

KANSAS

Wildlife & Parks

May/June 2001

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The View From Here

by Steve Williams



Summer Fun In Kansas State Parks

It's been a long winter, but the warmth of spring has finally arrived, and the time has come to get out and enjoy the Kansas outdoors. May and June are fantastic months to take family and friends to a state park for a weekend of camping, hiking, fishing, or a relaxing picnic.

May 6 and 7 may be the best weekend of the year to sample a state park in Kansas. For these two days, state park entrance fees are waived. This is great opportunity for Kansans who have never visited one of our 24 state parks to discover the variety of outdoor recreation available. Call our Pratt office, or visit your nearest department office to receive a Kansas State Park Treasure Guide. Use the brochure to select one of those out-of-the-way state parks you've always wanted to visit and take a road trip. From the rugged prairie and Indian history of Scott State Park to the lush timber and charm of Crawford State Park, adventure waits.

Memorial Day weekend is always a busy time in our state parks, as they host everything from family reunions to fishing tournaments. The first big weekend of summer means a lot of extra work for park staff, but it also gives the department the opportunity to showcase our facilities. Thanks to a 1998 \$10 million appropriation approved by Governor Bill Graves and the Kansas Legislature, all 24 parks have been improved. Enjoy these new facilities and remember that your continued support will help us meet the funding challenges we face in our state parks.

The weekend after Memorial Day is also a special time for our parks and all public waters. June 1-10 is National Fishing and Boating Week, a program that raises awareness of the opportunities, benefits and values associated with boating and fishing. Within those dates, June 2 and 3, are Free Fishing Days here in Kansas. On this weekend, beginning anglers and those who just haven't purchased a license yet will have two days to enjoy this quality activity free-of-charge.

Fishing opportunities have never been better in Kansas.

Wherever you live or travel, there is a reservoir, state fishing lake, stream, or FISH public fishing site nearby. The biggest challenge may be deciding what type of sport-fish you want to catch. Kansas waters boast great fishing for black bass, striped and white bass, crappie, bluegill, and walleye to name a few. And then there are catfish -- Kansas lakes and streams offer excellent angling for channel cats and monster flatheads. The state record flat-head weighed 123 pounds! And every year, flatheads weighing more than 70 pounds are caught. If you've never fished in Kansas before, or you've just been too busy lately, take advantage of two free days to discover how much fun fishing can be.

In other fishing news, you may have noticed a new television advertising campaign during the NCAA basketball tournament called Water Works Wonders. In a nutshell, this program promotes boating and fishing as the premier leisure activities for true family connections. For more information on Water Works Wonders and how you can get involved, see Page 31, or visit www.waterworkswonders.org.

Finally, our state parks are the ideal place to kickoff your spring and summer outdoor fun. Boating, hiking, and fishing trips can be especially enjoyable when you spend the evening around your camp fire, under the stars. Spring turkey hunters should also take note that parks make ideal base camps, as they are usually adjacent to public hunting areas. Whatever activity you choose to enjoy in the great outdoors, be sure to consider making a state park part of your plans.

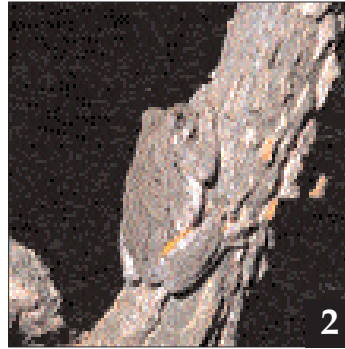
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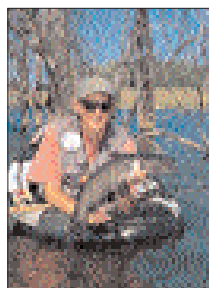
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About the covers

Front: A Rio Grande gobbler struts on a Kansas spring morning. Mike Blair photographed the scene with a 600mm lens, @ f/8, 1/500 sec.

Back: A large channel catfish is a handsome reward for a Kansas flyfisher. Mike Blair filmed the moment with a 55mm lens, @ f/16, 1/125 sec.





Natural Camouflage

text and photos by Mike Blair, associate editor/photographer
Pratt

*Many wildlife species are naturally adapted to perfectly match their surroundings.
Both predator and prey depend on blending in to survive.*

It was frustrating. Standing knee-deep in a timbered marsh at Marais des Cygne Wildlife Area, I was surrounded by chorusing gray treefrogs. The loud singers were stationed every 30 feet, vying for mates in the night air. There were hundreds of them, and any would have worked as a subject for my camera. The problem was, I couldn't find one. Again and again, I waded close, isolating the sounds to within a few feet. Then the frogs would fall silent before my bright headlamp, impossible to find in the jumble of shapes and colors. I finally gave up and went to another location where the hunting was easier.

This was one of nature's finest passive defense systems at work — natural camouflage. An amazing variety of organisms blend with their backgrounds to avoid detection. Some rely on cryptic coloration, while others mimic shapes to help them hide. Still others glue natural materials to their bodies. All are effective means of disappearing from sight and avoiding their enemies.

"Camouflage" is derived from the french word *camoufler*, which means to disguise. At its simplest, the term implies discrete coloration. Most wildlife species possess a natural color that helps them blend with their habitats. For some, this is a general feature overshadowed by more effective escape capabilities. For instance, white-tailed deer are nearly the exact color of the winter understory. At a distance, this makes them difficult to see unless they are moving. However, due to their large size, it does little to hide them at close range. To escape nearby threats, they must rely on speed and agility.

Smaller animals often exhibit more elaborate color ruses that help hide them from searching eyes. These schemes incorporate con-



Brown coloration hides a cottontail while resting, though speed is the rabbit's primary defense. Camouflage becomes more important for slower animals or those whose activities put them at risk. For instance, the nighthawk (facing page) must sit tight to avoid revealing her nest to passing predators, and mottled coloration helps hide her. Likewise, killdeer eggs are blotched and shaded to disappear in a rocky nest. Sphinx moths rest in daytime to fly at night. Bark-colored wings help them avoid detection by birds.





The eastern gray treefrog has the ability to change its color from gray to green, depending on where it chooses to rest. With this ability and a mottled pattern, its smooth skin texture makes little difference as it hides among leaves and limbs. The horned lizard, below right, has a spiny, scaly skin that further enhances its camouflage. Predators that view it close-up are fooled by its texture as well as color. Both animals are well served by efficient camouflage. Even so, it is important that they remain motionless to help them avoid detection.

trasting shades that closely match their surroundings. The timber rattlesnake has a smooth body marked like fallen leaves and pebbles. When stationary, its camouflage is highly effective. Other reptiles, like the horned lizard, combine camouflage colors with a spiny body texture

that resembles a sandy or rocky environment. This allows them to flatten and remain unseen by a passing hawk or coyote. Still other animals, such as the katydid, make use of wing veination to mimic the veins of grasses and leaves. Not only is the katydid's ground color a

perfect match for its habitat, it blends in the smallest detail.

Some animals have the remarkable ability to change color as they move across various backgrounds. The gray treefrog is an example, altering its color from gray to green



as it moves over bark and foliage. The color change is not instantaneous, but occurs over a matter of minutes. This makes the frog virtually undetectable in many situations.

The black swallowtail butterfly is an insect that passes through a complex series of life stages. During pupation, the changing insect is protected by a chrysalis. Since it takes about two weeks for the butterfly to emerge, the stationary chrysalis is vulnerable to predation. Fortunately, the caterpillar is able to “choose” the color of its chrysalis to match its surroundings. The chrysalis may be green or brownish-gray, depending upon habitat.

Natural camouflage also protects the eggs of some ground-nesting



Crab spiders use natural camouflage to help them catch a meal. The spider (above) waits for a fly or a bee to land on goldenrod for nectar. When the victim is close enough, it is seized and eaten. Bagworms enhance their camouflage by glueing bits of the host plant to their bags. The leaf-like coloration of the katydid is more effective because of wing venation that mimics plant leaf veins.

birds. The nighthawk and killdeer are good examples. Both species lay eggs directly on the ground without use of a nest. The eggs are speckled and so closely resemble the earth that they are difficult to see from several feet away. The female birds are also naturally camouflaged to protect them during incubation.

In some animals, camouflage is heightened by the shapes of their bodies, or the attitudes in which their bodies are held. The most striking example may be found in the walkingstick, a common Kansas insect related to the grasshopper. Walkingsticks live in grassland situations where they feed on plants. Green or brown color phases blend with most grasses, but it is the long, stick-like bodies that finish their disguises. The insects move slowly and

freeze at the first sign of danger, oriented like a twig with front legs extended.

The American bittern is a large marsh bird that blends perfectly with the cattails and rushes it inhabits. A brown bird, it is marked with a streaked breast that hides it among the vertical plants. However, the camouflage is made more effective by the bird's attitude when trying to disappear. A threatened bittern stretches its neck and bill upward, then holds very still. Its posture and cryptic coloration make it nearly indistinguishable from surrounding plant stalks. If discovered, it flies away.

A highly specialized form of natural camouflage is expressed by the caddis fly. This underwater insect glues bits of sand to its body, so that

it actually becomes a part of the habitat. Likewise, the bagworm is an insect that spends most of its life in a small area. It glues bits of plant material to its protective bag in order to hide it from passing birds.

Natural camouflage is a two-edged sword. In many cases, it hides potential prey species from sharp-sighted hunters. But it also works the other way. Especially in the world of insects and arthropods, the hunters may be perfectly suited to lying in wait for unknowing victims. Crab spiders are good examples, hiding in flowers to catch hungry insects.

Hunters or hunted, all may benefit from the ability to hide. Natural camouflage is an amazing facet of the Kansas Outdoors. ♡



The timber rattlesnake is an excellent example of natural camouflage. Scaly skin, a prominent, blotchy coloration and the snake's tendency to lie motionless make it hard to see in its natural habitat. Even the snake's eye fits the pattern of earthen coloration. So effective is the disguise that the reptile must sometimes rattle to avoid being stepped on.

Turkey Man

by Randy Hennen

science teacher, Grant Union High School
John Day, Oregon

photos by Mike Blair

Declining populations of Rio Grande turkeys in southwestern Kansas left biologists with questions. Research began in 1994, when hen turkeys were fitted with transmitters and followed throughout the nesting and brood-rearing seasons.



“Hey there, Turkey Man!” It was my old buddy, Gene. Except for the now familiar greeting and a few assorted cuss words, I couldn’t understand a word he said, but he always made me smile. As a graduate student at Texas Tech University, I had just stopped by the Convenience Plus in Coldwater to grab an early morning cup of coffee on my way to the field for another day of turkey tracking. I was the point man for a new bunch of turkey guys who had again arrived in Comanche County to complete the second phase of an investigation. We were attempting to identify the key factors controlling Rio Grande wild turkey populations in Kansas.

The Rio Grande and eastern subspecies of wild turkey were both

native to Kansas but were extirpated by 1900. Rio Grandes began moving back into the state in the 1950s from flocks that had been re-established in Oklahoma. Subsequent stockings of wild birds trapped in other states and local trap-and-transplant efforts by the Kansas Department of Wildlife and Parks since the 1960s have restored both subspecies to thriving populations across the state. The Rio Grande populations quickly took root in the southcentral and southwestern regions of the state and grew to huntable numbers by 1974. However, declines in these populations in the late 1980s puzzled biologists and drastically reduced the hunting opportunities in the southwest.

Rio Grande wild turkey numbers declined in other states, as well,

leaving department biologists looking for answers. What factors were responsible for the declines? And was there anything that could be done to improve Rio Grande numbers in Kansas? These were questions we would try to answer. We attached radio transmitters to 133 hen turkeys in 1994 and 1995, then monitored their movements and reproductive efforts. Our goal was to learn more about population dynamics and habitat needs of the Rio Grandes in Kansas.

Residents of southcentral Kansas will tell you that an average year exists only the minds of desk-bound statisticians. During the two years we followed these birds, we experienced extreme opposites in terms of precipitation. Drought conditions marked the 1994 nesting season and the year preceding it. The fall prior

to the 1995 nesting season started in a similar manner, but winter and spring brought near normal precipitation. May, June and July of 1995 were monsoon-like, leading to above-normal precipitation for that 12-month period, and totaling about twice as much precipitation as had been received during the previous 12 months. Looking back, I consider myself fortunate for having the opportunity to study these birds under such contrasting conditions. I have come to believe that precipitation is the driving force behind Rio Grande population fluctuations in Kansas, and probably throughout their historic range. But more about that later.

A year in the life . . .

Rio Grande turkeys congregate at traditional roost sites over the winter months, usually located along prominent, wooded riparian areas. The birds typically disperse from those sites around mid-March as they begin their reproductive activity, and they will move great distances in search of suitable habitat. Yearling hens are the most travel happy and have been known to move more than 30 miles to establish nesting and brood-rearing



More than 100 hen turkeys were fitted with radio transmitters so they could be located and followed through the nesting and brood-rearing season.

home ranges.

The normally gregarious hens adopt more solitary habits as they adopt more solitary habits as they begin nesting. Clutches of 9-12 eggs are incubated for 28 days, if suc-

cessful. Nest success is often less than 50 percent, but unsuccessful hens show a strong inclination to re-nest if habitat conditions are adequate. Most hens attempt at least one nest, but the nesting and re-nesting rates that I observed were higher for adult (2 years old or older) than for yearling hens, and nesting rates were higher in 1995 than in 1994. Reduced nesting rates during the 1994 drought were driven primarily by depressed nesting rates for yearling hens, and increased re-nesting rates among adult hens were largely responsible for the higher re-nesting rates that I witnessed in 1995.

Hens will nest in a variety of cover types but always select sites where there is an abundance of shrubs and herbaceous vegetation to provide screening cover — dense vegetation that obstructs vision at ground level. Nesting hens on my



Drop nets were used to capture the Rio Grande turkeys used in the study. Researchers wanted to learn more about limiting factors in nest success and poult survival.

study areas used all available cover types, but showed the greatest preference for riparian areas. Rangeland was used in proportion to its availability and cropland was used proportionately less than what was available. Selection of Conservation Reserve Program (CRP) grasslands was mixed, as CRP was preferred nesting habitat for hens at one trap site but received no use at two other trap sites.

The overall nest success I observed was 32 percent and was somewhat higher for re-nest attempts than for initial nests. The cover type used for nesting did not seem to affect nest success, but much to my surprise, areas where the surrounding landscape was dominated by CRP had 0 percent nest success, while nest success in all other landscapes was 30 percent or higher. Combining this data with that collected previously on this study area, we see that the proportion of hens that successfully hatched a clutch was closely related to precipitation that occurred from February through July. This may be because of precipitation's influence on the quantity and quality of nest cover. Predation, especially by raccoons and skunks, accounts for the majority of nest losses in Comanche County, and elsewhere.

Hens with broods seek habitat with intermediate densities of herbaceous vegetation — ground cover that provides good hiding cover for the poults but is not so dense that it interferes with poult movement and the ability of the hen to see predators. Brood-rearing hens in Comanche County



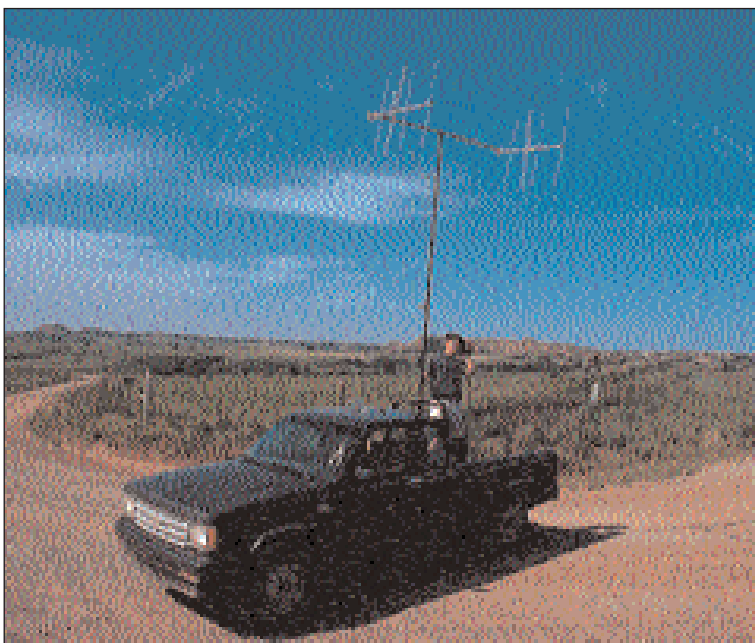
After capture, hens are tested for health and fitted with transmitters. Researchers located each bird periodically through the spring and summer.

showed the greatest preference for shelterbelts, riparian areas, and rangeland. CRP received essentially no use, most likely because poults can't move through the dense vegetation. Regardless of the cover type used, broods used areas that were close to water and overstory cover.

