

# KANSAS

*Wildlife & Parks*

SEPTEMBER/OCTOBER 2007

\$2.75





# On Point

by Mike Hayden



## Make a Difference, Make A Hunter

There's an old saying that "It takes a hunter to make a hunter." And most hunters would agree with that. Sure, you can learn about hunting through magazines, books, videos and television, but to really get hands-on experience, there's nothing like learning in the field from an experienced mentor.

Most of the current generations of hunters probably learned to hunt by following and watching their parents and grandparents in the field. Family is important in the hunting heritage. Hunts are scheduled around traditional opening days or holidays when families can get together. To many, the social aspect of the hunt is as important as the hunt itself.

Unfortunately, many of today's youngsters aren't getting a chance to learn about these traditions. It's a simple fact that our Kansas population is becoming more urban every year. And it doesn't take very long for families that move to lose touch with the rural people and traditions they may have enjoyed. Also, the urban lifestyle provides a dizzying array of pas-time options.

The end result is a reduction in the percentage of our population who hunt. Naturally, the Kansas Department of Wildlife and Parks is concerned. Wildlife management in Kansas is paid for by hunters. Without hunters who purchase licenses, stamps, and permits, there would be very little funding for managing any wildlife. But there are other compelling reasons to be concerned.

In my opinion, there are few activities that strengthen parent/child relationships as well as teaching and mentoring young people about hunting and the outdoors. Teaching outdoor skills such as firearm safety, marksmanship, archery, wildlife natural history, and hunting techniques requires direct, one-on-one interaction. Youngsters respond positively to that kind of attention. Obviously, not all young people will take to hunting. Out of any group,

there will be some who immediately decide that hunting is the best thing they've ever done and become avid hunters. A few will enjoy it and casually pursue it later in life. And others will simply enjoy the experience but decline to participate later. However, all will benefit, and all will be exposed to their outdoor world in a way that helps them understand it and appreciate it. They will understand the hunting tradition, and they will be more likely to be involved in matters of conservation later in their life.

We can all make a difference in a young person's life by showing them how much hunting and the outdoors means to us. As part of the Pass It On program, youth seasons have been established. These special seasons provide outstanding opportunities to get youngsters in the field for uncrowded, quality outdoor experiences. Hunting pressure on public hunting areas is light during the youth seasons, so access isn't a problem. Take advantage of a youth hunting season this fall and help make a hunter.

Dove season opens Sept. 1, and while there isn't a special season, some wildlife areas will have special dove fields open only to young hunters. Sept. 29-30 is the youth deer season. Youth 16 and younger who possess the required permits and licenses can hunt deer under the direct supervision of an adult. The youth waterfowl seasons are: High Plains Zone - Sept. 29-30, Early Zone - Oct. 6-7, and Late Zone - Oct. 20-21. And Oct. 28-29 is the youth pheasant and quail season. Nearby wildlife areas or state parks may be hosting special youth hunts. Contact your nearby KDWP office to find out.

There has never been a better time to introduce Kansas youngsters to hunting. And with all of the negative influences in our young people's lives, getting them involved in an outdoor activity could make an enormous difference in their lives - today and tomorrow.

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KANSAS WILDLIFE & PARKS (ISSN 0898-6975) is published bimonthly (every other month) by the Kansas Department of Wildlife and Parks, 1020 S Kansas Ave., Topeka, KS 66612. Address editorial correspondence to Kansas Wildlife & Parks Magazine, 512 SE 25th Ave., Pratt, KS 67124 (620) 672-5911. Send subscription requests to Kansas Wildlife & Parks Magazine, P.O. Box 8059, Red Oak, IA 51591. Subscription rate: one year \$10; two years \$18; and three years \$27. Articles in the magazine may be reprinted with permission. Periodical postage paid at Pratt, KS and additional mailing offices. POSTMASTER: Send address changes to Kansas Wildlife & Parks Magazine, P.O. Box 8059, Red Oak, IA 51591. For subscription inquiries call toll-free 1 800 288-8387. Paid for with taxes or public funds.



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**Front Cover:** Fox squirrels are popular small game animals in Kansas and are among those that may carry tularemia. Mike Blair captured the image with a 600mm lens, f/8 @ 1/500th sec. **Back Cover:** A coyote crosses a natural bridge at night. Blair used a strategically-placed remote digital trail camera to capture the action.



