19, Tony Hawkins was shot while stalking some turkeys along a stream in Coffey County. As he crouched at the edge of the stream and began calling, he noticed a movement to his left. He turned his head, heard gun shots, and then felt something strike him in the left forearm and left thigh.

At this point, he stood up and yelled, “You shot me! Help me!” The shooter, who was on the opposite side of the stream, turned and ran.

Hawkins removed his shirt and wrapped it around his wrist, then walked about a half mile back to where his truck was parked. While driving up the road, he found help from a woman who took him to the Coffey County Community Hospital. He thought he had been shot with a .22 caliber rifle.

An investigation secured statements from two men who said that one of them was trying to sneak up on some turkeys. The shooter said that he had heard a turkey, saw a dark form, and started shooting. He then heard someone yelling, and because he didn't have permission to hunt in that area, he thought he had ruined someone's hunt, and that was why they were yelling.

Eleven .22 shell casings were later found at the scene, some 75 yards from where Hawkins had been shot. The two men were charged with hunting without a license, hunting without a turkey permit, criminal hunting, and use of illegal equipment. Civil charges may be pursued.

Hawkins is expected to make full recovery. While these poachers were breaking a number of laws in their pursuit of turkeys, they broke one of the most important commandments of hunter education – know your target and what lies beyond it.

—Brad Hageman,
conservation officer, Burlington

OUTRAGEOUS AWARD

The list of 1999 winners of the Intercollegiate Studies Institute's (ISI) Campus Outrage Awards have been announced. The Wilmington, Del., think tank began handing out its "Polly Awards" last year to publicize extreme acts of political correctness and "outrageous attempts at thought control," said Thor L. Halvorssen, the ISI's director of university affairs.

Princeton University won a Polly this year for hiring animal rights activist Peter Singer as the DeCamp professor of bioethics at its Center for Human Values. Mr. Singer, who begins his new job July 1, has earned the nickname "Professor Death" because of his "extremist beliefs on infanticide and euthanasia," according to the Polly citation.

Mr. Singer, says the institute, "believes people with certain disabilities are inferior to dogs, pigs, and monkeys and might be better off killed shortly after birth."

"The main point is clear," says Singer in a book that will be assigned reading at Princeton, "killing a disabled infant is not morally equivalent to killing a person. Very often it is not wrong at all."

T. Kenneth Cribb, Jr., President of ISI, said, "We created the Campus Outrage Awards to widely disseminate instances

of outrageous attempts at thought control, politicization of the curriculum, and bigotry on college campuses. Many university deans and presidents deny that political correctness exists and claim that critics of PC use exaggerated or outdated anecdotes. Here's proof to the contrary."

Cribb added that ISI will publicize the Pollys nationally with specific focus on prospective students, parents, and alumni. ISI, a non-profit, non-partisan educational think tank, was founded in 1953 to further in American college youth a better understanding of the norms and institutions that sustain a free society. The Polly Awards may be seen on the internet at <http://www.isi.org/whatsnew/outrage99.asp>

-Intercollegiate Studies Institute

ZEBRA MUSSELS IN MISSOURI RIVER

Zebra mussels are thumbnail-sized freshwater mollusks that arrived in the United States through ship ballast water in 1986. Since their discovery in Lake St. Clair in June, 1988, zebra mussels have spread throughout the Great Lakes; the Arkansas, Hudson, Illinois, Mississippi, Mohawk, Ohio, St. Lawrence, and Tennessee rivers; and other waters of southern Canada and the eastern U.S.

Now these destructive mollusks are

knocking on the Sunflower State's door. A zebra mussel finding has been confirmed 15 miles south of Sioux City, Iowa, the first ever in the Missouri River.

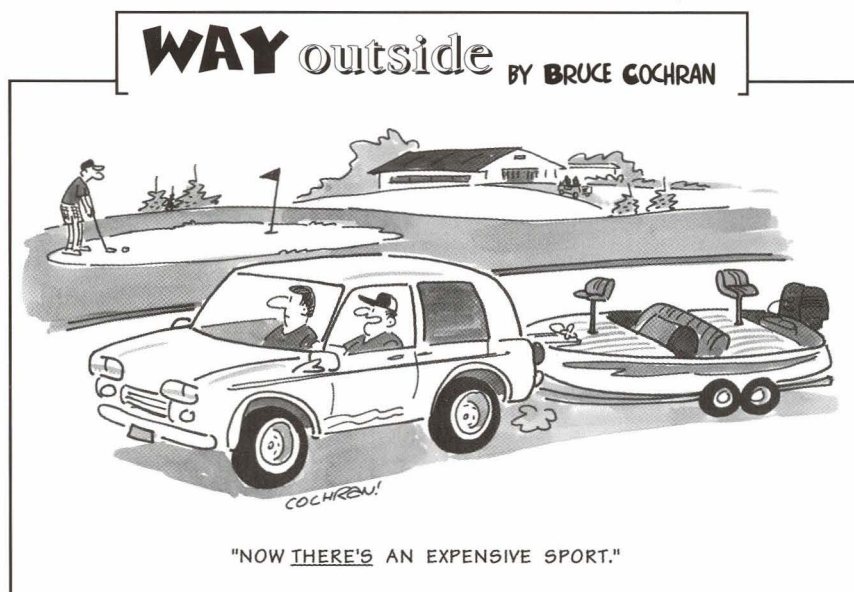
On April 12, power plant employees removed what they believed to be a zebra mussel from an intake structure traveling screen. The animal was sent to the U.S. Geological Survey, Florida Caribbean Science Center, for study. The specimen was confirmed as a zebra mussel on April 20, 1999.