The first two weeks after hatch

are critical for poults, as more than 90 percent of brood losses occurred during this period. When poults are two weeks old and can fly, they begin roosting in trees, and brood survival improves dramatically. Brood and poult survival can vary widely, but typically at least some poults survive from at least half of

all broods hatched. However, the overall brood survival that I observed was only 36 percent, with poult survival as low as 7 percent in 1994. Brood survival in Comanche County did not appear to be influenced by habitat but was much lower in May (6 percent) than in June or July (50 percent). Brood fate seemed to be closely related to the number of 1-inch rainfall events during that critical two-week period following hatch. Broods take a real hit when heavy rains occur, and this could explain the



Researchers gathered data during two contrasting years. 1994 was an extreme drought, while the spring of 1995 brought heavy precipitation.



Predators take a toll on nests and hens. Most losses are to mammalian predators, including raccoons and coyotes.

unusually low survival I observed in May, as wet, cool weather is much more likely to occur at that time in Comanche County than in June or July. Most other studies report that mammalian predation is the direct cause of most poult losses, but my results indicate unfavorable weather conditions could also be a major factor influencing brood and poult survival.

Brood-rearing hens tend to remain solitary after hatching but often rejoin small hen/poult flocks once their poults pass the critical two-week "test." These hen/poult flocks usually remain stable until the birds return to their winter roost sites sometime during October and November.

Turkeys are very opportunistic feeders and spend most of their day either loafing or looking for food, so food is seldom a limiting factor. However, insects appear to be an essential food item during brood-

rearing, as they provide a good source of protein for the fast-growing poults.

Other subspecies of wild turkeys do not appear to select habitat in relation to its proximity to water, but that may be because water is more abundant in the areas occupied by these birds. The presence of water seems critical to Rio Grande turkeys, which have historically occurred in more arid habitats of the central and southern Great Plains.

In addition to the dense nesting cover and brood-rearing habitat, the trees usually located along riparian areas provide essential escape and roosting cover year-round for Rio Grandes in Kansas.

Annual survival for most wild turkey populations is 50 percent to

70 percent, though it was noticeably lower (39 percent) in Comanche County during the two years that I followed the birds. Again, predators, especially coyotes in southcentral Kansas, are the primary cause of mortality. Hen losses tend to be heaviest during the nesting season, though I found survival of actively-nesting and brood-rearing hens generally equal to that of hens not engaged in nesting activities.

Torturing Data . . .

So what confessions was I able to squeeze out of this data from all of my torturing? Turkey population models tell us that variations in recruitment (the number of youth recruited to the population) tend to have a greater impact on population numbers than variation in adult survival. Though the annual hen survival I observed was low, it did not vary between years despite dramatically different environmental conditions. In contrast, hen success did show significant yearly variation, and it is surely possible that poult survival could vary widely as the



Turkeys prefer native grassland and riparian areas for nesting and brood-rearing. While CRP was used for nesting, nest success and poult survival was low in areas dominated by CRP grassland.

Timbered areas along streams and rivers was important nesting habitat. Hens showed a preference for areas with herbaceous screening cover at ground level. Precipitation impacted nest success when dry years limited quality nesting cover.



number of heavy rainfall events during the brood-rearing period fluctuates. These results, coupled with population models developed by other researchers and the variation observed in nesting and brood-rearing success, leads me to believe that Rio Grande populations are regulated primarily by recruitment, and only secondarily by low adult survival.

Poult survival appears to be the weakest link in the recruitment equation. Nest success and nesting effort undoubtedly play important roles and may become the major limiting factor in any given year. However, wet, cool weather, common in southcentral Kansas during May when many broods are hatched, has a strong negative influence on poult survival. The unusu-

ally low poult survival I observed in Comanche County may indicate that the brood-rearing stage is the most important factor limiting recruitment and population growth of Rio Grande turkeys in Kansas.

The amount and timing of precipitation appears to be the critical factor affecting wild turkey recruitment in Comanche County. I found the best predictor of brood survival to be the number of 1-inch rainfall events in the two weeks following hatch. Hen success was closely tied to the amount of spring and summer precipitation through its influence on

nest cover and nesting effort. Other researchers have also noted a relationship between fall precipitation and recruitment the following year, presumably because of precipitation's effect on the quality of nesting cover.

I believe that population persistence of Rio Grande turkeys in Kansas may depend on periodic recruitment "spikes" that occur when favorable precipitation conditions occur in synchrony. The levels of recruitment that I observed in 1994 and 1995 were not sufficient to maintain turkey populations on the study area. However, the drought conditions that depressed nesting efforts in 1994 and the occasional heavy rains that reduced brood survival in both years are not unusual for this region. This may explain why southcentral and southwestern Kansas represent the edge of the historic range of the Rio Grande turkey. Precipitation appears to influence every aspect of recruitment, in positive and negative ways, and any combination of conditions favorable to hen success and poult survival could result in dramatic population growth on a periodic basis — sort of a boom and bust cycle.

I noted few differences in habitat characteristics between areas used



The first two weeks of a poult's life are critical. At two weeks, when they can fly, they begin roosting in trees and survival rates increase substantially.



Hens are solitary during the nesting season, but will often join with other hen and broods later in the summer. Insects are an important food source for young poults.

by broods and random locations, and no apparent relationship between brood survival and habitat. This, combined with the moderate-sized home ranges of brood-rearing hens (about 250 acres) and the moderate distances moved from nests and brood-rearing areas (usually less than 1 mile), indicates that brood-rearing habitat is adequate in this part of Kansas. The overall nesting rates, re-nesting rates, and nest success I observed were all at or above the values reported in most other studies, indicating that nesting habitat is not generally limiting, either. However, during the drought conditions of 1994, I observed reduced nest cover at unsuccessful nests, lower yearling nesting rates and adult re-nesting rates, and lower yearling nest success, suggesting that population growth may be limited by a shortage of quality nest cover.

Nesting and brood-rearing

hens used riparian areas extensively, and the use of other cover types may be determined by their proximity to wooded riparian areas, as the birds were never far from this cover. The presence of overhead cover for roosting and escape, in an area where such habitat is scarce, is probably the key to the preference



When habitat is sufficient, hens will often re-nest if the first nest is lost. Late broods had higher survival rates.

of wild turkeys for riparian areas. The linear nature of this habitat also makes it ideal for use as dispersal “highways.” Shelterbelts were also used by brood-rearing hens and may be at least partially substitutable for riparian areas. However, shelterbelts usually lack the understory shrub and herbaceous cover necessary for nesting and are often more isolated than riparian areas, making them less attractive.

Conversion of native rangeland to cropland will likely be detrimental to Rio Grande populations. Rangeland was among the most preferred cover types for brood-rearing hens and received substantial use by nesting hens. Cropland was avoided by nesting hens, which probably reflects a reluctance to locate in large blocks of agricultural land far from necessary overhead cover more than avoidance due to habitat characteristics.

The value of CRP grasslands to wild turkeys may be less than previously thought. The selection of CRP by nesting hens was inconsistent and probably depended on its proximity to riparian areas. Nest success was relative high for nests located in CRP (39 percent), but it was 0 percent where CRP dominated the landscape. Previous research on the study area indicated that hens had a more consistent preference for nesting in CRP and that nest success was unusually high (53 percent) for nests located there. The reduction in nest success and preference for CRP I observed in this area may reflect a decline in habitat quality due to successional changes as these grasslands mature in the absence of disturbance. The value of CRP

to nesting wild turkeys could probably be improved and maintained by controlled burning or strip discing. CRP has little value for brood-rearing due to extremely dense vegetation.

So what?

That brings us to the question posed some years ago by inveterate wildlife researcher, Charles Romesburg, "So what?" First of all, wildlife managers and the interested public need to understand that Rio Grande populations are likely to fluctuate a great deal despite the best management efforts. Rio Grande turkey recruitment and population levels appear to be closely tied to the amount and timing of precipitation, and precipitation in southcentral Kansas is notoriously variable.

Maintaining healthy riparian areas with adequate overstory and understory cover appears to be critical to wild turkey populations in southcentral Kansas. Any management actions will be most effective if applied in riparian areas and the areas adjacent to them.

Appropriate livestock grazing practices benefit wild turkeys by providing intermediate vegetation densities, preferred for brood-rearing, and by providing disturbance necessary to maintain quality nesting cover. Rio Grande turkeys evolved in the presence of large herds of grazing animals on the Great Plains and are adapted to this type of disturbance. Livestock water sources may also be important to turkeys.

There is an old Navajo saying, "Coyote waits. And coyote is always hungry." Everywhere they turn, it seems, wild turkeys are beset by predators. Predation is the major cause of nest loss, the major cause of poult loss, and the major source of hen mortality. The knee-jerk reaction is to do something to reduce predator populations. However, the answer to the predator question is not that simple. There is little doubt that predator control could lead to increased recruitment in wild turkeys, but research indicates that it must be intensive, applied over large areas,

and be conducted annually to be effective. It would simply be cost-prohibitive. Furthermore, hens readily reneest, and predation of initial nests forces a greater number of hens to nest later in the year when brood survival is much higher. And, in the big picture, it is difficult to justify selectively and intensively killing predators solely for the benefit of wild turkeys.

There is still much that we do not know about Rio Grande wild turkeys and the factors that regulate their populations. We have a wealth of information on the behavior and biology of hens, but we know practically nothing about gobblers. However, thanks to the efforts and the work of many, a clearer picture is beginning to emerge. Armed with this information, wildlife managers and interested landowners will be better able to make intelligent decisions that benefit wild turkeys, helping ensure this grand and noble bird continues to survive and thrive in its native land. ♡



Weather may be the most important limiting factor in Rio Grande turkey populations in Kansas. Precipitation has both positive and negative impacts. Dry years limit nesting habitat and heavy rains after hatch can take a toll on young poults.



The Rolling Cow

By Bob Condia
professor, AIA, Kansas State University

illustration by Dana Eastes

Every angler knows that weather can effect fishing success. But karma? Can karma and an angler's deeds have an impact on angling? Read on.

There is karma in fly fishing. Karma, as you know, is the good or bad consequences of one's actions within the life force. Let us not get too weird, but simply recognize that karma can be a functional thing outside of destiny, fate, or providence. When properly utilized, karma means good fortune and luck. These two properties are essential in your vest and heart.

I first came across the practical aspects of karma — which is to say preparing a decorous state of mind — in the exercise of catch-and-release fishing. Simply put, I never caught so many fish as when I began to release everything (I really don't enjoy cleaning fish anyway.) I discovered that the universe somehow acknowledged my quickly liberated captures, and my reward was another fish. It might be argued that one catches more by avoiding the time and tasks necessary to creel a fish, hence increasing the actual fishing time. Thus, catch-and-release is particularly profitable when fishing action is the hottest. You catch more fish because more fish are eating. At first, I wrote this off as mere logic. But now, inexplicably, I have a strong sense that fish seem extra playful knowing of their impending release. OK, this is a gross misrepresentation of fish logic; it is I who have a mental shift resulting in a better concentration on the angling. This, in turn, makes the fish appear more cooperative. I become calmly focused and concentrate at a higher level. This is karma.

I can make an analogy with what sports announcers call "the zone" and what we used to call "getting hot." I was a streak shooter in high school basketball, running hot and

cold. When hot, the ball found its way to the hoop with little help from me, and there was nothing the defender could do to block it. What an intoxicating frame of mind this



was! However, my statistics proved that I was off more than on. This condition no doubt destined me to my present career.

Curiously, some things never change, and today I am a streak fly-caster. But now I know a streak can be evoked by setting the world right — good karma. What does one do to increase good karma? Three things come to mind: equilibrium, good deeds, and preparation.

Preparation is the easiest to achieve. Simply anticipate your fishing adventure as much as possible and avoid the anxiety of not having the right stuff at hand when on the water. Frustration is a mind-killer as unavoidable as the wind, rain, turbid water, and lockjawed fish. Apprehension will not be nurtured if primed by supplies and casting practice. For example, one of my fishing partners suggests that when your casting goes south, try slowing down. You know, relax into the situation to resolve the problem.

It works. Good deeds also prime your luck.

Oh Grasshopper, the opportunities are infinite and you will need to discover your own way. I find that the trout gods are enlivened by minor sacrifices like picking up garbage along the lakes and rivers. These acts appease the spirits.

I have found good luck in moving boulders off the backroads in trout country. Equilibrium, or serenity, are a little more difficult to evoke and come for me only after several days of continuous fishing as my mind detaches from the real world of democratic consumer culture. Familiarity of place is a powerful pill in the search for quiet. My favorite spots, rods, or flies wrap me in a warm blanket of confidence. Quiet assurance breeds good fortune.

If karma is revealed only in catching more fish, then I might chalk it all up to plain, good luck — of which I have more than my fair share, thank you. But the meditative nature of fishing with a fly expands for me into realms of synchronicity: that is, into realms of meaningful coincidences of simultaneous events. I will explain as I can.

Last year on the Gallatine River, I was wondering out loud about the apparent absence of bears on the river. I'd seen none all summer. A stone was in the road. Of course I stopped, so I could roll it off the pavement. As I accelerated up the hill, a black bear bounded across fifty yards ahead of me. He paused at the river to look back as I waved. This was a coincidence, surely. A good day of fishing ensued.

Another time on the Dolores

River, my SAAB inexplicably refused to start. It did this on occasion, being a SAAB. It took maybe 20 minutes of fondling wires and vacuum lines before the car decided to run. As I drove up the canyon towards the dam, I saw a large raptor flying my way. It carried something. I decelerated as the bird, on an intercept course, passed over the hood and landed only 10 feet away. I paused. It was an immature golden eagle with a baby skunk for lunch. I watched until the eagle had enough of my human company and flew away. There was an excellent caddis hatch that evening and I connected to a 22-inch cutthroat on an Elk hair caddis fly. Happenstance? I do not know, but these things happen to us and I am now one for giving meaning to such occurrences.

Ok, synchronicity may be another way of saying, "stay observant." For instance, if you are on the water getting ready, and a Blue Wing Olive alights on your rod as you string up, is it a coincidence or a clue? Say you are in a challenging hatch situation where nothing seems to work. Then, while studying your vest's fly patch, you notice a midge there drying its wings. Is this serendipity or a cue? Half-full or half-empty? I for one now find such suggestions divinely offered to those in the zone — good karma.

On a related note, last month, in desperate need of some fly rod therapy, I went to Pottawatomie One State Fishing Lake near Manhattan. Conditions were apparently against me, but the gear was ready, flies tied, and I was dedicated to work beyond the imperative. The Weather Channel

predicted against me, thunderstorms were likely, and indeed I drove through wind, lighting, and rain heading north. There was a limited reprieve while I put on my waders and threaded the rod, only to be greeted by a downpour coincident with my first cast. Fate? Actually, no, I even caught a few bass. The weather cleared to a perfect evening and I had the lake essentially to myself. Fishing after a front can be good, if not great, and so it was. But the story does not end here.

At sunset as I floated and cast from my tube boat, a pickup towing a stock trailer caught my attention. As the rig passed my position, I noticed a strange echo in

wondering where the gate was. Gone. And if that animal takes one more step...

which she did. Her front feet hit the pavement at fifty miles per hour. Sparks, I think. The rear legs had to follow in a sort of mock leap. As the back legs came like a rubber band to the rest of the body, balance on the front feet was lost. The cow slapped hard to the pavement and rolled in the direction of truck's travel.

Now here is something I bet you did not know: when a cow rotates down the highway, it holds its legs straight out. I recall three rotations before she was out of my sight. A car following the truck and trailer must have witnessed the same spectacle. Its driver stopped, and I watched the cow thankfully regain her feet. She looked shocked. The car looked surprised. I could not see the driver because of the shadows, just movement within that lent an eerie flavor. The driver cooled the car's funk by accelerating around the heifer, honking like a first-time father on the way to the hospital. We, the pinball bovine and I, were left to reflect on the events. As I lifted my rod absent-mindedly, I had a fish on.

The cow was ultimately, but not smoothly, rounded up by two pickups full of men not really seeing the humor in a situation of chasing a wounded and running animal up and down the road.

As for me, I caught no more fish and the next day was interned by a bronchial infection that still lingers. I hope never again to endure a rolling cow. ♡



the usual logic of the universe. A cow was standing half out of the trailer's back gate, front feet on the bumper. You know how your brain does a thousand simultaneous calculations about what is wrong with this scene? So did mine. I remember



Catfish On The Fly

text and photos by Mike Blair
associate editor/photographer, Pratt

The challenge of catching catfish on a fly is hooking anglers as fast as fish. And wise flatland anglers will tell you that trout have nothing on channel cats when it comes to testing tackle.