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# TULAREMIA

## Truth



by Ruby Mosher, DVM  
*wildlife disease coordinator, Emporia*

photos by Mike Blair  
*photographer/associate editor, Pratt*

*Commonly known as rabbit fever, tularemia cases are less common today than they were 50 years ago. However, whenever humans come into contact with rabbits, squirrels, or ticks, there is some risk. Prevention is the best medicine.*

**R**abbits. Ticks. Bacteria. Add a hunter or other outdoor recreationist to the mix, and there's a chance to come down with tularemia. But awareness of the disease and proper precautions can help people remain disease-free while enjoying the outdoors.

Tularemia, commonly known in the U.S. as "rabbit fever" or "deerfly fever," is not a new disease but is in the news again because of recent epidemics. It is highly infectious but not common in modern society. During the 1930s and '40s, the U.S. averaged 1,000 cases of tularemia per year. Decline of the disease was partly due to society's residence shift from rural areas to cities in the early 1900s. Public education about tularemia and how to prevent it also helped decrease the number of cases.

As cases diminished, tularemia was dropped from the federal government's mandatory disease reporting list in 1995. However, its highly infectious nature makes it one of six top diseases for potential development as a biological weapon in terrorism. Therefore, in 2000, tularemia was reinstated as a disease that must be reported to state and federal officials when diagnosed.

While tularemia has declined in the U.S. as a human disease, locations of reported cases have also shifted over time. Tularemia used to be more prevalent in the eastern U.S. but now, with the exception of Martha's Vineyard in Massachusetts, it occurs

mostly in southern, central, and western states. Missouri, Arkansas, South Dakota, Oklahoma, and Kansas report the most human cases of tularemia. Kansas reported 637 cases from 1924-1949; 328 cases

from 1950-1975; 96 cases from 1976-1994; and 73 cases from 1991-2004. Since then, approximately five cases of tularemia have been reported each year in Kansas. Most Kansas tularemia cases occur in eastern counties.



Tularemia is caused by the bacterium, *Francisella tularensis*, which is carried by a variety of mammals. Hunters are most likely to come into contact with it through rabbits and squirrels.



Hunters may contract tularemia through cleaning an infected rabbit, eating undercooked game meat, or a tick bite. Tularemia can start with flu-like symptoms, including a sudden fever, chills, headache, muscle aches, joint pain, weakness, diarrhea, and a dry cough.

## The Disease

Tularemia gets its name from Tulare County in California, where the causal bacteria was first isolated in 1912 in a study of ground squirrels with a plague-like disease. Tularemia's common names, such as rabbit fever and deerfly fever, are derived from the type of animal most-associated with the disease.

Tularemia is caused by the bacterium, *Francisella tularensis*, one of the most highly infectious organisms known to affect humans and animals. People can get tularemia in all sorts of ways, ranging from contact with infected wildlife or contaminated water, to bites from infected ticks, flies, and mosquitoes, to simply breathing in the bacterium. In North America,

tularemia is primarily a tick-borne disease, although biting flies, mosquitoes, gnats, and midges can transmit the disease to people after feeding on infected animals. The disease itself is variable, causing symptoms that range from mild to life-threatening.

Tularemia occurs in patchy locations throughout the world, though it tends to occur mostly in the northern hemisphere. On the North American continent, tularemia has been reported in every state in the mainland U.S., in every Canadian province, and as far south as Guadalajara, Mexico. In Eurasia, the disease is reported to occur mostly in Northern and Central Europe, as well as Japan.

The tularemia bacterium can infect nearly any creature,

including mammals, birds, bugs, amphibians, reptiles, and fish. The disease affects animals differently, though, depending upon the susceptibility of the species. Wild animals most commonly associated with tularemia are rabbits, hares, squirrels, muskrats, beavers, mice, voles, chipmunks, woodchucks, and prairie dogs. Less commonly, mule deer and white-tailed deer can be sources of tularemia for humans. Domestic animals most commonly associated with tularemia are sheep and cats.

Two types of tularemia exist, designated Type A and Type B, depending upon the severity of disease caused in humans. In the U.S., most tularemia cases are Type A – a tick-borne syndrome associated with rabbits. Type B, a waterborne syndrome associated

with rodents, is most common overseas. Both tularemia strains are virulent in wild animals, but Type A bacteria are most dangerous to humans.