Cornell University researchers have analyzed data showing zebra mussels cost the United States economy \$3 billion annually. Zebra mussels secrete tiny threads to attach themselves to rocks, aquatic weeds, and industrial and residential water intake pipes. The mussels rapidly form large mats, reducing or stopping water flow through the pipes and fouling drinking water, electric power generation, and industrial plants.

Zebra mussels can also affect local aquatic ecosystems by using the food supply and habitat of native organisms. They have affected navigation, fishing, and beach use.

The major pathway for zebra mussels to invade the west is not from the ballast water of ships but from boats, personal watercraft, and related equipment transported from infested to uninfested waters. Zebra mussels attach to hulls, trailers, and other exposed locations on boats, boating equipment, and personal watercraft. Their free-living larva can enter motors, live wells, or other moist areas and may remain viable for more than 10 days when attached to boat hulls. Their adaptability, their lack of natural predators, and the propensity of boaters to move their boats from one body of water to another have helped the rapid spread of zebra mussels throughout their current range.

"Although this one zebra mussel in the Missouri may not be cause for panic, it does reinforce the need to be vigilant," warns Tom Mosher, aquatic researcher for the Kansas Department of Wildlife and Parks. "Because of their planktonic larval stage, this species spreads passively by downstream currents, unless transported by man."



The boating and fishing seasons, as well as the mating season for zebra mussels, are upon us, so boaters and anglers should take extra care to ensure zebra mussels are not spread to interior lakes in Kansas and elsewhere. There are precautions that can help prevent a zebra mussel infestation in Kansas, according to Mosher.

“Be aware of the waters where you boat and fish,” he explains. “Most states east and south of Kansas have zebra mussels in some of their waters. Do not transport water from one lake to another, even if you don’t think zebra mussels are present. Empty bait buckets on the ground, and drain live wells when you leave an area. Check your boat hull and trailer to be sure no zebra mussels or vegetation are attached. Vegetation is an excellent carrier of zebra mussels and other unwanted exotic species. Washing equipment with hot water and allowing it to dry for several days will kill both adult and young zebra mussels.”

The U.S. Fish and Wildlife Service and other federal and state agencies and private sector cooperators are actively engaged in monitoring and management efforts to ensure that zebra mussels and other invasive species are not spread into or throughout the western United States.

Voluntary Boater Education Stations will be found in each 100th Meridian State from North Dakota south to Texas this summer. Trained personnel are available at these locations to teach boaters how to inspect their boats and remove harmful exotic species such as zebra mussels. Members of the Western Regional Panel can be found in each western state and province to answer questions about control and management of invasive species.

For information on these stations and zebra mussels in general, contact Linda Drees, Invasive Species Coordinator, (785) 539-3474, ext. 20, or e-mail Linda_Drees@fws.gov. If you suspect that you have found zebra mussels, contact your local Wildlife and Parks or the U.S. Army Corps of Engineers office.

—Shoup

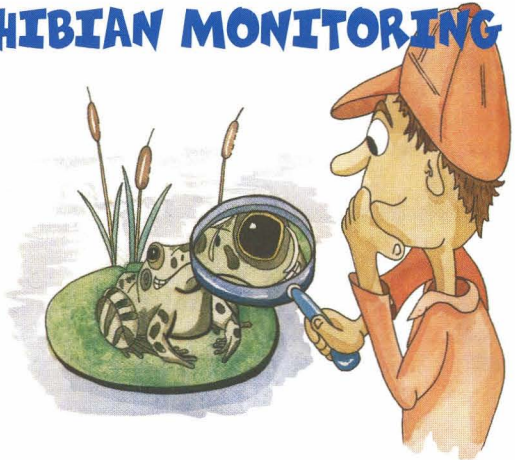
KANSAS AMPHIBIAN MONITORING

Have you heard the news of declining amphibians? News from around the world indicates frogs and toads are becoming more scarce. A number of potential causes have been identified, including pesticides, global warming, ultraviolet light, and more recently, a parasitic nematode that infects tadpoles and causes abnormalities.

In Kansas, we’ve had a few reports of malformed toads and frogs but so far nothing to note on a broad scale. As far as our populations are concerned, there’s a lot we do not know. For instance, are leopard frogs, which are said to be in decline in other areas, facing problems in Kansas? We have excellent information on where most species occur but poor information on numbers.

That is why the Chickadee Checkoff initiated the Kansas Amphibian Monitoring Program (KAMP) a year ago. The objective of KAMP is to institute a frog and toad monitoring program so that population information can be gathered. KAMP is patterned after the National Amphibian Monitoring Program (NAMP), which was initiated in 1995 and enjoys the participation of many states that now have initiated their respective surveys.

Joe Collins, adjunct herpetologist for the Kansas Biological Survey, leads nearly 100 volunteer “herpers” who survey 87 routes across the state and assess the relative number of toads and frogs calling at night. Counts are made along 15-mile routes, and relative abundances are recorded depending on how many calls or choruses are recorded. The scale of calling goes from zero (no individuals of a species heard) to three (numerous individuals of a



species heard in constant choruses). The routes are run by vehicle once each month from March through June at the convenience of the surveyor and at optimum times for amphibian activities.