A great-crested flycatcher dropped from the sky, diving into a nest hole on a dead limb above the water. It was a pleasant aside, watching the bird feed its young in the warmth of an early June morning. The bluegill spawn was tailing off, but the action was still interesting. Slipping a pair of nymphs through the shallows, I finned my belly boat along the pond's edge and cast beside a submerged stump. At once there was a swirl, and a forked tail swept the surface as a big fish lunged for open water.

There wasn't time to wonder why a channel cat would take the tiny fly. The fish surged against the

4-pound tippet, threatening to break off at any second. I paddled my float tube away from shoreline snags and vegetation, while the fish went deep. Holding steady pressure on the five-weight rod, I punched the timer on my wristwatch and let the cat swim. From my momentary glance, I anticipated a trophy of more than 10 pounds.

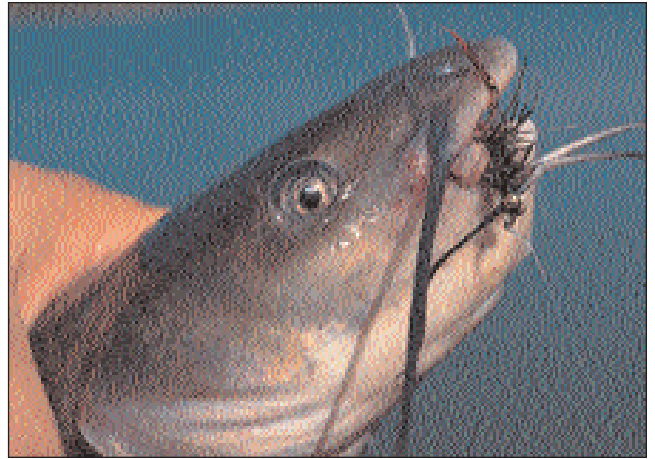
Eleven minutes into the battle, the leader's point fly finally reached surface. Even so, it was several more minutes before the fish, hooked to the 3-foot dropper nymph, came into view. A powerful fighter, the channel was surprisingly small — about 7 pounds. I carefully worked it close to the tube but found I couldn't grasp it behind the head with one hand. Paddling back into the shallows, I lifted and strung my first fly-caught catfish, a true prize for a size 10 hook.

Since then, I've learned what many warmwater anglers know — channel catfish can be more than accidental targets for a flyrod. Water conditions must be right, and

a few tricks may be needed, but Mr. Whiskers is eager to strike the right fly at the right time. In favorable waters, it's possible to catch dozens of channel catfish on flies in a single outing.

Channel catfish are generally misunderstood as bottom-hugging scavengers that would seem to have little interest in tiny critters jetting through the undercurrents. But that's not actually the case, since they relish insects, crayfish, mollusks and other fish. They do eat dead animals and other foods emitting strong odors, and are better geared to finding food by taste and smell than by sight. It is this reason that fly anglers may overlook them as prime angling targets.

A study of the catfish's senses and habits helps to sort it out. First,



Channel catfish are seldom thought of as targets for fly fishing. However, they will readily take a fly under the right conditions. The bead-chain woolley bugger is a good choice.

the whiskers, or barbels, are covered with taste buds capable of finding food in water without direct contact. The skin, body, and fins of the catfish are similarly equipped to help in this regard. A channel catfish also has a keen sense of smell, but this is limited to the nostrils atop its head. Through smell and taste, food can be found at night or in turbid water. The catfish also has adequate eyesight but relies less on this sense than others when dining.

Because of this, adding odor may make flies more effective. I was convinced of this one afternoon while fishing from a ledge in a clear, deep pond. While casting a crawdad pattern for bass, I noticed several large channel cats swimming leisurely about 6 feet deep. Though I stripped the crawdad to within inches of them several times, they ignored the fly. Looking through my vest, I found an old bottle of panfish lure scent and worked it into the hair and feathers of the crawdad. On the next close pass, a 4-pound catfish whirled on the fly and struck hard. I landed two smaller



Channel catfish may be fly-caught from ponds, lakes, or rivers. Water must be clear enough to help the fish, not normally sight-feeders, to see a passing fly. Addition of commercial fish scent often makes the fly more effective. The catfish first smells the fly, then spots and attacks it.

channels with the scent-laden fly.

Seldom is the water clear enough to sight-fish for cats, but when channels are spotted cruising, they can often be caught on scented flies. I'm convinced that scents make the difference between accidental and consistent catches, both in clear and murky waters. It's not like you must dip a fly in stinkbait — I've had good luck with several of the liquid fish scents commercially available for other species.

Many kinds of flies can be effective. Channel cats will bite streamers, black ghosts, nymphs and crawdads. Rarely, they'll take a floating grasshopper. Though catfish may be found at any level of the water column, they tend to feed near the bottom. Therefore, weighted flies fished slowly are the best choices. My favorite fly for catfishing is a size 6 black woolley bugger tied with gold bead-chain eyes, grizzly hackle and a red

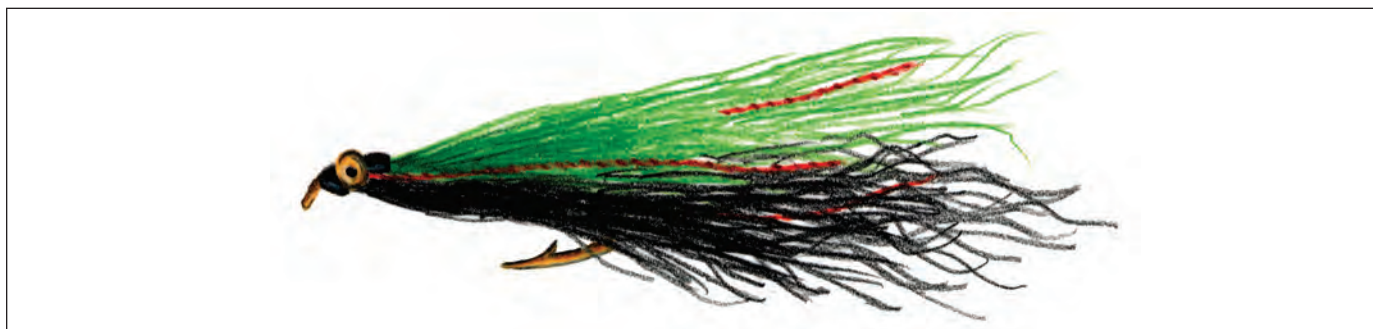
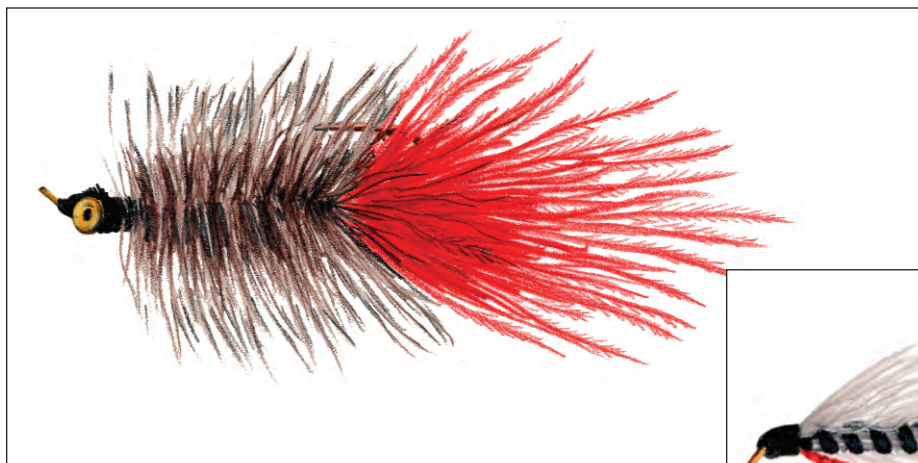
marabou tail. I double the hackle to produce a dense body which can absorb more scent.

Especially in murky water, pairing flies about three feet apart increases the chances of connecting with a catfish. The lead fly creates a scent trail that may turn a fish in time to spot the second fly trailing behind. Last summer, I fished a pond so muddied from recent rains that it appeared futile even to try it. However, since it was loaded with small catfish, I tied on two woolley buggers, scented them, and began casting from the edge. In a short afternoon, I caught nearly two dozen 1- to 2-pound channels, most of them on the dropper.

Stream fishing can provide exciting flyfishing for catfish. Unlike ponds or lakes where feeding patterns seem more random, stream fishing is more predictable. Channel catfish usually stay in deeper holes during the day, moving into riffle

areas at dusk to feed. They may also become active on overcast days and in moderately rainy conditions. Rising water washes food into streams and often triggers feeding sprees. Small minnow, insect, and crayfish imitations are effective for stream catfish. Again, adding odor to the flies increases success.

Channel catfish can also be caught on fly tackle during the spawn. Spawning takes place in late May or early June, when water temperature warms to about 80 degrees. Male fish select the spawning site, which is always located in some type of cavity. Holes or crevices along stream banks, submerged tree roots, logs lodged against a pool bottom, or hollows beneath a rock or stump are choice locations. The male prepares a nest and waits for a female to enter and lay her eggs. Then the male guards the nest for about 10 days, when the fry disperse.



Good flies for channel catfish include the woolley bugger, left, the black ghost, right, and the Clouser minnow, bottom. Colors shown are the author's favorites. Normally, dark colors work best in murky waters, while light-colors are best in clear.

Dustin Teasley illustrations

Throughout this time, the nest is protected from all intrusion, including flies fished near the nesting site. Good places are productive from year to year, so be sure to revisit lairs where spawning fish are caught.

Solunar table followers believe catfish are most active when the moon is “underfoot.” There are two major periods of animal activity each day — one when the moon is directly overhead (timing varies each day depending upon moon phase,) and the other when the moon is hidden on the opposite side of the earth, or directly underfoot. One theory says that scale fish, which feed high in the water column, are activated by the gravitational pull of the moon overhead. Bottom feeders like catfish respond best when the moon’s gravitational pull is from “below.” Levels of activity depend on moon phase.

If the theory is true, best fishing on a given day should be expected at the appropriate Solunar peak time. For years, I’ve kept careful records of fishing success as it relates to Solunar peaks. Channel catfish, in fact, seem to conform to these feeding periods more than other fish.

I first learned of this on a bait-fishing trip to a small lake on a hot afternoon in June. The moon was full, with the underfoot “catfish” peak slated for 2:00 p.m. Under a blazing sun with no wind, the temperature rose near 100 degrees. It seemed like anything but catfish weather. Using lines baited with nightcrawlers, my daughters and I waited for several uneventful hours as the peak time approached. Then, right on cue, fish began to bite. During the next 45 minutes, we caught 14 channels weighing up to four pounds. Then, as if a switch was flipped, the water went dead again.



Big channel catfish can reward the fly fisher with an impressive fight. Not uncommonly, cats in the 10-pound range can be caught on small flies. This pond fish took a McGinty nymph on a size 10 hook and 3X tippet in four feet of water.

Results aren’t always this dramatic, but I’ve often experienced good catfishing in step with Solunar predictions. Since flyfishing for these whiskered fighters is something of a tricky proposition anyway, the Solunar approach doesn’t hurt. Best bets are those times when the moon is underfoot during daylight hours, at the half- and full-moon phases.

Channel catfish may grow larger than 30 pounds, but those weighing 5-10 pounds are common and easily caught on flies. The mouth of a catfish is fleshy, but possesses ridges of bony teeth. In addition, the skull is broad and bony, extending to the upper lip. Much of the mouth is not easily penetrated by a hook. For this reason, hooks should be strong and sharp. I use chemically sharpened hooks, 2X heavy, and pinch down the barbs for better penetration.

Since channel cats are ferocious fighters and tend to roll and run for heavy cover, strong leaders are also necessary. O-X tippets, or even the new thin-diameter, high-strength braided lines such as Fireline or

Spiderwire, are good choices. I fish a weight-forward floating line, with a length of leader appropriate to water depth. Most stream and pond channel cats are caught in water less than 6 feet deep.

Channel catfish, especially large ones, are difficult to land. Though their teeth aren’t sharp, large fish can inflict a substantial bite when grasped by the lip. Mildly toxic dorsal and pectoral spines can produce nasty wounds, should the fish flop while being handled. Channel cats up to 5 pounds can be grasped behind the head easily enough, but larger fish should be netted, especially when working from float tubes. This helps prevent possible punctures to the belly boat, while guarding against injury.

Though catfish may seem ignoble quarry to sport elitists, their pounding strikes and thrashing battles are pure fun on a fly rod. With a few tricks and a little luck, you’ll learn for yourself how channel cats are a bonafide candidate for warm-water flyfishing adventure. ♡



POISON IVY ITCH

by Spencer Tomb

associate professor, biology, Kansas State University

photos by Mike Blair

Whatever name you call it, poison ivy can ruin a day outdoors. But if you learn to identify its different plant forms and what to do if you're exposed, you can enjoy the Kansas outdoors itch-free.

Just mention the words "poison ivy," and some turn and head for the vehicle or back to the main trail. You are not alone if a bad experience with poison ivy has kept you from fishing, hunting, camping or otherwise enjoying the

outdoors. About 85 percent of the population is susceptible to poison ivy. Contracting the rash is a nasty experience, but there is hope for all but the highly allergic. You can take charge, learn more about poison ivy and how to avoid getting the rash.

Even if you are susceptible to poison ivy, you can learn to avoid it and enjoy the outdoors.

The common name poison ivy was apparently given by Captain John Smith. Smith wrote, "The poisoned weed is much in shape

like our English Ivy, but being but touched, causeth rednesse, itching, and lastly blisters, the which howsoever because for the time they are somewhat painfull, it hath got it selfe an ill name....." (Source: *The Complete works of Captain John Smith* edited by Philip L. Barbour, University of North Carolina Press, Chapel Hill and London, 1986, volume II, page 341)

Poison ivy is much better understood today. It, along with poison oak and poison sumac, is a member of the genus *Toxicodendron* in the Anacardiaceae or the sumac and cashew family. Mangos and pistachio are other members of this family of about 77 genera and 600 species. Most of the Anacardiaceae are tropical or subtropical trees, shrubs or vines. Sumac (*Rhus sp.*) and poison ivy, poison oak and



A sea of poison ivy can be an unschooled hiker's worst nightmare. It is important to learn to recognize the three-leaved plant in all its stages. Poison ivy can be a low-growing ground plant, a medium-sized shrub, or a thick vine that climbs through trees.

poison sumac (*Toxicodendron*) are the most often encountered members of the family in the United States. These two genera are related and used to be lumped

together in the genus *Rhus*, but *Rhus* has orange to red fruits and does not cause the rash.

All of the contiguous 48 states have some populations of poison ivy, poison oak or poison sumac. Nevada is the only state where *Toxicodendron* is rare. Poison ivy and poison oak have spread and become more common with civilization.

"Leaflets three, let it be!" is a good thing to remember. Poison ivy and poison oak can be recognized in the field by their alternate, compound leaves with three leaflets. Very young plants can have five

leaflets so it is not an absolute rule. Shape and size varies, but leaflets usually have toothed margins and a tinge of red at they join the stalk. The mature fruits are white or cream colored in all of the rash-causing plants. Poison sumac is a small tree with seven to 13 leaflets and is found only in wet, swampy areas in the eastern United States.

Poison ivy is found throughout Kansas. We have two poison ivy species in Kansas, *Toxicodendron radicans*, which is common in riparian habitats and forest margins in the eastern two thirds of the state and *Toxicodendron rydbergii* of western Kansas, which has smaller leaves with rounded leaflet tips. The latter is often mistakenly called poison oak.

There is a good side to poison ivy that we often overlook. It can be a spectacular fall color plant as it turns red early in the fall. It is even cultivated for its fall color in some places in Europe. The cream colored to greenish-white fruits are highly sought after by birds. Flickers, in particular, like them.

Poison ivy is a variable plant; it can exist as a trailing vine on the ground, as a weak shrub or as



Poison ivy is a beautiful fall plant in Kansas, turning red by late September. Sometimes, the vine grows aerial roots that give it a hairy appearance.