To better understand how people can become infected with tularemia, let's take a closer look at how these two different types of the disease occur in nature.

### TYPE A TULAREMIA

Type A tularemia has a terrestrial, or land, cycle and is maintained in the wild primarily because of ticks. Hard ticks, such as the dog tick and the lone-star tick, are able to carry *F. tularensis* in their guts throughout their lives. They are even able to continue the infection, through their eggs, to the next generation of ticks. Thus, some ticks maintain a reservoir of tularemia bacteria always ready to infect the mammals they feed on. This is why tularemia is endemic, or always present, in certain areas.

Maintenance of the tularemia cycle in nature also requires a mammal susceptible to the dis-

ease. In Kansas, cottontail rabbits and jack rabbits are the primary victims, though squirrels and other small mammals serve as well. Tick bites may transmit *F. tularensis* into the mammal's bloodstream where the bacteria then multiply into great numbers and spread throughout the body. Other ticks feeding on the infected rabbit then pick up the bacteria and spread it to more animals. Flies, mosquitoes, and fleas feed on the host and vector bacteria to other animals in the same way. Local outbreaks or widespread epidemics can then occur if enough susceptible animals are present.

Rabbits with acute tularemia infection may be depressed, uncoordinated, or in a stupor. These are not diagnostic symptoms, but simply indicate that the animal is ill. Internally, the disease usually causes small white

spots on the liver and spleen where the bacteria have caused cellular destruction. Rabbits may also have enlarged lymph nodes and, more rarely, pneumonia. Many infected rabbits will die in an outbreak of tularemia, but some will continue to live and become chronic carriers of the bacteria.

Enter man. With infected ticks, flies, mosquitoes, and rabbits in an area, there are numerous opportunities for an outdoors person to encounter *F. tularensis*. Bacteria can be transferred to people through bug bites, or by even squashing a bug and releasing the infected body fluid. Hunters can encounter tularemia when field-dressing an infected rabbit or squirrel, or by eating undercooked game meat. Less commonly, the bacteria can be acquired by simply breathing airborne infective particles.



Mosquitoes, ticks, deer flies, midges and gnats can transmit the disease to people after feeding on an infected animal. The best defense is prevention: bug spray, and checking for ticks before they have a chance to bite.



Hunters can protect themselves by wearing rubber gloves when dressing game animals. Type A tularemia is easily treated with antibiotics.

When humans become infected with Type A tularemia, the resulting disease depends on how the bacteria entered the body. Within 3-5 days after exposure, a person may feel flu-like symptoms including a sudden fever, chills, headache, muscle aches, joint pain, weakness, diarrhea, and a dry cough. If bacteria entered through a bug bite or open wound, the entry area will usually redden and form an ulcer or crater. If bacteria entered through the mouth when eating improperly cooked infected meat, a sore throat often develops along with swollen lymph nodes and sores in the mouth. A serious infection possibly leading to blindness may develop if the bacteria is rubbed onto or otherwise

contacts the eye. If airborne bacteria are inhaled, a particularly deadly pneumonia may develop: this is the delivery method that security officials believe terrorists might exploit. In all cases, Type A tularemia may progress to a fatal disease if left untreated.

The good news is that timely antibiotics can easily and effectively treat Type A tularemia. Early diagnosis is the key, which is why outdoors enthusiasts and small game hunters in particular should be aware of dangers and symptoms of tularemia.

## TYPE B TULAREMIA

Type B tularemia is primarily a waterborne disease of true rodents such as beavers, muskrats, voles, and mice. This was the type of tularemia involved in the 2002 disease outbreak in Texas among wild prairie dogs that had been captured for sale as pets.

Worldwide, more human cases of tularemia are actually caused by rodents than by rabbits. Fortunately, Type B tularemia causes a much milder infection in man than does Type A. In wildlife, however, Type B tularemia is just as deadly. Although this type of tularemia occurs in North America, it is more prevalent overseas

Rodents are very susceptible to Type B tularemia and are vital to the ecology of the disease. Rodents are hosts to ticks that vector the disease. Additionally, rodents shed bacteria in their urine and feces and thus contaminate water sources as well as hay and grain stores.