According to Collins, most all the routes have been taken, but there are a few in far western Kansas that are in need of surveyors. Participants, referred to as “croakers,” are supplied a tape of calls identifying nearly two dozen frogs and toads of Kansas. This tape, “The Calls of Kansas Frogs and Toads,” by Keith Coleman and narrated by Joseph T. Collins, is available from the Kansas Outdoor Store for \$10. Phone (316) 672-5911 to order.

Not to be confused with Frogwatch, a national effort involving volunteer surveys at specific sites, KAMP is developing some basic population density information. Everyone benefits from having more reliable data on toads and frogs. Working with more accurate trend information helps guide decisions in many ways – from assessing cause and effect relationships to further cataloging species.

In the words of Collins, “The goal of our volunteer croakers and KAMP/NAMP is to prevent frogs and toads from croaking”.

—Ken Brunson, wildlife diversity coordinator, Pratt

Why Crappie Limits?

In 1991, a 10-inch minimum length limit was set at Melvern, Perry, and Pomona reservoirs to evaluate its effect on crappie populations. This limit is still in force today, so anyone harvesting fish shorter than 10 inches at Perry Reservoir is violating Kansas fishing regulations. No length limit was set at Clinton Reservoir because of slow growth rates and high population numbers.

We have to be especially careful when we set length limits for fish like crappie. First, we have to be sure that crappie are growing adequately to support a length limit. Crappie are a relatively short-lived fish, and many die of natural causes after their third and fourth years. If growth is slow and fish cannot reach the length limit during their third year, the limit would create a population of stunted crappie leaving many fish to die of natural causes, and many frustrated anglers.

The Department of Wildlife and Parks chose a 10-inch length limit at Perry Reservoir because our studies showed that crappie there could first reach this size during their third year. Furthermore, past angler surveys showed that more crappie less than 8 inches are released than kept and that a 10-inch limit could be expected to reduce the annual harvest by approximately 40 percent. By contrast, an 8-inch length limit could be expected to reduce harvest by approximately 8 percent.

We evaluated daily creel limits at the same time we evaluated length limits. Results showed that most of our anglers harvest fewer than 10 fish per day. A daily limit of 30 fish could be expected to reduce the harvest by only 1 percent, while a 20-fish daily creel limit would reduce harvest by 4 percent, and a 10-fish limit by 19 percent. Because the 10-inch limit alone was more effective in reducing harvest, we chose not to impose the more restrictive daily limits.

Incidentally, a daily limit of 20 fish added to the 10-inch length limit would reduce harvest an estimated 43 percent – only 3 percent more than the length limit alone.

Data from angler surveys and annual test netting indicate that the crappie populations at these reservoirs are healthy.

–Tom Mosher, fisheries research supervisor, Emporia

Young Fish Artist

Last December, the conservation group Wildlife Forever launched its first-ever State Fish Art Contest. The theme of the contest was Conservation Education, and Zacharie Steves, a fifth grader from Chanute, won the Kansas contest with his colored-pencil drawing of a channel catfish in its native habitat.

Young Americans grades 4-12 were encouraged to learn about aquatics and their state fish through this education-oriented conservation project. Students and teachers were asked to visit the Wildlife Forever website at www.statefish.com to learn about their own state fish, compose an illustration of it, and submit the picture and a short essay on the fish to the contest.

Although Kansas does not have a state fish, young Steves' submission of a channel catfish won, anyway.

Judges for the contest included national celebrities such as three-time Federal Duck Stamp Contest winner Jim Hautman and National Football League Hall of Fame coach Bud Grant. The judging took place at Wildlife Forever's headquarters in Eden Prairie, Minn.

The contest was sponsored by National Fishing Week, as well as numerous private corporations.

All winning artwork is now being featured on www.statefishart.com or on America OnLine at KEYWORD: Fishart. Winning images are available in digital format. For more information on these images and the contest, contact Sal Di Leo, Director, Wildlife Forever's State-Fish Art Contest, 10365 West 70th St., Eden Prairie, MN 55344, or phone (612) 833 1522.

–Shoup

Where to F.I.S.H.

The Fishing Impoundments and Stream Habitat (FISH) program has gained unexpected popularity, with landowners and anglers alike. In only its second year, the program has enrolled more than 1,000 acres of ponds and nearly 20 miles of streams on private land for public fishing access.

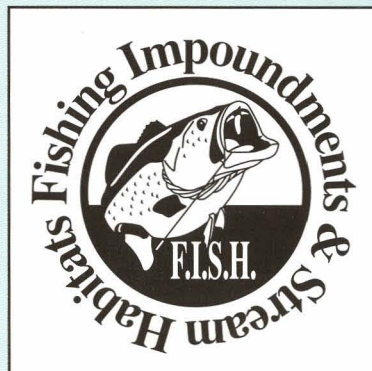
The program currently features more than 60 sites, including ponds and lakes ranging in size from five acres to more than 100 acres, as well as access to several stream reaches formerly unavailable to the public.