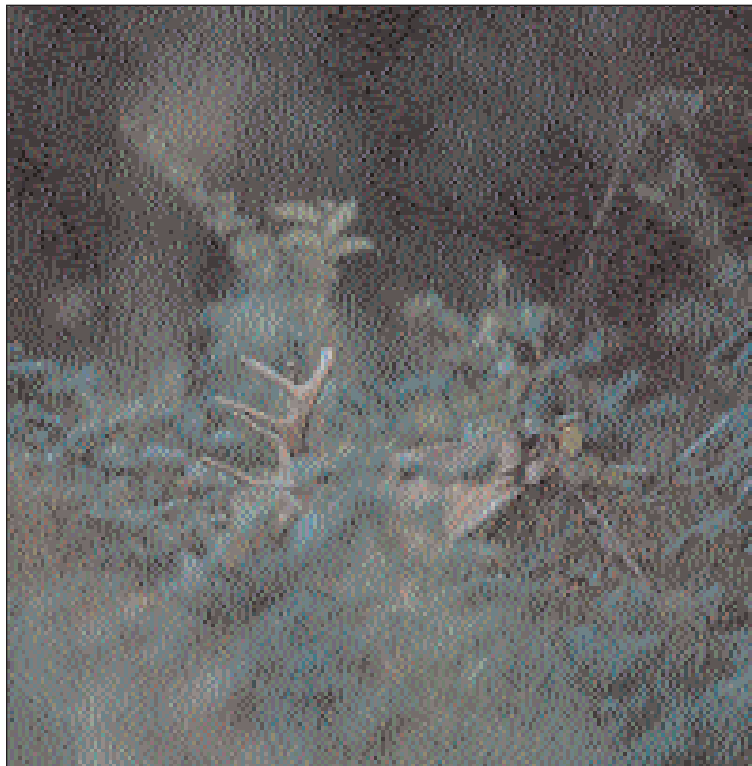
climbing vine that can climb to the tops of tall trees. This variability in appearance and in leaf size and shape makes poison ivy difficult to identify.

An estimated 35-45 million cases of poison ivy dermatitis occur each year, and more than 2 million of these require medical attention. Sensitivity (the degree of the problem poison ivy causes) varies considerably from individual to individual.

Poison ivy dermatitis is more common in the summer, but cases can occur in the fall and winter when contact is made with the plants when gathering firewood or hunting. Smoke from burning leaves and vines can cause serious problems in the lungs of sensitive individuals. In some populated areas of the eastern United States, it is against the law to burn poison ivy.

The rash is caused by a pale yellow oil called urushiol (you-ROO-she-ol). The oil is released from resin ducts in the stems, leaves and roots when they are injured.

Poison ivy is often cursed for the allergic reaction it causes in many humans. Even so, it is a useful food plant for wildlife. Birds such as the red-bellied woodpecker (above right,) white-tailed deer, and other animals eat its berries, which are produced in late summer and persist through mid-winter. The berries are cream-colored and grow in clusters. Animals which eat them help to spread poison ivy far and wide, since the seeds are passed through the digestive tract without harm. This is why the plant is common in fencelines and under forest edges, where birds tend to perch and void.



Urushiol is sticky, almost invisible, and easily spread by anything that comes into contact with damaged plant tissue.

Urushiol reacts with proteins in the skin of susceptible individuals and causes redness and swelling followed by itching and blisters. It takes 8 to 48 hours for the rash to appear.

Common Poison Ivy Myths

There are many myths surrounding poison ivy and the rash it causes. The most commonly held misconceptions are as follows:

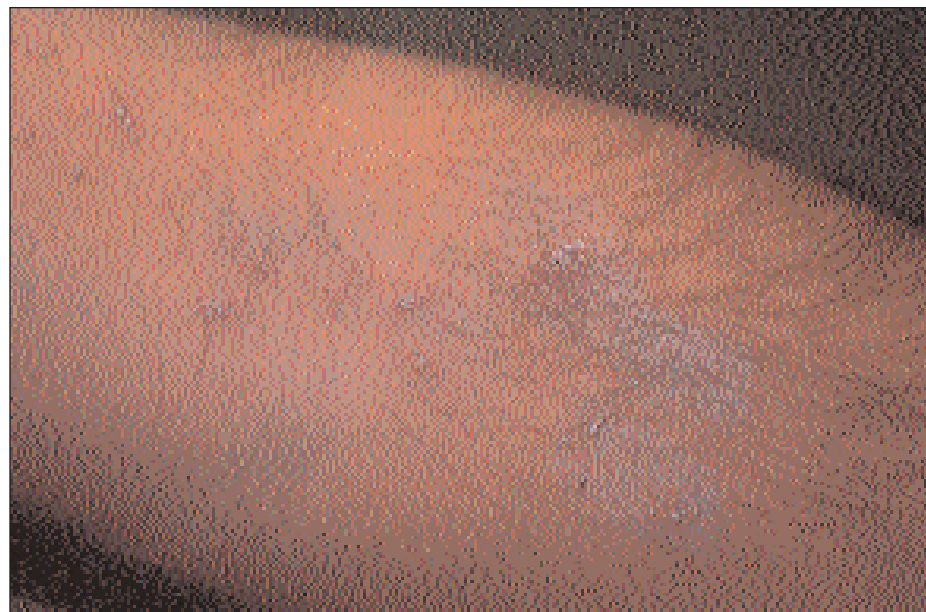
Poison ivy is contagious. No. Only contact with urushiol will spread the rash. The rash cannot be trans-



mitted from one person to another.

Scratching the blisters will spread the rash. No. These blisters do not contain urushiol. Scratching them may cause secondary infections, but it will not spread the rash. The rash often seems to spread, but it is always due to an earlier contact with urushiol. The rash will start in the areas where concentration of the oil was highest and seem to spread.

Once allergic to the plant you will always be allergic. No. A person's sensitivity to urushiol can change over time. Individuals who were very sensitive as children may not be sensitive as adults, and those who did not get a rash when they were young may get it at middle age.



Many myths surround poison ivy and how it spreads. A light case causes mild irritation and itching, while serious rashes can lead to large, watery blisters and open sores. Sensitive individuals may break out after contact with smoke from burning plants.

Dead poison ivy plants cannot cause the rash. Yes they can. The oil remains active and intact in dead stems and roots for several years. Handle dry, dead plants with the same care you would give live plants. Wear gloves and long-sleeved shirts when working with poison ivy.

Native Americans are not susceptible to poison ivy. That is false, too. One translation of a Native American name for poison ivy in the eastern United States is thought to be “The three fingered devil of the forest.” Native American names for the plant give a vivid picture of what they thought of the plant.

POISON IVY PREVENTION

- 1 Learn to recognize poison ivy and minimize your contact with the plants. Even if you are not sensitive, you should avoid direct contact with the plants whenever possible.
- 2 Wear long pants, long-sleeved shirts and gloves when you know that you are going to be in contact with poison ivy.
- 3 When you return home, spray your clothing, camping, hunting, fishing gear, and garden tools that have touched the plants with a garden hose before bringing them into the home. Avoid handling items that have been in contact with poison ivy until they have been washed. Wash your hands as soon as possible if you touch anything that has touched the plants.
- 4 Avoid contact with pets that have roamed freely in places where there is poison ivy.
- 5 If you think you have had contact with poison ivy, oak or sumac,

Native American Names for Poison Ivy

Tribe

Meaning

| | | |
|------------------|--|---|
| Chippewa | <i>animikiibag</i> (uh-NIM-ih-KEE-bug) | thunderleaf |
| Kaw | <i>mahin-ppizhi</i> | “Mahin” is grass or weeds and “ppizhi” is the verb “to be bad” |
| Omaha | <i>xthiwathehi</i> (xthee’-wah-they-hee) | “plant that makes sores” |
| Winnebago | <i>xa-a-win-shishik</i> | “Xa-a-win” is grass and “shik” is “to be bad” and “shishik” is like saying bad, bad |

wash the areas with cold running water or rubbing alcohol as soon as possible. Water or alcohol will remove the oil and keep it from spreading, if you can do this within five minutes. Soap and warm water are not necessary and may even help the oil spread and penetrate .

6 Try IvyBlock. IvyBlock is a lotion that contains a clay mineral that prevents urushiol from reaching and penetrating the skin. IvyBlock is applied like a sun screen, and it works.

TREATMENT FOR POISON IVY

The poison ivy rash will develop within 8 to 48 hours after contact. It will start as a red, swollen streak and will begin to expand, itch and develop blisters. Mild rashes can be treated with cool showers and calamine lotion. Over-the-counter hydrocortisone creams and topical ointments may help very mild rashes, but most dermatologists consider these preparations too weak to be effective in most cases.

Moderate and severe poison ivy

rashes should get immediate medical attention. Prescription systemic hydrocortisone drugs can halt the reaction and dry up the rash if taken soon enough. There is no substitute for prompt medical attention. If you know that you have been exposed and have developed severe reactions in the past, consult with your doctor as soon as possible.

ERADICATING POISON IVY

Poison ivy is a long-lived, deep-rooted perennial, and that makes it hard to eradicate. Large vines and small shrubby plants can be cut at ground level and pulled out of the ground. Be sure to wear gloves and long sleeves and wash gloves, tools and clothes with water after use.

Clipped and dug up plants will regrow from the roots and can be sprayed or brushed carefully with glyphosate herbicide (Roundup or Ortho's). Glyphosate is a non-selective, translocated herbicide. It should be applied to the new shoots that will soon emerge from the base of the old plants. It is most effective on actively-growing plants in the

late spring or early summer.

Another herbicide that may be used is triclopyr (Ortho's Brush-B-Gon). Care must be taken to treat only the poison ivy plants and as with all herbicides, read the label and apply only as directed.

Complete eradication of poison ivy is difficult, and it may take several treatments to kill plants. Remember that the dead stems and roots can still give you the rash. Poison ivy seeds can continue to germinate for several years in places where mature plants have grown for any length of time.

Learn to recognize poison ivy in all of its forms. And when you know how the rash is transmitted and spreads, you will reduce your chances of getting a nasty rash and can enjoy the outdoors with those who are lucky to be immune. Just remember: Leaflets three let it be! 🍀





Scenic Highway

by Fred Markum

Kansas Department of Transportation, Topeka

photos by Mike Blair

The Kansas Department of Transportation is planting native wildflowers along select stretches of highway in Kansas. The flowers and other native plants not only improve the roadside scenery, they can teach travelers about our tallgrass prairie heritage.

The tallgrass prairie is one of the most biologically diverse ecosystems in the world. When Europeans first came to central North America, they found a sea of grasses that stretched from present-day Texas to Saskatchewan and from east of the Mississippi Valley to the Rocky Mountains. Today, only one percent remains. Currently, tallgrass prairie is confined to minute portions of an area from east of the Mississippi River to the Dakotas, and south to eastern Nebraska, Kansas, Oklahoma and Texas. Many conservationists are involved in protecting what is left.

1993 marked an important year in preserving and highlighting this magnificent resource. Representatives from six tallgrass prairie states, Minnesota, Iowa, Kansas, Missouri, Oklahoma and Texas, met to develop the concept of a "Prairie



Passage.” This was to be a north-south corridor some 2,000 miles long and 30 to 60 miles wide, passing through the tallgrass prairie of mid-America. Primarily, it would follow Interstate 35 from Canada to Mexico. In Kansas, a secondary route would pass between Caney and Pittsburg. The objective was to showcase, conserve, and interpret the cultural and natural heritage within the tallgrass prairie region.

The Federal Highway Administration provided first-year funding for roadside inventories and analyses. The Kansas Department of Transportation (KDOT) inventoried 500 miles of Kansas roadway and documented cultural/heritage resources within 25 miles on either side of the designated routes. Broadscale planning by the six-state consortium continued for several years, until collected data were analyzed and the

final route decided.

The Prairie Passage is now in its seventh year and has important benefits for Kansas. Besides promoting the tallgrass prairie, it helps to bolster tourism, advertise cultural events, and enhance roadside management practices of KDOT. When completed, there will be roadside signage and brochures to assist the motorist.

Each Prairie Passage state has a unique story to tell. The Minnesota Department of Transportation has incorporated the Prairie Passage in its “Driving Minnesota Program” which includes scenic byways access to seven state parks along the route. Texas has blue bonnets, Indian paintbrush and a Texas-size list of native wildflowers growing on its roadsides. In April and May of each year, not one but six telephone hotlines inform visitors where they can find peak wild-

flower blooms from Dallas, Austin, Fredericksburg, San Antonio and points south. The Iowa and Oklahoma departments of transportation are concentrating on reseeding native plants within the rights-of-way of the designated routes. The Missouri Department of Transportation is seeding portions of I-35 and other highways and improving roadside vegetation management. Kansas is establishing areas of wildflower and tallgrass prairie interpretive opportunities at rest stops and altering its management practices to favor native plants on roadsides.

An atmosphere of cooperation has sprung from the program. Community involvement, agency partnerships, regional landscape preservation projects, and nature-based tourism has made the concept of the Prairie Passage appealing to groups not originally anticipated.

This is especially true in Kansas, where 66 communities have responded with enthusiasm to Prairie Passage. Small groups, individuals, and organizations have suggested ideas and interpretations that extend and improve the scope of the program. For instance, representatives in Arkansas City are planning a prairie demonstration site in their 200-acre river valley park while incorporating the Prairie Passage concept into their tourism brochures. Likewise, the city of Parsons will greatly expand an existing prairie planting in its city park along US Highway 400. Caney junior/senior high school teachers and students are designing a trail, including interpretive signs, on a small prairie remnant near that city. A special native seed mixture will also be planted to help improve the site.

Conservation groups have also taken an interest. Recently, KDOT and Audubon of Kansas



Many myths surround poison ivy and how it spreads. A light case causes mild irritation and itching, while serious rashes can lead to large, watery blisters and open sores. Sensitive individuals may break out after contact with smoke from burning plants.

began a partnership to prepare Integrated Roadside Vegetation Management (IVRM) programs for nine sections of highways. Representatives from Audubon and other nature-based groups, along with KDOT local vegetation managers, will develop pilot roadside management projects. These IRVM projects will integrate mowing and spraying practices, erosion control, ditch and shoulder management, safety concerns, and reseeding techniques into a better Kansas roadside management system.

The use of native plants has been shown to ease the cost of roadside maintenance in such areas as erosion control, noxious weed control, and mowing costs. These are but a few of the recognized benefits. Tallgrass prairie plants are uniquely suited as roadside vegetation, since they are native and have survived here for thousands of years. Their extensive root systems and symbiotic relationships allow them to flourish in marginal soils such as roadsides, especially during hot dry summers. Non-native “alien” or

“exotic” plants, such as fescue and brome, are generally from Eurasia, and not well adapted to the climatic fluctuations of the Midwest.

Although it is not KDOT’s goal to recreate prairie (an impossible task), it is a goal to plant appropriate native plants in an environment in which they would naturally occur. This concept helps preserve the components in a prairie community. It is best to tailor a seed mix to the specific soil type and geographic conditions, especially on a roadside where the soil has been stripped, packed, mowed and compacted into something resembling concrete. Grass and wildflowers are expected to grow in very unnatural conditions. The soil that is to be seeded seldom contains nutrients, organic material, or beneficial soil mycorrhizae. In spite of all these impediments on a roadside, native plants are demonstrating a tenacious ability to survive and flourish if we give them time to develop. Most roadside

designers and managers agree that seeds collected close to the site will provide the most appropriate seed mix and have the greatest long-term success. Ideally, seed for the demonstration plots is collected within 25 miles, although it is not always possible.

These facts have compelled KDOT to experiment with plant utilization in the Prairie Passage and other roadside projects. An aggressive program of native seed collection has begun in southeast Kansas to facilitate these new practices. The idea is to collect seed which is locally adapted to sites where planting will occur. Plantings include KDOT rights-of-way and new rest areas along Kansas highways.

Gary Weisenberger, KDOT’s native plant specialist, has been the agency’s main seed collector since the fall of 1999. Focusing on forbs (broadleaf wildflowers), he spots potential seed plants when they are in bloom, then waits for the seeds to ripen. Since seeds mature at various times among native plants, collection must be timed and tailored to the individual species. Many collection areas are visited several times throughout a growing season.

When several kinds of seed are ripe for picking, Weisenberger



Roadside signs may be erected to draw attention to native plantings along some highways.



Collected seed must be screened to remove unwanted trash. Some of this is done by hand, and some on a hammer mill. Special care is given native plant seeds to maintain their value. Commercially, some seed species cost more than \$100 per pound.

Weisenberger begins collecting the seed by hand. Normally, he uses volunteers or inmates from the Kansas Department of Corrections (KDOC) honor camp as helpers. KDOC inmates and their supervisors feel that this offers them unique opportunities. Weisenberger has found that inmates are usually interested and good workers. Some have even requested assignment to his gang of volunteers. Weisenberger enjoys answering their questions about the uses of native plants by the Native Americans and early settlers. Partnering with KDOC inmates has generated several other opportunities for state agencies to work together on future native plant projects.

During 2000, 172 native plant species were collected. Although a high-quality prairie may contain 200 or more species, this local native seed is not commercially available. The work of Weisenberger and his crews is well worth it.

After native seed is collected, it is labeled, dried, and stored until it

can be cleaned with equipment borrowed from The Kansas Department of Wildlife and Parks. Seedheads are generally crushed by hand on a rubber-coated board, or by a hammer mill. Seeds are separated by hand through a series of screens, or run through a screening mill. Even the "trash" is saved and spread on the soil to salvage every possible seed. Seeds of many native plant species, if available, retail for more than \$100 per pound of pure live seed.