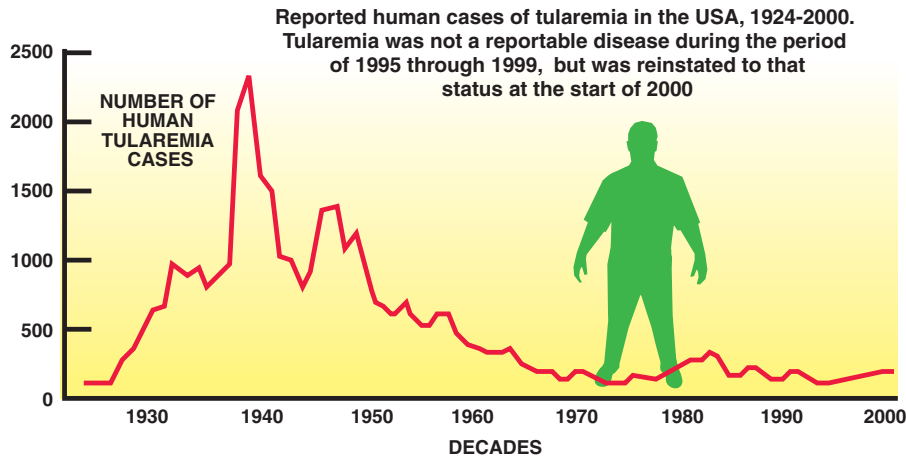
Infected beavers and muskrats tend to die in epizootics, or outbreaks. Because of this, they are not likely to be responsible for maintaining tularemia in the environment. Instead, voles or meadow mice are believed to be the reservoirs for continual contamination of certain water sources. Some of these individuals can live and become chronic carriers harboring the bacteria.

People can become infected with Type B tularemia in the same ways as Type A. Direct contact with infected beavers or muskrats is most likely through trapping. Additionally, Type B tularemia can be acquired through ingestion and inhalation of contaminated water. Infective airborne particles can also be inhaled while handling hay or grain that voles or mice have infested. Fortunately for man, this form of the disease runs a milder course in humans.



If the bacteria enters through a cut or sore, the area will usually redden and form an ulcer or crater.





## PREVENTIVE MEASURES

In the U.S., human cases of tularemia tend to occur in small sporadic clusters and can usually be linked to outdoor activities. During summer months, the disease is caused mainly from insect and tick bites, whereas in winter, infections usually involve hunters and trappers who handle infected animals. Outdoor pets can also be sources of infection. Dogs and cats may bring the tularemia bacteria home after eating dead animals or through tick-borne infections. A number of recent Kansas cases have occurred through cat bites and scratches.

Since tularemia cases are not common, the disease may not be high on your doctor's lists of suspicions. If you become ill with tularemia-like symptoms, be sure to alert your medical professional of possible recent contact with the bacteria. This would likely involve bug bites or handling

wild game, though any outdoor activity, including gardening, hiking, camping, hunting, trapping, and fishing could be responsible for infection.

You should seek medical attention promptly if any of the following conditions occur anytime within a few weeks of possible exposure:

- if a rash or sore develops around a tick or insect bite; if a sore or ulcer begins to form on the skin or in the mouth after preparing or eating wild game; or if you develop flu-like symptoms such as fever, muscle aches, nausea, or vomiting.

Awareness of tularemia should not lead to fear of the outdoors. Not every tick or rabbit you encounter will be infected with the disease. In fact, the vast majority of outdoors enthusiasts will go a lifetime without contracting tularemia. Even so, it's wise to know the potential dangers. Be aware of tularemia and use precautions. Then you can relax and enjoy the great Kansas outdoor experience. ♡

## PREVENTION

The following guidelines will help you avoid not only tularemia but other wildlife-associated diseases, as well.

Do not handle or eat sick wildlife. Healthy wild animals are not easily approached or caught. Many cases of tularemia have been contracted by people who caught wild animals by hand. If you see a sick animal, stay away from it and contact a wildlife professional.

Minimize the risk of tick-borne diseases by using repellents. Wear long-sleeves with cuffs and tuck long pant legs into socks or boots to make it difficult for bugs to reach your skin. Perform frequent body checks to find and remove ticks promptly. Use flea and tick repellents on your pets.

Do not drink untreated water. When camping, carry safe water or boil water before drinking.

Avoid recreational activities in or around water where animals are found sick or dying.

Wear rubber, latex, or nitrile gloves when handling or dressing all wild game.

Thoroughly cook all game meat until well done (160 degrees.)

Do not eat, drink, or smoke when handling game.