FISH waters may be found in Brown, Chautauqua, Coffey, Crawford, Dickinson, Doniphan, Elk, Graham, Greenwood, Harper, Jackson, Jefferson, Labette, Lane, Lincoln, Lyon, Marshall, Mitchell, Montgomery, Morris, Nemaha, Neosho, Ness, Osage, Pawnee, Pottawatomie, Rice, Riley, Rooks, Rush, Russell, Sedgwick, Shawnee, Smith, Sumner, and Woodson counties.

The FISH sites are open to public access from March 1 through October 31, and all Kansas fishing regulations and statewide creel limits apply. It's especially important for anglers using the sites to respect and follow the rules that apply on FISH properties.

Anglers who want more information should contact the nearest regional KDWP office or the department's Pratt Operations Office at (316) 672-5911 for a printed guide to FISH properties. That information is also available on the KDWP web site, www.kdwp.state.ks.us.

–Shoup



William the CONQUEROR

by Mark Shoup



If there are unknown worlds to conquer in 15 years, I'm convinced my son William will find them.

One fine May evening, I take the seven-year-old boy for a ride on the big mower. Actually, it is a driving lesson, and he takes to the hydrostatic drive monster like Jeff Gordon ripping up the track.

In addition to three acres of lawn, I've mowed paths through and around three shelterbelts for nature trails and access to the "jungle." These jungle paths are lined by lacy hemlock 8 feet tall interspersed with giant cottonwoods, some of which are 6 feet in diameter. This particular evening, Will must think he's in the lead at Talladega as he sits in front of me in the seat. I'm ducking limbs and grabbing steering levers at every turn.

"Slow down, Bud," I yell above the engine's din. He nods as if he's heard me clearly through his ear muffs, slows to a snail's pace for about 30 yards, then presses forward on the levers, intent on regaining the lead. His imagination is creative, and this evening must be a particularly active one on the stage of William Shoup's mind. But one stunning moment suddenly grabs his attention, and he downshifts into the pits.

The "pits," in this case, happens to be the west end of our property where the trees open to a wheat field and the expansive Kansas horizon. The sun is setting, and a latticework of red, pink, and purple clouds sprays eastward over our heads. Only the outline of a lone cottonwood in the distance punctuates the scene as Will throttles down the engine and takes it all in.

"I love this house," he exclaims with genuine affection. (At his age, house and home are still synonymous.) After about a minute of quiet reflection, he revs the engine up, and we're bouncing back down the rugged speedway.

Will is a hardcore lover of the outdoors, the original bare-foot boy to whom shoes are little more than a nuisance. This is a spark that burns within, and the fire is fueled by living in the country. It's also fueled by the fact that his older brother, Logan, seems to have a natural talent for fishing.

About a week after the Talladega Speedway incident, I am helping Logan ready for church camp. Among the items required for the trip are fishing pole and tackle box. I'm sorting through my tackle box, making sure Logan has plenty of lures, line, split shot, bobbers, and a stringer. The top 4 inches of his pole appears to have been bitten off by some marauding 'possum the boys may have cornered in the barn. I have to heat the eyelet and slip it off the severed appendage, then hot-glue it

back on the remaining rod.

William rummages through his tackle box, too, all the while talking: "Dad, can I have one of those pointy bobbers? This lure is cool. Can I have one of those purple worms? I wish I had a reel like that. Will you take me fishing, Dad?"

"Just let me get your brother ready, Will," I explain. "Then I'll work on your tackle box."

"Will you take me fishing this week?" he asks.

I sigh. It's hard being the little brother sometimes. "Yes, son. I'll take you."

So with brother gone, William and I drive to "Uncle Hod's" farm pond one fine evening in early June. He's caught a few fish, but this particular pond is noted for harboring large herds of 2-pound channel cats that fight like marlin. My hope is that some hard-fighting fish will hammer his line and provide fish-tale bragging rights when brother gets home.

Although Will seems happy just to be here with Dad enjoying the scenery, he eagerly takes the rod I have baited for him and casts into the water. Few kids are patient with fishing, but he does fairly well at first, only reeling in and recasting every minute or so. Then Uncle Hod drives up. Without saying a word, he steps out, retrieves a large can from the back of his pickup, and tosses a load of catfish food in the pond in front of William.

Immediately, the water starts to boil with rolling fins and barbs. Within seconds, Will's pole is bent over, and he's holding on for dear life, grinning ear to ear. "Daddy, I got one!" he yells.

"I can see that, Bud. Reel him in." This is more fun than catching them myself.

"Oh. Oh. He's a big one, Dad. I can't get him in!"

"Sure you can, Bud." I step behind Will and hold the pole a little, coaching him to keep his rod tip up, pull, and reel until he drags the fish onto the bank.

"That's a nice fish," observes Uncle Hod. "I just love to see the young ones catching them."

Finally, Will drags the fish to ground. It's a nice 2-pound channel, and he's beaming. As soon as I have the hook out of the fish's mouth, he's throwing the line back in. Within 15 minutes, he's caught five beauties and insists on baiting his own hook. He is, in fact, hooked.

Once the fish food is gone, the action slows, but we stay for a couple hours. Will has to eat some mulberries before we leave, and he wants to load the stringer into the 5-gallon bucket I have brought. He is so proud, I'm surprised he doesn't ask to drive.

On the way home, he straps in the front seat by me, and we chatter about the fish, the kindness of Uncle Hod, the landowner, and the sky.

"I bet we can beat the sun home, Dad," he declares.