To facilitate the seed collection process, the Emporia and Wichita Chapters of Quail Unlimited (QU) teamed up to purchase a motorized seed-stripper for Weisenberger and his volunteers. Picture a miniature rotating drum-shaped plastic/fiber brush from an automatic car wash powered by a gasoline weed-eater motor with a large

seed-collection bag, all attached to a medium sized human being wearing goggles, ear muffs and the traditional orange KDOT cap. The contraption does a great job of knocking off seeds from certain plants without removing much of the plant.

As a result of Weisenberger's leadership and ideas on collecting and using native plant seeds on roadsides and public lands, KDWP, KDOC and KDOT are considering a new partnership with a plan whereby native seed would be grown as a crop. It would be collected, germinated, grown to yield one-year-old plants, and then planted in rows for seed harvesting. A crew of KDOC inmates would accomplish these operations. Seed collection from native plant row crops would be made available to commercial seed producers. The seed would be grown, harvested, certified and labeled as seed native to Kansas. This seed could then be purchased by KDOT, other agencies or groups, and individuals. A similar and successful Iowa program has been in operation for about ten years. Missouri has also recently begun a similar program. There is a



Weisenberger instructs seed collection crews on plant identification and proper maturity levels. Seeds must be collected in a timely fashion.

growing demand in Kansas and mid-America for native plants of local origin due to increased usage by public agencies and the private sector.

Through the use of local native plants in the demonstration sites on the Prairie Passage, KDOT hopes to educate the traveling public about the tallgrass prairie heritage of Kansas. Travelers will be able to closely observe a bit of prairie during rest stops. Paved walkways and interpretive signs will provide opportunities to experience prairie-like sites and to learn some of the characteristics that make this resource an important ecosystem. Native Kansas is colorful, inter-

esting and deserves a closer look. Part of it may be close to where you live.

For more details about the Prairie Passage, please contact the author at (785) 296-0853. See the separate list of prairie remnants for wildflower viewing within the Prairie Passage Corridor in eastern Kansas.

There is not room to recognize all the people who have volunteered their time and energy to the seed collection effort. But one individual deserves a special mention for his endless enthusiasm, hundreds of hours volunteering, and profound knowledge of native plants. KDOT gives a special thanks to Carl Paulie of St. Paul. We are also grateful to Quail Unlimited for the mechanical seed-stripper.

GOOD PLACES TO VIEW WILDFLOWERS IN SOUTHEASTERN KANSAS

1. Woodson State Fishing Lake: About two miles southeast of Buffalo off of US-75 and K-39. A loop around this lake provides good access to a wide variety of wildflowers from early spring until fall.
2. US-169 From Thayer South to US-400: The undisturbed area between the old roadbed and the railroad tracks displays a rich assortment of upland wildflowers. Access is available from three gravel county roads that cross the railroad tracks.
3. US - 169 / US - 400 Interchange: New public rest area. This is one of six prairie demonstration sites on the Prairie Passage. The small, bermed area

provides several microecosystems for about 65 species of native wildflowers. A paved path with interpretive signs meanders through the site. Although the site was seeded in the spring of 2000, several species of plants should bloom in 2001.

4. US-75: Two miles south of Independence to US-166 intersection near Arkansas City. Numerous wildflowers grace this area near the Little House on the Prairie, particularly along the railroad tracks on the west side of the highway. Several county roads provide access.

5. Neosho County State Fishing Lake: This lake, located about 5 miles northeast of Parsons on a county road connecting to US-69 provides enjoyment and discovery of many wildflowers and native plants.

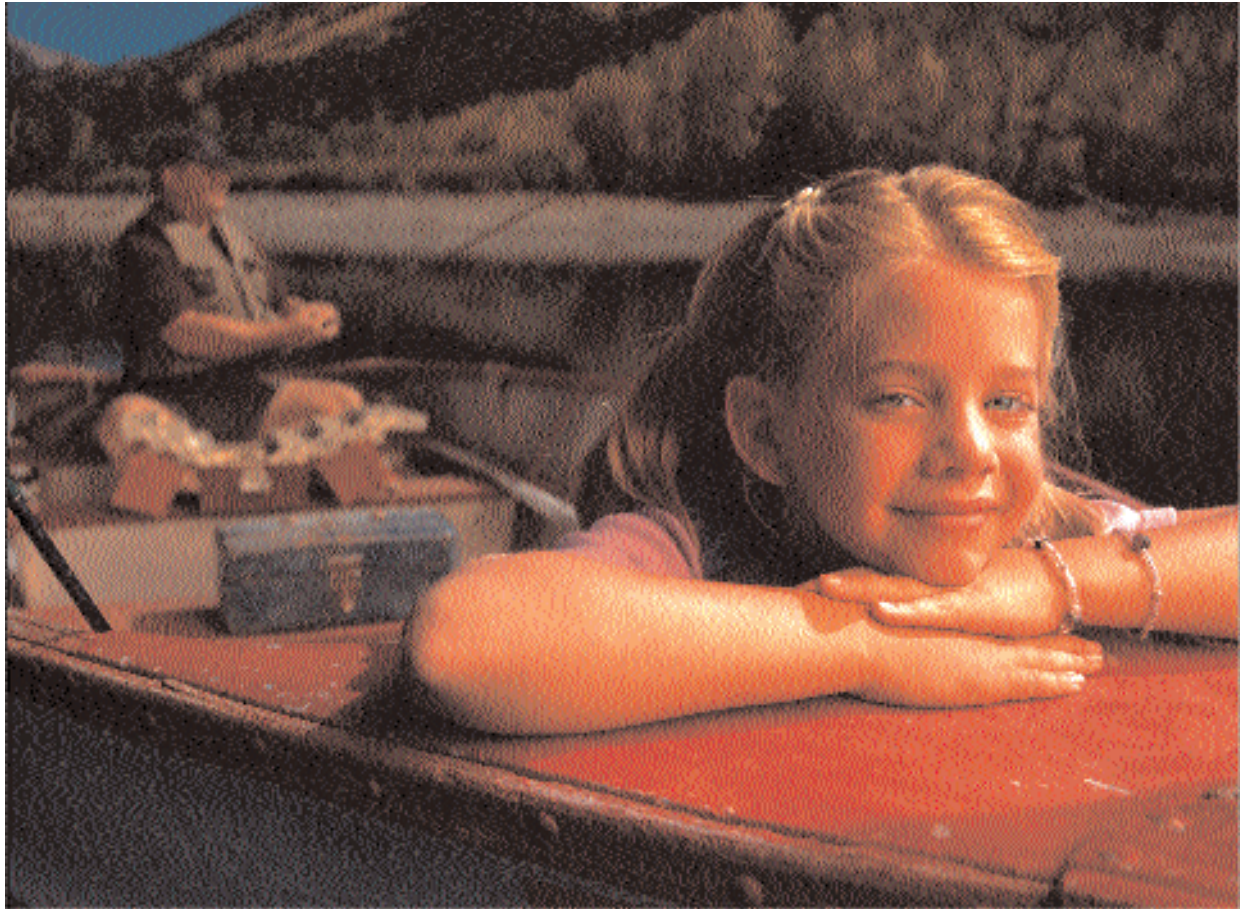
6. Highway 177 from Cassody south to US-54: This 20-mile stretch parallels railroad tracks for its northern 10 miles, then skirts El Dorado lake for the next 10 miles. Several diverse ecosystems are found in the wide rights-of-way along the route.

7. Baldwin City: Blackjack park, located 3 miles east of Baldwin City on US-56, contains Santa Fe Trail ruts, a pre-civil war skirmish site, and a fine hilltop prairie. Best way to experience the prairie is to park at the former US-56 rest area and walk across the creek and up the prairie trail to the top of the hill. It's a short walk ending with a great view, particularly at sunset. ♡

When visiting the above sites, do not park within the right-of-way, or walk closer than 150 feet to the highway. Do not cross fences onto private property or collect flowers, plants, seeds, rocks or other items.



Many colorful prairie flowers bloom throughout summer in Kansas to brighten the landscape.



It's 8 a.m. Do you know who your children are?

Fishing and boating are great ways to connect, and National Fishing and Boating Week is a great time to do it. It's a wonderful opportunity for families to have fun, create new memories and spend time together. Celebrate with us and discover just how much fun fishing and boating can be when you do it together.

www.nationalfishingandboatingweek.org

Water works wonders.

NATIONAL FISHING & BOATING WEEK
JUNE 1ST THRU 14TH

Conservation Officer

text and photo by Matt Stucker
conservation officer, Larned

Continuing series profiling the men and women who enforce wildlife-related laws.



Verle Warner has been with the Kansas Department of Wildlife and Parks for more than 30 years. He started with the department for a common reason: he wanted to make a difference. While he was working for Boeing during the late 1960s, he would listen to some of his fellow workers brag about poaching deer and illegal fishing. Verle didn't feel that this was right and he wanted to do something about it. He joined the Sedgwick County Sheriff reserve as a road patrol officer, but he didn't get to do much with wildlife. Warner then read in the local paper that the State was going to hire some game wardens, so he applied for the job. Shortly thereafter, he was caught in a layoff at Boeing, and knowing more law enforcement experience might help him get on as a game warden, he became a full-time deputy sheriff for the McPherson County Sheriff's Department. Warner was hired by the State in August of 1970. He started in Montgomery County and worked there until 1974 when he transferred to Maxwell Game Preserve as an area manager where he worked for ten years while his children were in school. In 1984, when they left for college, he transferred back into law enforcement. Verle was stationed in Harvey County and has worked several different counties including Sedgwick and Marion. He now works Harvey

and Butler counties with a combined population of around 92,000.

With the abundance of streams, lakes and reservoirs, Warner's busiest during the spring and summer months. Fishing and pleasure boating are among the most popular activities. Most of the fishing pressure starts as soon as the weather warms in spring. The traditional start to the boating season is Memorial Day. This abundance of recreational boaters also gives Warner the part of his job that he likes the least; working boating accidents and helping with recovering drowning victims. Most boating accidents occur due to carelessness and inattentiveness, with a percentage of these involving alcohol. These accidents result in everything from minor property damage to the total loss of property and severe injuries and/or death.

Although the spring and summer months might keep him the busiest, he still has plenty to take care of during the hunting seasons. Quail, turkey and deer are the busiest hunting seasons for him and have given him some memorable moments. Warner remembers working on a turkey poaching case with another officer. By the time they got all the evidence collected and enough cause for an arrest it was Thanksgiving Eve. He and another officer went to the subject's house and cited him for illegally hunting turkey. When they seized

the illegal turkey as evidence, they had to use gloves because it was in the oven.

Another memorable incident for Warner occurred during firearms deer season. Several years ago, a farmer contacted Warner, as he wanted to set up a firearms deer hunt for handicapped individuals. Warner contacted a communications officer with the Harvey County Sheriff's Department who was in a wheelchair and asked him if he knew of anyone who would be interested in a deer hunt. After a few phone calls and some arrangements, they had their first deer hunt in 1995 with three hunters. This may have been the first organized deer hunt for persons with disabilities in the state, and Warner is pleased to have been an integral part of it. Two of these individuals are still hunting and are involved in the black powder deer hunt at Marion Wildlife Area and turkey hunting at Council Grove Wildlife Area.

Warner enjoys hunting, fishing and boating, especially with his kids and grandkids. One of the bigger challenges that he foresees for the future is to protect the environment so that future generations will have the opportunity to participate in these activities. He still wants to make a difference and ensure that there will be others that want to also. ♡

Edited by Mark Shoup

GOOSE RESPONSE

Editor:

Karl Karrow sent me the following response to an inquiry regarding management practices at Marais des Cygnes Wildlife Area. I want to thank him for his informative (and quick) response to my questions. I greatly appreciate the information provided. It reveals a very thoughtful management approach to a set of not-so-obvious issues.

*Fred Bosilevac, Jr.
Shawnee Mission*

Dear Mr. Bosilevac:

The Marais des Cygnes Unit is close to a large urban population (1.6+ million) and is consequently subject to intense hunting pressure. The intensity of hunting is reflected in the nearly 50 private duck clubs that dot the valley. Until recently, Canada geese were highly concentrated around the state and federal management areas. The unit is also different from most locations that harbor large concentrations of Canada geese in that there are relatively few large, flat crop fields where geese can feed.

The unit hunting regulations are specifically designed to maintain high goose numbers in the valley and increase harvest.

Two key biological requirements must be met to hold large numbers of Canada geese in the Marais des Cygnes Valley: a safe refuge for loafing and resting and daily access to crop fields for feeding. If these requirements are not satisfied, Canada geese simply find other locations. The refuge pool (Unit B) on the wildlife area, and to a lesser extent some private lakes within the unit, satisfy the first requirement. The second requirement is problematic, however. Crop fields within the sanctuaries of the state and federal management areas simply cannot support adequate numbers of geese to provide good hunting.

The best management option, then, is

to provide a refuge "in time" to allow geese an opportunity to feed in fields. The afternoon closure ensures that geese can feed undisturbed in crop fields to meet their daily requirements. If all-day hunting were allowed, combined with intense hunting pressure, geese could be precluded from feeding and simply leave the area.

Geese did not concentrate in the valley prior to 1982, and there was essentially no opportunity for harvest in what is now the Marais des Cygnes Unit. I believe the reason for this was simple – every time geese attempted to feed, they were subjected to hunting. When they couldn't feed undisturbed, they left. The unit was established and closed to hunting for 5 years. While the reason for the closure was to establish nesting resident geese, migrants quickly found that the unit was a safe place to rest and feed.

Goose numbers increased dramatically with concentrations of up to 30,000. Regulations from 1987 through the present have been designed to retain large numbers of geese while providing opportunity for harvest.

Management of geese within the unit currently has many challenges. Canada geese are not as abundant, nor as concentrated, within the unit as they were in the late 1980s and early 1990s. Many factors may contribute to this: mild winters that allow geese to winter farther north, reduced corn production within the valley, long (74-day) duck seasons that reduce the availability of wetlands as feeding sites, and liberalized dark goose seasons may all play a role. The department carefully considers these factors, as well as the desires of hunters, when evaluating the management of Canada geese and goose hunting.

Afternoon closures for goose hunting are fairly common in the Central and Mississippi flyways. In fact, some states restrict afternoon hunting statewide. Biologist and managers recognize these restrictions as a means to increase harvest by retaining large concentrations of geese. Further, geese that feed undis-

turbed in a field in the afternoon are likely to return the next morning and be available for harvest.

One final note – you compared the Marais des Cygnes Unit to hunting in Missouri's middle zone. The Missouri middle zone allows 53 days of hunting with a bag of two Canada geese. The Kansas unit regulations allow 51 days of hunting with a bag of three Canada geese. Thus, regulations within the Marais des Cygnes Valley Unit are actually more generous.

Feel free to give me a call or stop by if you'd like to discuss this in more depth. I always appreciate the opportunity to interact with concerned hunters.

-Karl K. Karrow, conservation program specialist, Marais des Cygnes WA

QUAIL IN PERIL?

Editor:

In more than 30 years of pretty serious bird hunting, I have not seen the extent of weather-related quail deaths I saw last winter. I hunted Thursday, Dec 28, just south of the Elyria/Saxman road in Rice County, south of Little River in a section of grass that has sandhills, plum thickets, and native grass. My partner and I have hunted this site for years, and a normal walk-through with three or four setters would account for eight to 10 covey encounters. We are well passed the "kill a limit" stage, and in early November, we moved 11 coveys of about 12 birds each and took four. Pretty average for us because we want to hunt again.

Well, the snow in this part of Rice County totalled 5-6 inches over two or three storms and was like talc. It permeated the base of the native grass and left little open ground south of a catalpa/cedar tree row, and the inner portions of very thick and large plum thickets were white and 3 inches deep. We were immediately concerned due to the lack of tracks normally seen in good habitat areas. There is no row crop activity within 2 miles of this site, so ragweed seed, hemp, and native legumes such as

tick trefoil are the mainstays.

We had a solid point. While discussing the usual strategy that never works, a backing dog moved in and nothing flew. We discovered three hen quail in a huddle, dead, not yet frozen stiff, nothing in their crops and their breast bone keel-like. Upon necropsy, these hen birds were thin and poor.

I realize hens lose energy and fat while trying to re-nest in late summer and often don't go into winter in top condition. Within 15 minutes, another point at the base of a cedar tree disclosed a cock quail frozen in his hollow. Whether these birds died while in a full covey due to weak condition or a late busted covey that did not fully assemble and left these few to freeze, I don't know.

With remorse, we swung back to our truck and in prime red cedar and brush spots found two more bird remains that appeared to have been taken by aerial predators. Feathers in bird pellets nearby confirmed this. Lots of northern harrier, Cooper's, and sharp-shinned hawk activity throughout area, with the sharpshins working the tree rows in normal fashion.