# Digital Eyes



text and photos by Mike Blair  
*photographer/associate editor*

*Remote trail cameras are popular with hunters, serving as their “eyes” and giving them information about game movement when they can’t be in the stand. However, with a few tricks, trail cameras can be used to take unique wildlife snapshots.*



**W**ildlife photography has always been a game of patience. From most beginners' misguided notions that longer lenses and better equipment are the answers to stunning animal photographs, there is a gradual realization that knowledge of animal behavior is the real key to excellent pictures. Knowing animal habits helps a photographer get close, and after that, it's a matter of waiting for opportunities. Only when light, subject, and proximity blend perfectly are the best wildlife photos made.

As a full-time wildlife photographer for 21 years, my best pic-

tures have always been the products of time afield and patience. Pictures appearing in magazines sometimes require days or weeks to accomplish the old-fashioned way – setting up in a blind with traditional gear and hoping that wildlife appears in good light conditions. I once sat for 27 hours to get a single picture needed to finish a story on ferruginous hawks. And I've waited all day on various subjects without getting the opportunities hoped for. That's tedious, but is usually balanced by eventual success.

That was before. Now, to a degree, patience can be replaced with technology. As with everything else in the new millennium, technology is providing important options for wildlife photography. Trail cameras, first introduced to help hunters keep tabs on game animals, have proven valuable in recording all kinds of animal behavior. Used at a den or nest, the camouflaged cameras can be left in place for days to record wildlife routines without human intrusion. Using infrared and motion sensors, the cameras record still photos day and night, automatically flashing in low light. The result is round-the-clock surveillance of all animal activity at a given location. This opens a surprising window of knowledge previously available only through direct observation, or through more subtle hints such as tracks and sign. The mysterious world of nighttime wildlife is suddenly unveiled through trail cameras.

Trail cameras work by detecting motion or temperature differences when an animal steps through an invisible beam. Depending on air temperature,

the triggering device may work up to 30-60 feet away. Because the cameras use wide-angle lenses, they are more effective with increasing distance. Generally, they work best when placed about 10 feet from a game trail when filming large animals. For birds and small animals, closer is better.

All trail cameras have a short delay between detection and firing. The best have fast trigger speeds in the half-second range, increasing chances that a passing animal is photographed. Trail cameras with slower trigger speeds often result in a disappointing "blank frame" containing the scene but no animal. In that case, a moving animal simply passes through the field of view before the picture is taken. These cameras are best suited for use at a food source or other situation where the animal stops for a time.

The first trail cameras used 35mm film. These were capable of good photos, but were limited to 36 or fewer frames by the size of the film pack. The need for frequent film replacement discouraged their use in remote settings. Digital technology uses compact flash cards that hold hundreds or even thousands of pictures. This breakthrough brought trail cameras into widespread usage. Expanded memories of digital cameras also allow for video clips that provide short "movies" of the subject.

Among the many digital trail camera models available, performance differences exist. Comparisons will show differing trigger speeds, battery life, flash range, and image quality. The newest technology uses infrared light to record black-and-white

night images without flash. Though infrared trail cameras are a good choice for urban areas where flashes might attract attention and invite camera theft, their limited range and blurry, grainy results

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moving animals make them poor substitutes for good flash models.

Battery life is a key consideration, especially if trail cameras are to be used in cold conditions. Many trail cameras use D-size batteries, but some exhaust their batteries in just a day or two, while others might work for weeks under similar conditions. Battery power also affects flash range and recycle times. Many trail

cameras can be programmed for various time delays between exposures, or for day-only or night-only photography. A minimum delay of 60 seconds between photos allows for flash recycle and digital capture to the flash card.

After trying a variety of models and brands, my favorite is the Cuddeback Expert, a 3-megapixel camera with 70-foot flash range that produces images with excellent resolution, color, and sharpness. This camera costs about \$400, but in my opinion its dependability makes it worth the cost.

I use trail cameras to photograph wildlife in a variety of ways. Though I use some cameras at food sources, the most exciting images come from natural crossings and trails, where a



Placement of the remote trail camera is critical to the quality of the image you'll get. If the camera is too close to the trail, you may see only a portion of the deer. The image above is the result of placing the camera along a field edge where bucks commonly traveled to check scrapes. The camera was set to utilize evening or morning light.

variety of animals and interactions may be captured. Any animal habit or home can become the focal point for trail camera photography. Regular animal movement is the key.