"No need to race, Will," I reply. "The sun isn't going to our house anyway."

"Daaaad! You know what I mean." It's a typical reply to my lame jokes.

"Yes, I know what you mean." We take all the back roads going home, and at one point I suggest that we might be lost.

"Nothing like a little adventure," he declares, smiling up at me.

**SEPARATE
WATERFOWL REGS**

The 1999-2000 Kansas Hunting and Furharvesting Regulations Summary will have a new look. Information has been rearranged so that like categories are now together in a more user-friendly format. For instance, all information on military licensing, hunters with disabilities, or deer can be found in a single spot in the brochure.

Hopefully, these kinds of changes will make the book-

let handier and more informative.

One major change in this year's regulation booklet is that the waterfowl regulations (except for those concerning early migrants) will be found in a separate publication. Because the U.S. Fish and Wildlife Service does not provide frameworks for waterfowl seasons until August, publishing the booklets separately will allow the department to print and distribute most regulations in early August.

The 1999 Kansas Waterfowl Regulations Summary will be available in early September.

-Shoup

**BUY DEER
GAME TAGS**

Help maintain a healthy Kansas deer herd this season by purchasing deer game tags. These tags for antlerless whitetail deer will be valid in all management units except 8A, 10A, 17, 18, and on land

managed by the department of Wildlife and Parks. They are valid in any season with legal equipment. Anyone who already has a general firearms, statewide archery, unit archery, hunt-own-land, leftover, or nonresident deer permit may purchase as many as two of these tags for only \$10.50 each.

Not only are deer game tags a bargain, they give hunters the opportunity to fill the freezer and extend their hunting season.

-Shoup

DEER HUNTING ISSUES

A number of changes will affect Kansas deer hunters in the 1999-2000 season. Most of these provide opportunities to obtain more permits. Others make the permitting process easier. The following is an overview:

- An extended white-tailed antlerless-only deer hunt will be conducted Dec. 31-Jan. 9, 2000. All unfilled regular season permits - of any type - will revert to white-tailed antlerless-only permits for this season. Permits retain their unit restrictions. (A 2000 hunting license will also be required in January, unless exempt by law.)

- Any equipment legal during the regular firearms season may be used in the extended season, regardless of equipment restrictions on the original permit. Game tags and statewide archery, unit archery, hunt-own-land, and leftover permits will be sold until Jan. 8.

- Deer permit holders may purchase whitetail antlerless-only deer game tags for all units except 10A, 8A, 17, and 18. These permits will be available to residents and nonresidents.

- The \$10 fee to transfer a Hunt-Own-Land permit is no longer required. Transfer recipients, whether resident or nonresident, are still required to pay the \$30.50 resident permit fee.

Other common deer hunting issues include the following:

- Hunter orange will be required of all hunters, including archery, during the Dec. 31-Jan. 9 season.

- Nonresidents may obtain limited statewide archery and unit archery permits through the nonresident drawing.

- Hunt-own-land permits may be transferred to blood relatives, and their spouses. Transfer recipients, whether resident or nonresident, must pay the \$30.50 resident permit fee. Hunt-own-land permits are for any deer except

in units 17 and 18, where no antlerless mule deer may be taken.

- All big game tags must remain with meat until consumed or given to another person. Meat given away must be accompanied by a written notice listing the donor's name and address, date of donation, and permit number.

- Leftover resident permits are valid with appropriate equipment during the archery, muzzleloader, or firearms season.

- Hunters may apply for as many as two leftover firearms permits.

- Regular firearms applicants who were unsuccessful in last year's drawing will be given priority in the initial drawing. Those applicants who had an archery, hunt-own-land, or antlerless permit last year will be given equal priority and may state on the application that they did not receive a permit last year.

- As many as four deer permit applicants may apply as buddies.

- Unit archery permits are valid in all units, for white-tailed antlerless deer only.

- Persons 12 and 13 years old may bowhunt for deer if they have completed a hunter education course and an International Bowhunter Education Program course or equivalent. These hunters must also hunt under direct adult supervision. This means that the supervising person must be 21 years old and be within clear sight and hearing of the young hunter.

- It is legal to use lighted pin sights, dot sights, holographic sights, optical scopes, and range finders if the systems do not project visible light toward the target and do not electrically amplify light. Laser scopes and night scopes are prohibited.

For more information, contact the Kansas Department of Wildlife and Parks, (316) 672-5911.

-Shoup

CANNED MUSSEL?

Sometimes truth is stranger than fiction. That was certainly the case for one Kansas angler last spring.

Fred Behrens, of Great Bend, was fishing in the C section of Council Grove City Lake when he noticed a beer or soda can that had washed up on shore. While litter may not be out of the ordinary, this can was no everyday piece of junk. It was a pre-pop-top can that had been opened with a can opener. Half of the can had rusted away over the years, revealing two dead mussels trapped inside.



The intrepid mollusks were large enough to fill the can, so how did they get in? Apparently, the critter's larva had floated in the discarded can and developed into mature mussel. In the relative safety of the can, they grew until they were too big to escape the comfortable little prison.

The can and mussels are now on display in the Pratt Conservation Education Center, across the street from Wildlife and Parks' Operations Office east of Pratt. Thanks for the soda, Fred.

—Shoup

WATER FOR BIRDS

Providing a source of water for drinking and bathing may attract a greater variety of species than any food offering.