At a row of big round alfalfa bales near our parking place, we saw fresh tracks not there an hour and one-half previous. A lone cock quail flushed from between round bale rolls. One live bird.

Now, I realize in the best of conditions one would expect to move only about 50 percent of the birds in a area, and we certainly didn't give this covert our usual pressure, but I can truthfully say I have never seen three birds dead together and a covert so devoid of quail where so many once were. I do think some have moved to better cover and food sources, but there was ample evidence in the 5 percent or less of this covert we traversed that there has been a major kill-off.

Are you getting similar reports or is this hopefully an isolated incident? One thing for sure: this is going to accelerate my push for placing more filter strips along drainages on my property to create more edge, and I plan to place more 30-foot clumps of eastern redcedar in CRP. (Locals think I'm nuts while they're chopping and burning theirs off).

Also, a number of us in this part of Rice county and up around Bushton have used the Pheasants Forever food plot

material for a number of years. It is virtually impossible to come into winter with any grain left in either the milo, tall sorghum, or millet due to the blackbirds. What can you recommend (other than killing all the cattails at Cheyenne Bottoms) that would prevent it from being decimated so badly by the blackbirds?

*Jack L. Perry, Ph.D.
Wichita*

Dear Mr. Perry:

Reports such as yours have begun to come in from some of those areas that had prolonged snow cover and cold. The situation last winter was similar to that of 1983-84 when a severe winter followed a hot, dry summer. Quail losses that winter were very high. While I am not specifically aware of the situation in Rice County, the hot, dry conditions that prevailed last summer severely limited seed production of native forbs in much of the state. Those conditions also caused a sharp reduction in row-crop production in many areas.

With what was probably a limited supply of high-energy foods available last fall, quail were vulnerable to potential severe winter conditions. When severe winter weather occurred, it appeared that our fears were realized. Although we all hate to see it happen, periodic severe winter mortality of quail is almost inevitable here in Kansas. Kansas is far enough north and west in the bobwhite's range that winter is bound to occasionally take a major toll. We have had a number of years with mild winters in succession, which may have made some folks forget about the winter vulnerability of our bobwhite.

You are correct in deciding to improve your habitat base to benefit quail. There is no other effective way to minimize quail losses or to help them rebound. I would suggest that, instead of planting eastern red cedars in your CRP, you consider planting native shrubs such as sand plum, American plum, chokecherry, and fragrant sumac. These species provide several advantages over cedars. In winter, they allow warm sunlight to penetrate to ground level while still providing good overhead protection from avian predators.

Also, if you've planted cedars in the grass stand, then you have to go to great lengths to prevent them from being destroyed during a controlled burn in March. All the native shrubs noted can resprout after a burn and, to some degree, burning actually helps keep these shrubs vigorous.

I would recommend planting a relatively drought-resistant variety of corn. With minor exceptions, blackbirds will not significantly damage corn because it is sheathed in a husk. In the fall after the corn is mature, knock it down by driving over it or mowing strips of it with a bush hog to get it down near ground level and to open up the husks.

You might also try some strip discing in your CRP to encourage forb growth. USDA rules for Kansas CRP permit discing up to 10 percent of your CRP in any one year. Discing around the perimeter of your CRP can also produce a good fire break for a controlled burn (every 3 to 5 years). You'll want to contact your NRCS District Conservationist before discing and your local rural fire district before burning.

*-Randy Rodgers, wildlife
research biologist, Hays*



EAVESDROPPERS!

When an individual sat on his cell phone recently, he accidentally called the Osborne County Sheriff's Office and reported his own crime. When dispatcher Deena Hawk picked up the phone, she could clearly hear a conversation between two individuals, but they were obviously not hearing her. Trying to ascertain whether something was wrong, she listened for awhile and heard one of the men say, "This is almost like poaching, isn't it?"

Hawk called a sheriff's deputy who recommended she call Wildlife and Parks Conservation Officer Shane Cathy at Glen Elder State Park.

As soon as she hung up with the deputy, she heard the individuals mention Lebanon [Kansas]. Then she heard gun shots, and one of the individuals said, "You got him!" Two car doors slammed, and that was all she heard, but everything had been recorded.

Because it seemed like the incident was taking place in Smith County, the conservation officer there was notified, and the two individuals were apprehended soon after. Confessions were obtained, and the two were charged with wanton waste, hunting with the aid of a vehicle, and failure to tag a deer.

Although it doesn't happen often, Hawks said cell phone owners will sometimes accidentally hit a button on their phones that will cause it to ring and the sheriff's office. Normally when that happens, the dispatcher can hear the conversation over the cell phone, but the cell phone user cannot hear the dispatcher.

In this particular case, the conversation Hawk picked up was unusually interesting.

- Sandra Trail, Osborne County Farmer

H.E. COMPLIANCE

In an effort to determine rates of compliance with state law requiring hunter education, the Kansas Department of Wildlife and Parks' (KDWP) Law Enforcement Division completed two surveys at various sales locations across the state last winter.

Conservation officers visited predetermined license vendors in their areas and checked the last 10 hunting licenses sold to

individuals who would be required to hold a hunter education certificate. The check consisted of comparing the hunter education number provided on the license to the department's hunter education database. The hunter education numbers provided on nonresident licenses were verified by contacting the state in which the hunter completed the course.

Overall, resident compliance was high. The first survey, held in December of 2000, yielded a 95-percent compliance rate, while the second survey, held in February, 2001, resulted in a 96-percent compliance rate. Almost 1,300 licenses were checked to accumulate the resident statistics.

Nonresident compliance was somewhat lower, with the two surveys resulting in 84 percent and 86-percent compliance rates, respectively. Lower nonresident compliance may be partially attributed to the inability of other states to verify these records.

If the conservation officer was unable to positively match the hunter education number, the license was considered in noncompliance.

A total of 332 licenses were checked in the nonresident survey.

"While these statistics are encouraging, especially for residents, the department will continue to strive for full compliance of all hunters in Kansas," says Kevin Jones, Director of Law Enforcement. "We will continue to randomly check licenses throughout the year, and issue citations to folks who ignore the law."

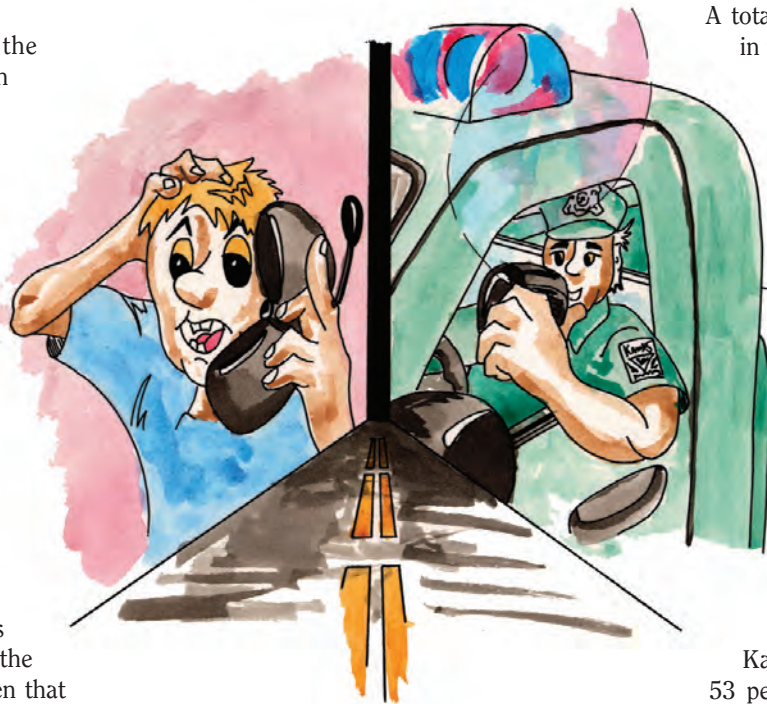
Hunter education is the cornerstone of every state's effort to make hunting a safe and enjoyable sport. In

Kansas, recent statistics reveal a 53 percent reduction in the number of hunting accidents from the 1999 to the 2000 seasons, with only 17 hunting-related accidents and zero fatalities in 2000.

Hunter education volunteer instructors across Kansas spend thousands of hours of their own time training young people in the safe handling of firearms, conservation ethics, wildlife management basics, and other topics. Their efforts have paid off over the years, nurturing not only safer hunters but hunters who are more aware of the needs of all wildlife and who are sensitive to outdoor ethics.

For information on available hunter education courses, visit the department's website at www.kdwp.state.ks.us, or call (316) 672-5911.

--Shoup





CONSERVATION AWARDS

In February, the Kansas Wildlife Federation presented its annual Conservation Achievement Program (CAP) awards for individual accomplishments in Kansas conservation. The awards are as follows:

CONSERVATIONIST OF THE YEAR

Lee Queal

Since retirement, Lee Queal has been effectively working with the Kansas Department of Wildlife and Parks (KDWP), Ducks Unlimited (DU), and others in obtaining a North American Wetland Council Act grant for the McPherson Wetlands. Five key parcels totaling 710 acres were obtained by DU due to Queal's efforts. In addition, two tracts totaling 195 acres will be obtained in 2001. The success of the McPherson Wetlands Project, which currently contains 2,649 acres, is due in large part to the ability and dedication of Lee Queal.

LAND & SOIL CONSERVATIONIST OF THE YEAR

Jim Minnerath

As a veteran employee of the U.S. Fish and Wildlife Service, Jim Minnerath has worked since the early 1990s as the Partners for Fish and Wildlife Program biologist for eastern Kansas.

In the Flint Hills, he has focused the program on best management practices for riparian protection and restoration. These have included fencing riparian corridors to exclude grazing or enable rotational grazing regimes, providing alternative livestock

watering facilities, devising prescribed burning programs, and developing woody species management. Water quality improvements have benefitted the federally threatened Topeka shiner and improved natural communities for a variety of wildlife.

FARMER/RANCHER WILDLIFE CONSERVATIONIST OF THE YEAR

Greg & Mary Anderson

The Andersens operate a 3,200-acre farm in Logan County where they raise wheat, milo, corn, and cattle. In 1995, they were concerned about the decline in pheasant populations. Consulting with Randy Rogers, small game specialist with KDWP, they initiated practices to help, including about 14 acres of grassed terraces and other areas. The Andersens did this work at their own expense.

WATER CONSERVATIONIST OF THE YEAR

Bob Angelo

Angelo has provided technical assistance and input for the Tri-state Mining, Natural Resources Damage Assessment in Southeast Kansas. He also has assisted with the Biocriteria Work Group and ecoregional stream reference sites and stream habitat monitoring protocols. He has provided valuable guidance and encouragement for the Arkansas River Coalition, River Keepers program.

OUTDOOR INSTRUCTOR OF THE YEAR

Gene Brehm

Brehm has consistently served as an instructor in many different venues. These include being the statewide bowhunter education coordinator for KDWP, the archery and wingshooting instructor for the Becoming an Outdoors Woman camp each October, a teacher at the Hunting, Fishing and Furharvesting School for many years, and a teacher of three archery B.O.W. workshops each year. Additionally, he has assisted with the Outdoor Adventure Camp in teaching archery, wingshooting, botany, and other activities.

CONSERVATION EDUCATOR

Michael Campbell

Campbell has been a faithful servant of the Wakarusa Sierra Club serving as secretary and publicity coordinator for the past year and a half. His efforts have allowed the group to promote conservation education to membership as well as the general public. He has helped determine topics and speakers for general meetings, secured venues, arranged for technical support, publicized events, provided transportation, and even baked chocolate chip cookies.

Campbell has helped set up display booths for and devoted much time to such events as Eagles Days. Using his biology background, he has assisted at impromptu hearings and press events.

He has prepared and presented educational talks to schools and other groups about the fauna of Kansas prairies. At the Ernie Miller Nature Center in Olathe, he provides reenactments of Native Americans.

CONSERVATION COMMUNICATOR OF THE YEAR

Suzanne Collins

Collins' collection of more than 14,000 color slides on file with Photo Researchers in New York has turned heads and captured the fascination of kids of all ages.

Collins' work has appeared in books, magazines, posters, and postcards around the world. Some of her more noteworthy products include Peterson field guides, *Kansas Wildlife*, *Kansas Wetlands*, *Amphibians and Reptiles in Kansas*, and a recent poster, "Venomous Snakes of Kansas."

Her writing and editing skills have been directed additionally toward *Amphibians and Reptiles of the Cimarron National Grasslands* and *An Illustrated Guide to Endangered or Threatened Species in Kansas*. For her many contributions to wildlife photography and various books and writings, she has even been recognized by the Kansas House of Representatives.

Collins has assisted with natural history and wildlife photography trips for students and volunteered her time for numerous schools, camps, and nature centers across Kansas.

FOREST CONSERVATIONIST **Richard Counce**

Counce has worked as a Soil Conservation Technician in the Natural Resources Conservation Service (NRCS) field office in Dodge City since 1987. Throughout his career he has actively promoted planting trees in Ford County. By promoting farmstead and field windbreaks as well using woody species in wildlife plantings, his efforts have resulted in tens of thousands of trees being planted.

CONSERVATION ORGANIZATION **Green Team**

The Green Team of Western Resources, Inc., is celebrating its tenth anniversary with the completion of more than 400 grassroots environmental projects. The Green Team has engaged more than 600 employee volunteers, promoting environmental considerations into daily business decisions.

Their wildlife programs include constructing raptor rehabilitation pens, installing and monitoring American Kestrel nesting boxes throughout Kansas, developing employee training on injured raptors, and creating the first corporate-backed Raptor Runners group in the nation. They are involved in re-introducing golden eagles and ospreys in Kansas.

STREAM MONITOR **Alison Reber**

As the education coordinator for the Kaw Valley Heritage Alliance (KVHA), Reber works to promote greater awareness, appreciation, and stewardship of the cultural and natural resources of the Kansas River Valley. She has developed and implemented StreamLink, a K-12 program for better water quality understanding. Reber designed StreamLink components for this purpose. Through her efforts, StreamLink is fast becoming an

important water resource instructional tool within the K-12 science curriculum.

CONSERVATION LEGISLATOR OF THE YEAR **Sen. Pat Roberts**

Senator Roberts was recognized by the Kansas Wildlife Federation because of his effective work to ensure that grassing terraces are a part of the Continuous Signup of the Conservation Reserve Program (CRP). Additionally, Roberts has been an early and consistent supporter of the Conservation and Reinvestment Act, an effort to supply long-term funding for wildlife conservation.

WILDLIFE CONSERVATIONIST **Joyce Wolf**

Wolf has been active in the Jayhawk Audubon Society since 1982. She has led efforts to secure funding for Cheyenne Bottoms Waterfowl Management Area restoration efforts and acquisition of McPherson Wetlands. One of her proudest achievements was winning reinstatement of the special funds for these purposes. She has also been active with conservation efforts for Baker Wetlands in Lawrence.

YOUTH CONSERVATIONIST OF THE YEAR **Sherri Fernkopf**

As a senior at Jackson Heights High School, Fernkopf has been active in conservation since early childhood. This includes assisting her father in his conservation farming practices. Besides being a part of maintaining wildlife brush piles on their farm, Fernkopf has helped plant oak, walnut, and evergreen trees. She has helped hand pick seed heads from eastern gamma grass to plant in additional areas.

At school, she is active in several areas, including Future Farmers of America, helping to set up a display of stream team test data for Banner Creek Lake, and using some of this information to educate third-graders on the water cycle and water pollution.

-Shoup

WILD TURKEY REBOUND

Once found in incredible numbers, by the Great Depression, only 30,000 wild turkeys remained.

Turkey populations slowly rebounded to roughly 1.3 million birds throughout the United States by 1973, the year the National Wild Turkey Federation (NWF) was founded. Since then, that number has more than tripled and now stands at 5.4 million birds thanks to the efforts of the NWF, its members, public and private partners, and state and federal wildlife agencies. Today, turkeys are one of the most popular game species in the U.S., with close to 2.6 million turkey hunters.

Since its inception, the NWF's conservation partners and grassroots members have raised more than \$130 million for projects benefitting wild turkeys throughout North America. The group started with 1,300 members in 1973 and has grown to 315,000 today. Kansas boasts twenty-three chapters and more than 2,500 members.

NWF's popular Women In The Outdoors program is designed to introduce more women to outdoor activities, train women as outdoor educators, and provide a network for men and women with similar outdoor interests. Two Women In The Outdoors events are scheduled in Kansas this year - May 6 at Rock Springs 4-H camp in Junction City and in late September at the Ringneck Ranch in Tipton. For more information, contact Becky Johnson, women's regional coordinator, at (785) 257-3335.