The majority of trail cams are most likely set by hunters wanting to learn about deer. Whitetails are creatures of habit, and because of this, it's easy to take great photos of deer in various aspects of their lives.

Food is the most dependable attraction for deer, and trails leading to crop fields are good starting points for trail cameras. In summer when bachelor buck groups make predictable trips to food sources, trail photos provide a chronicle of developing antlers. The same setups can also capture great pictures of does with their spotted fawns. Later, when the autumn rut kicks in, buck scrapes are focal points of deer activity, providing exciting and often dramatic views of mature bucks in hard antlers.

Such around-the-clock photography can offer surprising information. Last fall, I put a trail camera near a food source in an area I was bowhunting to help keep tabs on the deer movement. A number of mature bucks visited nightly, seldom showing up in daylight. The best buck, one I dubbed Sidekick, was filmed more than 100 times after October, traveling only under cover of darkness. Not



For unique photos, the author searched for areas of high wildlife activity, such as this beaver dam. Beavers checked the spillway area nightly, and other animals were photographed on the dam, including herons, deer, raccoons, coyotes and opossums.



once did I see or catch this deer in daylight on the trail camera. Sidekick was totally nocturnal.

One of my favorite trail camera setups was on a fallen log that crossed a deep creek. Knowing that bobcats don't like to get wet, I hoped to film a cat

as it crossed the log. Over a one-month period in late winter, the set-up photographed numerous furbearers crossing the natural bridge, including raccoons, coyotes, opossums, and bobcats.

The log bridge set-up also convinced me that camera flash

has little effect on wildlife. Placing the camera to record oncoming traffic along the log, I expected that a sudden flash at night might startle a cat or coyote into bailing off the log into the water. But it didn't happen. The animals, captured by the first flash in the middle of the log, would often stand nonchalantly for a second flash image a minute later. Over several years, I've filmed coyotes – the spookiest of animals – multiple times at night without the flash scaring them.

This also proved true for big, mature bucks that often stayed around for several flash images before moving on. Though advertising hype for no-flash trail cameras suggests that flash might scare deer and other wildlife, I'm satisfied it's not a factor.

One fascinating trail camera location I tried was at the end of a beaver dam. Several dams created a large marsh, with one dam ending at a flat, natural spillway where I placed a camera. Beavers checked the spillway nightly and worked on the dam's end. There, I filmed deer, raccoons, herons, ducks, and beavers.

During winter months, food is always a major wildlife attraction. Trail cameras placed on bird feeders provided interesting shots of various birds, especially in falling snow. Skinned carcasses taken while trapping, or remnants of a butchered deer, attracted a variety of meat-eating birds and animals.

Creek or fence crossings provided focal points for trail camera usage and often resulted in excellent wildlife pictures. Turkeys, feral hogs, deer, and coyotes –



Image quality can vary by camera brand, as seen in the two images above. The top photo was taken with a top-of-line brand, while the lower photo was snapped by a different brand of camera. The "white eyes" are a trademark of trail camera photos when the flash is used. An infrared, "no flash," picture shows undesirable motion blur, below.

anything that used game trails might show up on film. Because of this, trail cameras provide a constant source of discovery.

Though the cameras I use are completely silent and blend well with the surroundings, wildlife always seem to know the camera is there. Many humorous shots of animals nuzzling the lens are recorded. Raccoons are especially curious and often lick the lens or disturb the camera, making it necessary to clean and reposition it often. Almost assuredly, human scent on the camera is what attracts attention. I sometimes use rubber gloves and practice scent control around the camera site, but it seems

to make little difference. Animals seldom appeared threatened or nervous because of the camera's presence.

Image quality can be affected by fog and ice. Even during summer months, high humidity and cool nights can fog the lens,



ruining nighttime photos. This problem is worst near sunrise, when heavy dew may settle on the lens. Daytime photos are not affected. I've treated the lens with anti-fog solutions, which reduced the problem, but strong chemical odors often attracted unwanted attention that resulted in less than natural shots.

Beautiful winter images can be recorded during snowstorms, and decent pictures are possible even in rain. However, freezing rain and ice may cover the lens and block images. In that case, it's important to visit the trail camera and clean it thoroughly.