It is obvious that birds need water this time of year, when it's hot, but bird lovers should prepare for winter watering, as well. Water helps keep birds warm. Bird feathers contain interlocking webs known as barbules. When in place, these locking feathers shut out the cold. It is essential for the feathers to be clean for this interlocking system to work properly, so birds actually bathe more in winter.

Providing water can be as simple and inexpensive as water in an inverted trash can lid or as elaborate as a small pond. Probably the most common, however, is the commercial birdbath. Some features to look for in a birdbath are gently sloping sides with an average basin depth of no more than 1.5 inches. A rough finish suits birds' needs best.

To keep water from freezing, use an immersion water heater designed specifically for outdoor use.

Water should always be kept fresh, especially in the summer when it should be changed daily.

—Farmers and Wildlife

SWIFT FOX SURVEY

The annual swift fox road track survey will be conducted again this August by the Department of Wildlife and Parks. Trackers, many of whom are Wildlife and Parks employees, look for swift fox

tracks along roads during early August, before biologists begin posting signs for the Walk-In Hunter Area program.

It takes approximately one hour to cover a township. In the process, participants receive a good education in identifying furbearer tracks.

—Christiane Roy, furbearer biologist, Emporia

SKUNK SPRAY REMEDY

Everyone has smelled the odor of skunk spray. Fortunately, most folks have only had this experience from a distance. Up close, it can be nauseating, and if you or your pet has ever been sprayed, it is an experience you will never forget.

Skunk spray odor doesn't go away easily, either. It doesn't wash off with soap and water, and if not dealt with properly, it can last months.

Here's a recipe from Farmers and Wildlife that does a good job of removing skunk odor:

- one quart of 3 percent hydrogen peroxide;
- one cup of baking soda; and
- one teaspoon of liquid soap.

Mix the ingredients in an unsealed container and spray onto the affected areas. If the problem is especially bad, you can mix a bigger batch and work it into the area like shampoo. The solution has a short shelf life, so use what you need and discard the rest.

—Shoup

YOUTH HABITAT CONTEST

Helping wildlife is the bottom line each year for young contestants at the Kansas Wildlife Habitat Evaluation Contest. Labette County Future Farmers of America No. 1 (senior division) and Bartlett Elementary School (junior division) were winners at this year's meeting at Quivira National Wildlife Refuge.

Labette team members Chris Burnham, Trent Glick, James McCalbie, and Drew Ricketts are now eligible to represent Kansas at the 1999 national 4-H Wildlife Habitat Evaluation Contest. Glick also won the top individual honor in the state contest.

Kansas will host this year's national event in Manhattan July 28 through Aug. 1. The contest's five sections cover wildlife foods, interpreting aerial photographs, management practices, and planning both rural and urban habitats.

Quail Unlimited chapters in Emporia, Great Bend, Medicine Lodge, Pittsburg, and Topeka underwrote the young Kansans' awards, participant T-shirts, meals, and a tour of the wildlife refuge.

—Charlie Lee, extension wildlife specialist, Kansas State University

**WILDSCAPE NAMES
NEW DIRECTOR**

Kansas Wildscape has announced the appointment of Harland Priddle as executive director. A retired Air Force colonel, Priddle has been Kansas Secretary of Agriculture and Secretary of Commerce.

Currently, the largest Wildscape project is the restoration of 2,300 acres of wetlands at Milford Reservoir, north of Junction City. The \$5 million project will be funded by individual donations, appropriation from the Kansas Legislature, gifts from corporations and foundations, and federal funds available through the Corps of Engineers' Wetlands Restoration Program.

- Shoup

**PLEASANTON
CITY LAKE OPEN**

Pleasanton West City Lake opened for public fishing on June 5. The lake is ranked among the state's best for large-mouth bass and channel catfish. The lake has excellent shoreline access with five earthen piers. A new boat ramp provides access for boaters. All boats are for fishing only. For more information, call Pleasanton City Hall at (913) 352-8257 or Don George at (913) 795-2218.

-Tom Swan, fisheries
biologist, Mound City

**WEBSTER GETS
KIDS GRANT**

Webster State Park has received a grant from the Rooks County Communities That Care Committee to incorporate drug-free, alcohol-free, and tobacco-free education into its Junior Naturalist Day Camp program. The grant will allow the park to present conservation programs, healthy lifestyle education, sponsor a dance, and other activities.

Staff is also working with the local 4-H shooting sports program to incorporate activities that may meet a goal of the Hunter Recruitment and Retention plan.

-Tom Hein, Webster
State Park manager

EISENHOWER CABIN

Eisenhower State Park has a picnic shelter that has been converted to a primitive cabin on the east side of the park. The cabin is a weather-tight enclosure with windows on all four sides and a great view of Melvern Lake. Cots are provided, but visitors must bring their own bedding. Currently, no electricity or water is available, but shower and toilet facilities are nearby. Coleman lanterns are provided when visitors check in. An outdoor grill and picnic tables are also provided. Cost for the cabin is \$25.50 per day plus a \$5 reservation fee. A refundable damage deposit of \$25 is required.

-Sally Wilk, Eisenhower
State Park manager

**SPINAL CORD
BASS TOURNEY**

The Spinal Cord Society of Kansas City (SCS) is having its Fourth Annual Bass Tournament August 15, 1999, at Truman Lake in Warsaw, Missouri.