NWF also focuses on young people. Their JAKES program is dedicated to informing, educating, and involving North America's youth in wildlife conservation and the wise stewardship of our natural resources. With a growing number of turkey hunters, the JAKES program is also designed to help pass on the traditions of hunting with a strong eye toward ethics and safety.

Visit the NWF website at www.nwtf.org or call 1-800-THE-NWTF for membership information.

-Chad Luce,
public information officer, Topeka

TUNING YOUR COMPOUND

—Gene Brehm,
Bowhunter Education coordinator, Pratt



Whether you're preparing for the challenge of hunting antelope with a bow or getting an early start on the fall deer season, bow tuning is a crucial element in successful archery.

First things first

The first step in tuning your bow is to set tiller. Tiller is the distance between the string and the bow's limbs where they meet the riser. Consult the owner's manual that came with your bow for information on tiller settings and measuring.

Archers who shoot compound bows using release aids should begin by setting both the top and bottom tiller distances the same. For archers who shoot with their fingers, the bottom limb and the string tiller distance should be about 1/8 inch less than the distance between the top limb and the string. To decrease tiller on the bottom limb, tighten the bottom limb bolt. To increase bottom limb tiller loosen the bottom limb bolt.

Tune the tiller

When tiller adjustments are being made, it is best to set the poundage (draw weight) of the bow. Set the weight at the poundage at which you choose to hunt and **leave it there**. Most archery shops have a

scale to measure draw weight. The draw weight is changed by turning the limb bolts clockwise (more poundage) or counter clockwise (less poundage). Turn each limb bolt only one full revolution at a time before turning the opposite limb bolt.

Take a rest

If a rest is not already installed, purchase a rest that will allow total fletch clearance. A rest should allow the fletchings of the arrow to pass forward when shot and not brush either the rest or the riser of the bow. A rest that adjusts both horizontally and vertically in calibrated increments will save time and frustration when tuning arrow flight.

Nock, nock

Once you have installed a rest, you are ready to determine your arrow nocking point. Place a bow-square on the bowstring so that the arm of the square lays on the launcher arm(s) of the rest exactly where the bottom of an



arrow would lay. Using the rule on the bow square, locate the spot on the string 3/16 of an inch above the bottom of the arrow line. (Archers shooting small-diameter carbon arrows may use smaller increments.) Crimp a metal nock set just above this spot (Archers who shoot a string loop should center the string loop 1/8 of an inch above the bottom of the arrow line).

Vane clearance

Next, purchase a can of aerosol foot powder and spray the fletched area of an arrow shaft until all fletchings are covered with the white powder. Without touching that area, nock the arrow on the bow's string, and from a distance of five yards or less, shoot the arrow into a safe backstop.

After the shot, check to see if the powder has been rubbed off any of the fletching. If so, the nock must be turned to allow the fletchings to pass through the rest properly. Respray the fletching and load the arrow on the bow again and "eyeball" the relative position

of the vanes to the rest prongs. Make an educated guess as to which direction and how much to turn the nock. If the nock is glued on, cut it off and replace it but do not glue it. Repeat the process until no powder is brushed from the fletching. Turn the nocks on all your arrows to match this position.

Paper tiger

Most archery shops will have an apparatus to hold tuning paper for this purpose. A properly tuned bow will show three fletching tears with a point in the middle. Paper-tune with field points.

Shoot through the paper from about 5 or 6 feet. If the fletches are tearing a hole above the point's entry, lower your nock set on the string. If you have a vertical adjustment on the rest, raise the rest. If the fletching tears are below the point's entry, raise the location of your nock set or, better, lower the rest.

If tears show that the point is left of the fletching tears, the rest must be moved closer to the bow's riser. If the point tear is right of the fletchings' tears, the rest should be moved farther from the riser. Following these tips should eventually lead to your arrows tearing a perfect hole in the paper.

You may now reset your sight pins using a broadhead.



THE PUPPY LOVE CONSPIRACY

by Mark Shoup



Last winter, an office puppy conspiracy started when our webmeister, Dan Eastes, slammed the door between our offices one day. At first, I just figured she was having a bad hair day and didn't want any comments from the Peanut Gallery. But the more I thought about it, the more I realized that Dana couldn't care less about the Peanut Gallery. She's got Gypsy blood. Perhaps she suspected that I was the one who put the dead minnows in the bottom drawer of her desk the week before.

Then I began to hear funny noises from her office, which she shares with our graphic artist, Dustin Teasley. There was a crash, as if someone had knocked over a drawing table, followed by ticklish giggling. While we enjoy our work around here, ticklish giggling is not common, so I crept to the door and cracked it open. There was Dana, kneeling on the floor with an eight-week old yellow Lab licking her face. She had brought one of Dustin's pups.

It was a disgusting scene, the little fur ball happily bouncing around its new mistress without a care in the world and Dana rolling the pup across the floor, ruffling its ears and face, and the pup coming back for more.

I quickly joined in. For the next 10 minutes, I forgot myself and rolled, scratched, patted, and just rough-housed with "Cotton."

"You better get yourself one," Dana advised with an ornery glint in her eye. Suddenly, I came to my senses.

"I don't have TIME for a dog," I explained. "I have two boys, a wife, pigeons, and a lawn the size of Delaware."

"I have *three* boys and a HUSBAND," she retorted, still grinning.

I left the room and closed the door behind me.

Dana didn't bring the dog back to work for some time, so I dismissed my response to the pup as a sort of temporary insanity - the kind that makes grown men buy bass boats they can't afford. I had escaped with my health intact.

This event soon forgotten, and our two offices once again became a travel lane for prowling wildlife information types. But no sooner had my emotional state been restored than I heard another commotion from Romper Room. Witlessly curious, I cruised in to find our photographer, Mike Blair, ruffling the hair of a fuzzy little chocolate Lab. Blair hasn't had a dog since I've known him - more than 12 years - so now I'm wondering what the heck is going on.

Wondering, that is, for about two seconds. I still can't explain this reaction, but I suddenly found myself on the floor with a wiggling little critter who acted like I was a long lost friend. I started growling and grabbed its little muzzle and shook it, then let her go with a playful push. She bounced back, and I rolled over and actually let her scramble over my chest as I fended off the razor-like teeth and nuzzled her behind the ears.

Blair broke this spell with a sharp command, "Java, sit!" Java, intent on getting at my nose, apparently didn't know what "sit" meant. I didn't want to undermine Blair's authority, so I got up and gently pushed the

pup away, straightening my shirt and attempting to regain my composure. Meanwhile, Blair pulled the dog to the side, sat her down, and commanded with great authority, "Sit!"

The dog actually sat for a few seconds, which prompted our intrepid photographer to proclaim, "I'm telling ya, buddy; this is gonna be a good one." *Another proud parent*, I thought. *What business does he have with a puppy, as busy as he is?*

I retreated to my room and closed the door again, slightly shaken. Perhaps it was my imagination, but I swear I could hear whispering from the other room. I stuffed a CD in my computer and began pounding my keyboard to the rhythm of Credence Clearwater.

Over the next few weeks, I became convinced of a conspiracy. Blair spends a good deal of time in the field, but he's in the office frequently. He often drops by my room. Not long after this latest doggy episode, I glanced down from my computer screen to see a friendly face looking up at me with big brown eyes, tail wagging in recognition. *Oh man, this can't be happening*, I thought, but my hand reached down and began scratching Java behind the ear.

Such encounters became frequent over the next few weeks. I actually came to enjoy the little visitor dropping in because I knew Blair could give the pup all the attention she needed just by taking her afield while photographing. For me, it was kind of like being a grandparent.

My complacency was soon shattered, however, when one morning the infamous graphic arts room erupted with sweet, melodious coaxing. "Come here, boy," I heard Dana call. Thinking she had brought her now adolescent pup to show off, I entered the room with the false confidence that my affectionate yearnings could no longer be manipu-

lated.

This time, however, it was Miller. Yes, our steadfast editor, Mike Miller. With Dustin, Dana, and Blair, he formed the final link in a circle - literally and figuratively - of entrapment that had begun months earlier. In the middle of this gang stood the most perfectly conformed black Lab puppy you have ever seen. He looked like he had come right off the cover of Ducks Unlimited magazine.

Without hesitation, I was on my knees again. And again, a soft, smiling puppy was all over me. Miller explained in detail how he had planned to get the pup, how he had picked a sire he knew well and paid the stud fee for the pick of the litter, and most of all, how he had made that pick. "It was incredible," he explained. "All the other pups would play with me for a little while, then go back to playing with each other. This little guy just stayed right with me from the beginning."

Alright, Miller, I thought. *You're in on this, aren't you?* I needed help and quick. I looked at Dana, but she just gave me that impish Gypsy grin. I looked to Blair, but he shrugged his bear-like shoulders. Miller was all logic, as if nothing were amiss.

I needed air, and it was quitting time, so I punched out for the day. On the way home, a devil sat on my left shoulder and an angel on my right, each whispering in an ear at the same time: "You want a puppy! Get one!" "No, you don't have time for a puppy! They're too much work!"

Calmer when I got home, I slammed the door behind me and fell back against it with a sigh. Then my youngest son, Will, shuffled into the kitchen with a forlorn look.

"Dad," he said mournfully, "I want a puppy."

The snare, I knew, was about to trip.

LIMITS VERSUS TROPHIES

Limiting harvest will rarely produce a trophy fishery. For example, Coffey County Lake (5,000 acres) was closed to all fishing for 15 years.

The department worked with Wolf Creek to open the lake to fishing in 1996. There were many anglers who were sure that the lake had to be full of state record fish. However, what was really there was a stock-piled walleye fishery, some nice above-average bass and wipers, and some other species. There were nice size fish in there, but it was not a trophy lake.

In fact, the State of Missouri came to

Kansas to evaluate the white bass at Wolf Creek, so they could compare their fished white bass populations to a lake that was unfished. They couldn't find any significant difference between the two types. For many short-lived species like white bass and crappie, catch and release just means that no one will ever eat the fish and the fishing won't really be that much better.

For bass populations, some harvest restriction is necessary to maintain good fishing, but implementation of too large a length limit or a no-harvest policy usually results in stockpiling and slow growth. That's why we have slot limits that promote the harvest of some smaller

fish in order to allow the larger fish to grow for some waters with high recruitment and a moderate forage base.

In order to provide trophy fish, the density of a given species needs to be controlled to ensure fast growth. You don't see that on unfished waters very often.

This is one of the most common misconceptions of anglers – the idea that the only way a fish leaves a fishery is through harvest by anglers. In fact, the largest impact is from natural mortality on all but the most heavily fished waters.

–Doug Nygren Fisheries
Section chief, Pratt

Walleye World

May and June are prime months for catching many species of fish, but it's especially true for walleye. It's a period when hungry fish are aggressively searching for food after the stress and rigors of spawning a month or two earlier. While bank anglers have access to walleye during spawn, boat owners have an advantage in late spring.

Cheney, Lovewell, Webster, Kirwin, El Dorado, Hillsdale, Marion, and Glen Elder reservoirs all rank high for walleye potential.

The methods to catch walleye may change from May to June. In early May, anglers rely

on electronic fish finders to search for walleye in deep water. Creek or river channel dropoffs with brush, channel bends or intersections, and old roads or home sites may hold walleye. With sonar equipment and a lake map, these places can be found

and marked with a floating marker. Water temperature and clarity, as well as concentration of bait fish, will dictate depth – vary from 10 to 30 feet.

Fishing in deeper water is most often done vertically. If the wind isn't

howling, boat anglers can position themselves near their marker and simply lower their baits to within a foot or two of the bottom and stay in position using the trolling motor. However, as is the case a majority of the time in Kansas, the wind requires anglers to anchor in order to hold over the structure. A high-quality anchor that will hold the boat in a stiff wind is invaluable.

As the water warms in May, fish begin to move out of deep water to feed on young-of-the-year bait fish aquatic and insects. Walleye are typically found in shallow-water brush, off subtle breaks, or dispersed on large, shallow mud flats. They feed aggressively and are often

easier to catch in May than any other time of year. Depending on wave action and light penetration, walleye will usually be in water less than 10 feet or less.

Shallow water fishing is commonly done by drifting, using the trolling motor or drift sock to control the drift speed and keep baits near the bottom. This method covers a lot of water, but anglers should make a mental note or mark an area where they catch fish and target that area each drift. If fish are pinpointed, anchor and cast.

People who enjoy trolling also benefit from this shallow water feeding frenzy. Crankbaits are trolled over these same areas, and anglers should note what depths their baits are designed to reach. Hot-n-Tots, Thin Fins, Rattle Traps and many others are used to trigger a strike.

Natural baits are most effective for walleye this time of year, and they aren't complicated. Early May might

find anglers using a jig-and-minnow, but most prefer a jig-and nightcrawler combination. The preferred bait doesn't change in June or when fishing vertically versus drifting. The important thing to remember is to make sure the jig head has enough weight to keep the bait on or near the bottom. Popular colors of various style jig heads include chartreuse, pink, orange and white.

Walleye bites come in two forms. The "grab and go" bite finds anglers scrambling for their poles before they leave the boat. But more often than not, the fish aren't aggressive. Drop the rod tip when a bite is detected and let the fish hold the bait without resistance. Slowly raise the rod tip and upon feeling a steady pull, cross his eyes with a good hook set.

If fish aren't biting in one spot, don't hesitate to try another or change depths and tactics.

– Marc Murrell, information specialist, Wichita



Ultralight Cranes

In the first phase of an ambitious effort to re-establish a migratory population of endangered whooping cranes in the East, ultralight aircraft took off from a national wildlife refuge in Wisconsin last year, leading a flock of sandhill cranes on an experimental migration that could pave the way for similar flights with whooping cranes in the near future.

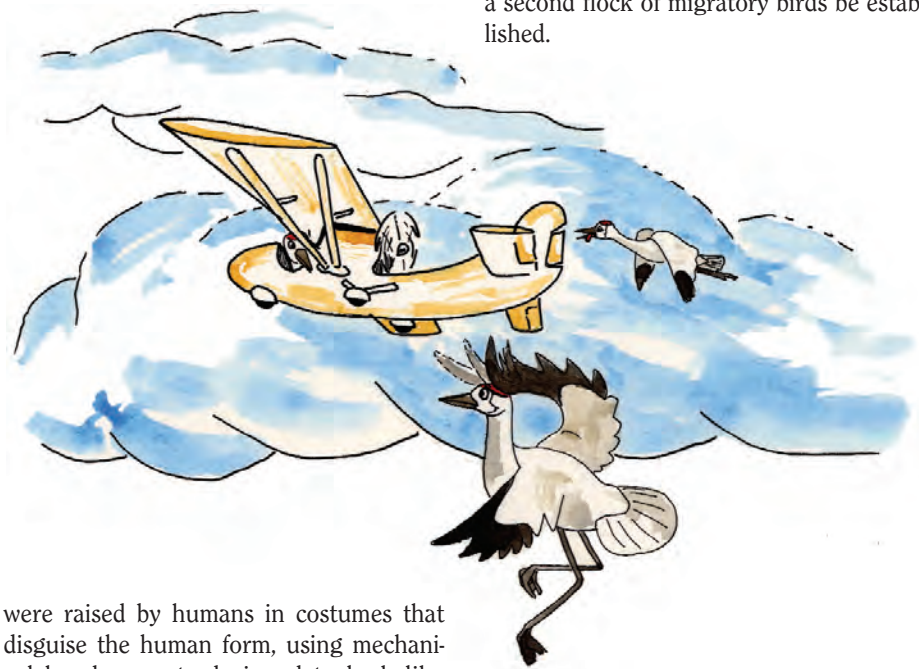
The 13 sandhill crane chicks have been exposed to aircraft noise by researchers since hatching and reared in extreme isolation from humans at Necedah National Wildlife Refuge in Wisconsin. After undergoing months of specialized handling designed to get them accustomed to following the ultralight aircraft, the birds are beginning a journey through seven states that will take them to their wintering grounds at Chassahowitzka National Wildlife Refuge in Florida.

If the migration study is successful, and the birds complete the journey to Florida and return on their own to Wisconsin in the spring of 2001, the same training procedures and route will be used with whooping crane chicks as part of the second phase of the study. If all goes as planned and necessary approvals are obtained from the Flyway Councils, states, and other involved agencies, the study could eventually lead to the re-establishment of a migratory population of whooping cranes in the eastern United States.

The migration followed the established eastern sandhill crane migration route, passing through Wisconsin, Illinois, Indiana, Kentucky, Tennessee, and Georgia before arriving in central Florida. The unusual crew of migrants covered 50 to 70 miles per day en route to Chassahowitzka National Wildlife Refuge. Ultralight aircraft were used because they fly at low altitudes and at speeds slow enough to lead migrating birds.

Reliance on humans jeopardizes the ability of any wild animal to survive on its

own, and whooping cranes are especially vulnerable because of their small population. In order to test and establish methods that can be used with whooping cranes, every effort was made to restrict the sandhill cranes' contact with humans in order to prevent the birds from becoming too tame and relying on human care for their survival. The sandhill cranes



were raised by humans in costumes that disguise the human form, using mechanical hand puppets designed to look like adult sandhill cranes. The birds have never seen the pilots of the ultralights out of costume. These restrictions on human contact continued during the birds' migration and will with the whooping cranes in the near future.

Whooping cranes were probably always rare, with a population estimated at 500 to 700 individuals in 1870. Nonetheless, they ranged across North America from Utah to the Atlantic Coast, breeding in central Canada and the northern U.S. and wintering from the Carolinas to Texas. As a consequence of unregulated hunting, specimen collection, human

disturbance, and destruction of their primary nesting habitat, the whooping crane population faced extinction by 1941, with only 21 birds remaining.

Today, after decades of captive breeding and the 1993 reintroduction of a non-migratory population in central Florida, there are 411 whooping cranes in North America, with 266 of those birds in the wild. Of these, there is only one remaining migratory flock of 187 whooping cranes in the wild, migrating between Wood Buffalo National Park in the Northwest Territories of Canada and Aransas National Wildlife Refuge in south Texas.

The Endangered Species Act recovery plan for the whooping crane requires that a second flock of migratory birds be established.

The Whooping Crane Eastern Partnership, comprised of the U.S. Fish and Wildlife Service, the International Crane Foundation, Operation Migration, the Wisconsin Department of Natural Resources, the U.S. Geological Survey's Patuxent Wildlife Research Center, the International Whooping Crane Recovery Team, the Natural Resources Foundation of Wisconsin, and the National Fish and Wildlife Foundation was formed in October of 1999 to coordinate the ultralight migration study.

-U.S. Fish & Wildlife Service

H.E. ACADEMY

Coming off a record low number of 19 hunting accidents in Kansas last year, what could the Kansas Department of Wildlife and Parks' (KDWP) Hunter Education Program possibly do for an encore? How about designing the first-ever Advanced Instructor Academy, soliciting the commitment of expert instructors and guest speakers, and persuading more than 200 volunteer instructors to sacrifice a weekend?

Such an academy was conducted on March 23-25 at the National Guard Training Center in Salina.

The event kicked off at 7 p.m. on Friday, March 23. The keynote speaker for the evening was author David Peterson. Peterson challenged hunters to promote irreproachable behavior in the outdoors, noting that as a group, they are under a public microscope and often suffer from public misconceptions drawn from the careless or irresponsible behavior of the few.

During the next day and one-half, students were separated into three groups for half-day sessions. Colorado State University Professor Dr. Dell Benson conducted a four-hour session on techniques for teaching ethics and responsibility to hunter education classes.

In another four-hour session, KDWP attorney Chris Tymeson covered legal liability issues affecting hunter education instructors; master instructor Dana Bergsten gave tips for classroom organization; Ed Augustine, Junction City area hunter

WATER WORKS WONDERS

Recreational boating and fishing are among this country's favorite pastimes. More than 50 million Americans enjoy these activities and the aquatic resources that support them. However, after years of steady growth, recreational boating and fishing participation rates have not kept up with the nation's population growth and recent economic prosperity. If fishing and boating traditions and their related stewardship ethic are to grow and be passed on to future generations, these trends must be reversed.

Stewardship is based on valuing natural resources, and avid boating and fishing enthusiasts are often among those who most value the aquatic environment. In addition, recreational boating and fishing contribute to conserving aquatic resources through excise taxes on fishing equipment and motorboat fuel that fund the Federal Aid in Sport Fish

Restoration Program. This program, coupled with fishing license sales, makes up 83 percent of the funding for state fisheries programs.

To increase participation in fishing and boating and to complement ongoing conservation efforts by the states, the Recreational Boating and Fishing Foundation has created the Water Works Wonders program. This internet website -- WaterWorksWonders.org -- tells anglers how and where enjoy the water. Here, anglers can click on headings to find a world of useable, fun information that will make boating and fishing experiences easier to plan and even more enjoyable.

Heading categories include the following: Where To Fish, Learn To Fish, Identifying Your Catch, Get A Fishing License, Where To Boat, Learn To Boat, Register Your Boat, Family Fun, and Check Out What's New. For more information, phone 1-888-570-3900

-Recreational Boating and Fishing Foundation



education coordinator, gave an outdoor presentation on informal ranges, including a portable clay target trap; and master instructor Ray Fisher and instructor Ted Billingsley provided details on setting up an outdoor hunter education trail walk.

Saturday evening, participants were treated to clay target shooting under the lights.

A third half-day session gave participants the chance to quiz Peterson on his ethics philosophies and ways

to communicate these ideas to the general public.

After dinner on Sunday, Barth Crouch, executive director of Pheasants Forever, presented Doyle with a check for \$12,000 for a Laser Shot simulated shooting system.

"Instructors are required to have three hours of training every three years," Doyle said. "This consolidates subjects and immensely improves the training that instructors get. I'd love to do it again, maybe every

other year if the funding is available."

-Shoup

F.I.S.H. ATLAS

The FISH 2001 Atlas is now available for viewing and download from the Wildlife and Parks website. More than 1,300 acres of water and 60 stream miles are enrolled in the FISH program this year. The 2001 Fishing Forecast is also available. Properties are open March 1-Oct. 31.

Fishing regulations may also be downloaded from the website, and weekly fishing reports are posted. Some 400 pages of valuable information on fish, wildlife, parks, and outdoor education may be found at www.kdwp.state.ks.us.

For additional information on statutes, regulations, licenses, permits, and boat registration renewals, contact the Kansas Department of Wildlife and Parks at (316)672-5911, or e-mail feedback@wp.state.ks.us.

-Shoup

FREE PARK & FISH DAYS

Never been to a state park? May 5-6 is the perfect time to find out what you've been missing. On those days, there will be no vehicle entrance fees in Kansas state parks, so come join the fun. (Overnight camping fees still apply.)

Another great outdoor deal is Free Fishing Days. On June 2-3, Kansas anglers will not need a fishing license. This is a great opportunity to introduce someone to fishing.

-Shoup

CONSERVATION COMICS

Spring brings new growth all around us. Spring also nurtures the growth of kids' knowledge as they observe nature in their own yards. For conservation educators, the National Association of Conservation Districts has two new tools to help you cultivate a better understanding of nature. They're comic books, believe it or not.

The comics help kids learn about wildflowers, native plants, and soil. These entertaining tools present basic information designed for children in grades 3 through 7, encouraging them to observe and discover more in their backyards, parks, and schoolyards.



HMM...MAYBE IT'S TELLING US WE'RE ON THE RIGHT TRACK WITH OUR SEARCH.

LET'S KEEP GOING. TELL US ABOUT SOIL AS A HABITAT!

SOIL IS AN AMAZING HABITAT. AN INCREDIBLE NUMBER OF LIVING THINGS MAKE THEIR HOMES IN AND AROUND SOIL. STEP IN AND TAKE A LOOK.

YAH! WHAT HAPPENED? DID WE SHRINK?

DON'T WORRY, DAD'S LABORATORY CREATES A TOTAL SIMULATION OF AN ACTUAL SOIL ENVIRONMENT. CONVINCING, HUH?

HERE ARE JUST A FEW EXAMPLES OF LIVING THINGS, OR ORGANISMS, FOUND IN SOIL. **MACRO** MEANS BIG, AND **MICRO** MEANS SMALL. **FLORA** MEANS PLANTS. **FAUNA** MEANS ANIMALS. SO WE CAN NAME FOUR GENERAL CATEGORIES OF SOIL LIFE. READ THE NUMBER BESIDE THE NAME OF EACH ORGANISM AND FIND IT IN THE SOIL.

Macrofauna - Animals we can see without a microscope.

1. Mole - Other soil mammals include shrews, moles, rabbits, gophers, foxes and badgers.
2. Salamander - An amphibian.
3. Snake - A reptile. Lizards and turtles are also reptiles.
4. Nematode - One of a large variety of worms without segments. Most nematodes are parasitic.
5. Slug - A mollusk. Snails are also mollusks.
6. Earthworm - Has segments. Very important for turning soil.
7. Ant - An insect that lives in large groups - can several dozen pounds of ants for every pound of human.
8. Beetle and Grub - An insect. There are more types of beetles on Earth than all other animal species combined. Grubs are beetle larvae.
9. Springtail - Primitive wingless insect.
10. Spider - An arachnid.
11. Sowbug or wood louse - The only land crustacean life class of animals including crabs and lobsters.
12. Centipede - Force predator with venomous biting organs.

Microfauna - Plants and fungi we can see without a microscope.

13. Protozoa - General name for single-celled primitive animals.
14. Plant roots - Affect soil and living things there.
15. Mushroom - A visible fungus. Many fungi are microscopic.

Microflora - Plants and fungi too small to see without a microscope.

16. Bacteria - Single cells that live in colonies. May be 1 billion in a cubic centimeter of good soil.
17. Fungi - Largest portion of soil microflora. Have complex networks like threads. Include molds and yeasts.
18. Actinomyces - Single cells in colonies like bacteria. Interwoven networks like fungi. Smell of freshly dug earth comes from them.
19. Algae - Have chlorophyll. Need light to make food.
20. Viruses - Smaller - may be 20 times smaller than bacterial. Usually found inside other organisms.

One comic, *Wildflowers and Native Plants*, introduces youngsters to flower structure, types of flowers, and pollination. The characters in the story learn -- from talking plants -- the difference between a native plant, or wildflower, and introduced plants. Kids also discover why a native plant is easier to grow and conserves water, why a wildflower is not always a weed, and how to encourage native plants in their own backyards.

In the next comic book, *Search For Soil*, kids find much more than just dirt. Comic book characters discover the structure of soil, how soil helps everyone, and the many kinds of life found in soil. Here,

you can enter "Dad's Lab," where you shrink to the size of an earthworm and observe the critters in the soil up close and personal. See how soil constantly changes, how it erodes, how people can protect soil, and how to conserve soil in your backyard.

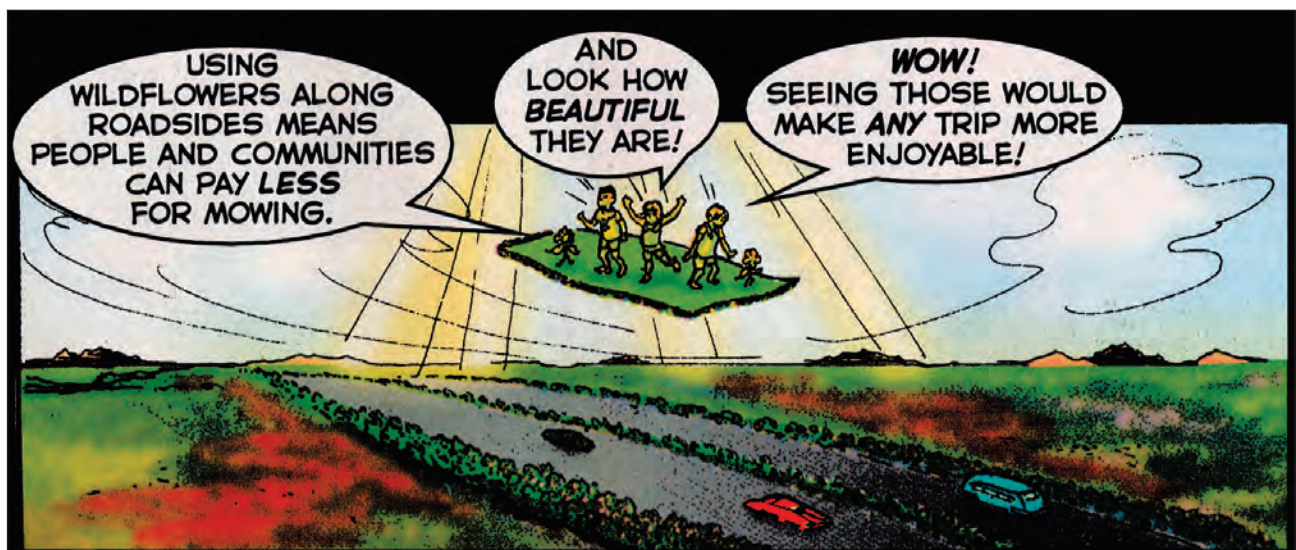
These colorful, humorous, and entertaining comic books make learning fun. They not only reveal natural mysteries, they give you secrets to uncovering these mysteries for yourself, whether you live in town or in the country.

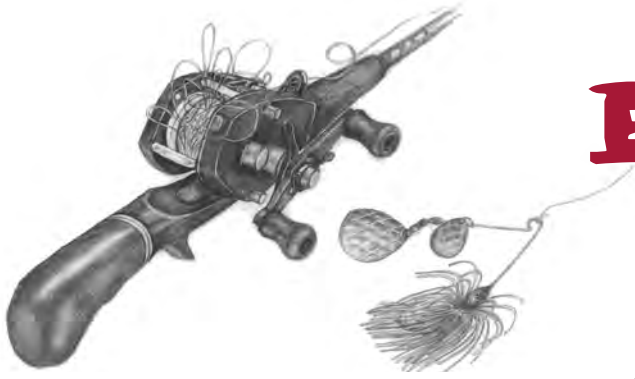
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Backlash

by Mike Miller

Waiting For The Wind To Die

As I write this, I've actually been forced inside by the wind. It's spring, and there should be fish biting somewhere, but I honestly think the wind is blowing too hard to cast a lure. Heck, while I was forced to be outside, working, the wind blew so hard I had trouble just standing. A full can of soda would slide across the table if left unattended. Anything not staked down became a dangerous projectile. It was quite possibly the hardest wind I've been in for that length of time. The weatherman, who had inaccurately forecast 15-30 mph winds, is now saying that sustained winds are 30 mph, and gusts are hitting 50-60 mph. For once I believe him. He can sometimes predict the weather as it's happening.

So here I sit waiting for the wind to die. No, I don't mean subside. I mean die. I want it dead, gone, deceased, extinct. I know there are some positive things about wind, but right now I can't think of any.

I remember back to my youth, sitting in church on a warm spring Sunday morning. I would occasionally sneak looks through the stained glass windows to see how hard the wind was blowing. I had plans of fishing later that afternoon, of course. And I had a method of measuring wind velocities from inside church. I focused on the tops of trees and watched the motion of the branches. Obviously, I was hoping for no motion, but that was rare — so rare that when it happened, it might be taken as a forewarning of something ominous — perhaps a violent thunderstorm, this being the calm before the storm. But I would settle for slow, rhythmic waving in the limbs. Wind velocity that simply made the treetops slowly wave was tolerable for a bike ride to the lake and an afternoon of fishing.

More commonly, though, the treetops would lean hard to the north, staying bent for moments before snapping back, then lean hard to the north again. This more violent motion was the wind I dreaded. These were spring winds that basically made the outdoors inhospitable, and definitely ruled out fishing, at least in the flat land of southcentral Kansas. But I persisted, watching the treetops and hoping for the wind to calm.

Now I want it to die.

I still use that method of measuring wind velocity. As I drive to the lake, pulling the boat, and again hoping for light winds, I'm constantly looking at the treetops. If I've left early, there can be a false sense of optimism because the wind is usually calm in the early morning, luring me out. But as I get nearer the lake, I focus on anything that the wind can move, weeds, grasses, flags, windmills, and of course treetops. By the time I get to the lake, I'm usually depressed, and the whitecaps that decorate the water's surface don't even phase me. By then I've usually come up with an alternate launch site — wind and waves make unloading and trailering a boat tough, and something usually gets broke. I'm conniving against the wind, trying to plan an approach that will keep me out of the wind as much as possible. In all but a few Kansas lakes, this is a futile strategy.

So, just to make me feel better, I'm writing the wind's obituary. I'll keep it in a safe place just in case.

KANSAS — Wind, eons old, particularly obnoxious force of nature that spent its career ruining outdoor events, blowing over trees and making humans feel insignificant, died (date to be added on the occasion). No service will be held, but there will be a large party attended by all who will now be able to enjoy outdoor activities in Wind's absence.

Survivors: companions, occasional light breeze, rain, sunshine, lightning, and other various forces of nature.

That's it, no memorial or sorrow, just good riddens. I'll be at the party. In fact, I'll bring the sodas. And we can have paper plates, because they won't blow away, and chips will stay on the plates. It will be a great party. But, as I'm planning this, I'm thinking the party will have to be BYOBD (bring your own bug dope) if we have it in the spring or summer. I guess I can think of one good thing about the wind. Oh well, bring lots of extra-strength mosquito repellent, and we'll have a grand old time. Oh yeah, don't forget your fishing pole. ♡