The tournament will help sponsor research that will benefit people with

spinal cord injuries.

The tournament offers the chance to win a Champion Sportsman model 171 with trailer (valued at \$10,000), and cash prizes ranging from \$2,000 to \$150. The big bass of the day will net \$2,000 cash. Second place will receive \$1,250 and third will net \$750.

Registration costs \$150 per boat (extra \$10 donation to Spinal Cord society, optional) and must be postmarked by August 7. For more information, call Mickey Powell at 816/540 2691 or fax her at 816/540-3921.

-Debby Hays, SCS

NWTF GRANTS

Wildlife habitat grants totalling \$26,018 have been given by the National Wild Turkey Federation to plant trees and improve woodland areas on Lovewell, Norton, and Wilson wildlife areas. The Kansas Department of Corrections' Norton and Ellsworth facilities have helped plant and maintain the trees, according to Bruce Taggart, public lands regional supervisor for KDWP.

-Miami County Republic

WORKSHOP FOR MEN

A hunting skills workshop for men has been scheduled for Aug. 21-22 at Rock Springs Ranch. Patterned after the Becoming an Outdoors Woman workshop conducted at Rock Springs each October, the "Go Hunting!" workshop will offer training sessions on the following topics:

- Introduction to Shotgunning
- Introduction to Firearms
- Rifle Marksmanship
- Archery
- Everything About Blackpowder
- Squirrel Hunting
- Upland Game Birds
- Deer Hunting
- Turkey Hunting
- Waterfowling
- Tracking and Trapping
- Duck Wings Maze
- Outdoor Photography
- From Field to Table
- Beginning Birding
- Hunting With Dogs
- Orienteering
- Nature Walk
- DART System
- Introduction to Fly Fishing
- Tents and Camping Gear
- Canoeing Basics
- Fly Tying

Registration fee for the workshop is \$95, which includes four meals, one night of lodging, and all program supplies. Registrations will be accepted until the workshop is full or until Aug. 16. Questions should be directed to Connie Elpers at (316) 683-5499 or Bev Aldrich at (316) 672 0756.

-Mathews

by Mark Shoup

Birds of a Feather



MALLARD WING
(SPECULUM) FEATHER

Everyone loves to watch birds fly. Everyone knows that feathers make flight possible, but did you know that birds lose some or all of their feathers each year? This is called “molt,” and some birds may molt two or three times a year.

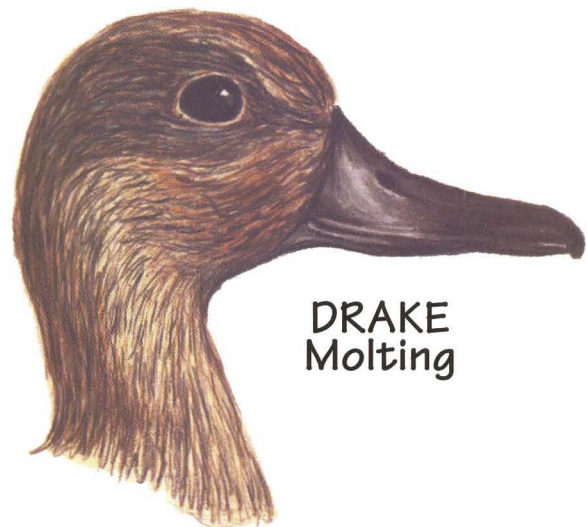
All adult birds molt at least once a year, and new feathers are grown. This is called a “pre-basic” molt and usually occurs after the breeding season. In most birds, molting feathers are lost a few at a time, allowing the bird to continue flying. Ducks and other waterfowl, however, lose all their basic feathers at once, leaving them flightless for three to five weeks each summer.

Their more colorful body feathers are also lost, leaving males and females looking much the same. Some biologists believe the dull feather color of this period makes it easier for both male and female ducks to hide from predators.

There may be a good reason that ducks molt after breeding. Feathers weigh as much as 12 percent of a bird’s body weight, so it takes a lot of energy to replace them. Ducks usually breed in late spring, and during the summer molt, there is always plenty of food around. Also, they have already spent the energy necessary for breeding and raising a brood.



DRAKE
Breeding Colors



DRAKE
Molting

GREEN-WING
TEAL

TURKEY Wing Feathers



But why do birds molt in the first place? The answer may be simpler than you think. Throughout the year, the tips of feathers wear away or break off as they rub against trees, grass, the ground, and other things in the environment. Entering and leaving a nest also causes wear and tear on feathers. Thus, replacement feathers become as necessary as changing worn out tires on a car.

Now we know that ducks and other birds lose their feathers, and why. But what triggers the molting process? Biologists believe there may be several things that cause a duck's body to begin molting feathers. Changes in the length of the day may be one factor. Longer days, when birds are exposed to more light, may cause glands inside the body to produce hormones that trigger molt. Sex hormones may also play a part because waterfowl molt after breeding. In fact, birds that fail to breed successfully often molt early.

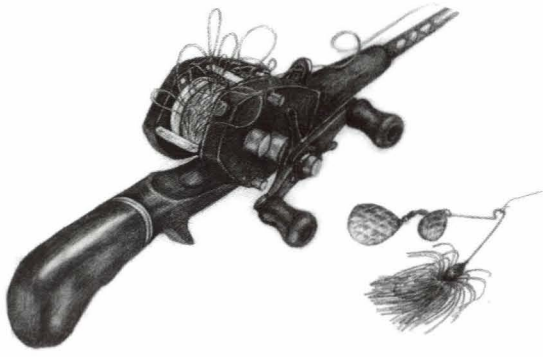
Because feathers are so important for insulation and flight, birds spend a lot of time caring for them with their bills. This process, called "preening," cleans and straightens the feathers as they get dirty or bent. Ducks and other waterfowl have especially active oil glands just above the tail that they use to waterproof their feathers, an important feature

for a bird that spends most of its time in the water.

Despite all the preening and waterproofing a duck can do, its feathers still get ruffled. Worn out feathers are replaced each summer, and healthy new ones are grown for the long migration to wintering grounds in the south. Once spring rolls around, the birds are in full color as they migrate back north to breed.

BLUE-WING TEAL





Backlash

by Mike Miller

The Great Bait Debate

Old catfish anglers could argue over the best channel catfish bait all night long. In fact, I wouldn't be surprised if that was how nightfishing for channel cats first started. Picture a riverbank — four rods are poised on forked sticks, lines taut against the roiling current. Two overall-clad, tobacco-spitting codgers are busy bragging on the potency of their "secret" catfish bait. It starts in early evening, but before either has gained an edge in the argument, it's midnight. Suddenly, the lines start jumping, and the two quickly catch their limits of big, scrappy channel cats. Nightfishing for channel cats was born. And since both caught fish, the argument is never settled. It never will be.

There are as many "magic" catfish baits as there are catfish anglers. Heck, I've heard of anglers using soap, corn flakes, cheese, cow brains, even rabbit guts. Speaking of rabbit guts, I've noticed that the more disgusting the bait, the better channel cats like it. In fact, I believe that if you followed an old bird dog around for a couple of days and picked up a sample of everything he rolled in, you'd have a powerful channel cat bait.

I developed a secret channel cat bait of my own, and since I don't fish for channel cats much anymore, I suppose I could divulge it. I started experimenting with catfish baits in my youth, when fishing for channel cats at the local state fishing lake and farm pond was my purpose in life. Since then, I've found other fish species to pursue. That and the fact that the best baits I found are much more repulsive now than they were when I was 12.

I started, like most young anglers, using worms. Worms caught the occasional channel cat, but bullheads and green sunfish usually took the bait before the channel cats could find it. I graduated to chicken livers, and they worked great — when you could keep them on the hook. Then an old-timer told me shrimp was the best. I bought a package of frozen shrimp at the local grocery store and found it worked well on some days, but it was expensive for a kid mowing lawns for a living.

Then my fishing buddy's dad gave him an old jar of shad sides he said would catch channel cats as fast as we could reel them in. We decided to test the bait on an overnighter to our favorite farm pond. When we popped the lid off the old, dusty jar, we knew the bait would work — just as soon as we could peel our eyelids back down and quit gagging. It took some nerve to stick our fingers into the milky soup and fish out a strip of shad, and the smell lingered on our hands for days. We baited a rod before we went to sleep, and sure enough, we had a 5-pound channel on the line the next morning. We were elated to have found

a sure-fire bait, but we decided to leave the nasty jar at the pond — carefully hidden under an old log. On a later trip, we brought some rubber gloves so that baiting a hook wasn't such an ordeal. (You have to understand, we were just getting the nerve to talk to girls at the time, and smelling like rotten shad destroyed what little confidence we had mustered.) I'll bet that jar and a pair of crumbled rubber gloves still lay under that log at the pond today. If the contents hasn't completely liquefied, it would probably catch channels even better than it did 20 years ago.

Then I made the discovery of my short channel cat fishing career. Another old catfish angler told me that beef liver would stay on the hook better than chicken liver. He was right, and a container of beef liver scraps was relatively inexpensive. It worked, but I was looking for something better, something more aromatic. Quite by accident, I found it. Just before a trip to the farm pond on a hot summer day, I was frantically looking for the beef liver I'd bought several days earlier. It wasn't in the refrigerator, where I usually kept it (against Mom's wishes). I found it in last place I thought to look — in the garage next to my rods and tackle box, where I'd left it several days earlier. The lid was on tight, and the contents didn't look too green, so I took it along.

We started fishing that hot afternoon in the shade trees near the creek, or crick, as we liked to call it. I opened the liver and stood back, hoping the fumes weren't toxic. I turned away to rig my pole, when I heard a lapping noise. To my stomach's nausea, I saw my bird dog and frequent fishing partner, Sam, drinking the greenish-red juices that filled the liver container.

Right then, I knew I'd discovered the best catfish bait ever — what better judge of truly disgusting, smelly stuff than Sam. On many hunting trips, he had rolled in the rankest, deadest, rottenest, stinkin'est stuff you've ever smelled. Sam knew putrid. Even though I made him sit several yards away that afternoon, Sam, who loved fishing as much as bird hunting, was a happy dog as I reeled in several nice channel cats.

So here it is — the best channel cat bait I've found: Take a pound of beef liver packed in blood, and age it at an air temperature of 100 degrees for two and one-half days — longer if it's cooler. You know its ready when you can just make out the faintest green color in the liver juices. Channel cats love it, guaranteed! Just call it Rotten Sam's Catfish Candy. 