Bitter temperatures increase battery drain on even the best cameras. Of course, the number of photographs also affects battery life. During winter storms around a food source, I can expect about 700 images on my cameras before battery failure. When temperatures fall to zero at



One of the author's favorite set-ups was a log crossing a creek. He set the camera with the hope of getting a bobcat photo, and it worked. However, many other wildlife also used the natural bridge, including raccoons, coyotes and opossums.

night, battery failure may occur in three or four days when taking hundreds of photos daily.

Trail cameras have revolutionized my wildlife photography. These electronic scouts will never take the place of traditional

equipment, but they provide unique photos that certainly complement the daily work. They also provide proof of amazing behaviors and interactions in the animal world that could formerly only be guessed at.

A word of caution: know what you're buying. I've often recommended an expensive, reliable trail camera, only to learn that the purchaser found a better "deal" that ultimately led to disappointing results. Even some high-end, expensive cameras don't perform well in the field. Do your homework before purchasing.

Having weatherproof photo sentries on guard 24/7 is now a reality unthinkable only a decade ago. These windows on the outdoors add a new dimension to photography and increase knowledge of the natural world. Whether used on your home bird feeder or in a remote forest setting, trail cameras are a wonderful new element of a popular outdoor hobby. ♡



In addition to trails and creek crossings, food and water sources are also good places for trail cameras. During dry periods, a water hole can provide great images.

# The Worth of Water

by Tommie Berger

*district fisheries biologist, Sylvan Grove*

photos by Mike Blair


*photographer/associate editor, Pratt*

*“You see, I had been riding with the storm clouds, and had come to earth as rain, and it was drought I had killed with the power that the Six Grandfathers gave me.”*

**Black Elk**







*Editor's note: Man has always tried to explain, predict, control and understand weather extremes. We often take weather-related disasters personally and search for answers. The idea for this article started during the extended drought, but when publication date came, Kansans were recovering from extreme flooding in some parts of the state.*

**W**ater. Even though we regularly endure dramatic wet and dry cycles, we generally take water for granted. However, issues surrounding water affect our lives nearly every day. Kansas lies in the center of the United States with no oceans or mountains for hundreds of miles. We live in a relatively dry climate, and nearly every pond, lake, and reservoir is man-made.

Naturally, we're most aware of water issues when there's too much or not enough. Major droughts are not forgotten – the Dirty Thirties, the late 1980s, and the mid 2000s. But wet years leave their marks too – the '51 floods, the '93 floods, and now the 2007 floods. Experts refer to major events as “100-year floods” — Kansas has endured three 100-year floods in 56 years! It would be nice to level out all those years and get rain when and where we need it.

Because our climate is dry, water is important to us. One of the major uses of Kansas water is irrigation for crops, and agriculture is a cornerstone of our state's economy. Much of the water for irrigation comes from underground aquifers – giant pools of water subject to depletion if demand is too great without adequate rains to recharge them. Think about where our water comes from and where it goes. How much do you know about the geography of water in Kansas?

Water is as simple as rain falling from the sky or a steady stream running out of the faucet. Every creature needs water for survival, but we are spoiled and assume it will always be there. Each drop holds the potential to grow and nurture life, yet water's fearsome force can humble all our efforts to control it. Every generation has endured periods of drought and flooding.

Back in 1993, many Kansans wondered if the rain would ever end. Reservoirs that had been on life-support overflowed.

Flooding was a serious problem. By the late 1990s, we

started into what turned out to be a long-term drought, and we wished we could have some of that 1993 water back. Crops and livestock suffered. By 2006, wetlands were drying up, many of our farm ponds and watershed lakes were dry, and western-Kansas reservoirs, the same ones that overflowed in 1993, were again critically low. Some central Kansas reservoirs hit record low levels.

That's the cyclical nature of water on the plains. By early July of this year, Kansas again experienced monsoon rains and historical flooding in the state's eastern half. Cities like Fredonia, Altoona, Erie,

Osawatomie, Coffeyville and La Cygne endured devastating flooding that did millions of dollars in damage. Twenty counties were declared federal disaster areas. Rains that prevented wheat harvest, planting, and growth of spring crops ravaged the farm economy. Excessive water was disastrous from a damage standpoint, but in the long scheme of time, it helped replenish water critical to Plains ecology.

Some might ask just how such rains will affect our economy. That remains to be seen, but high water can impact even gas prices: the damaged refinery at Coffeyville is shut



After nearly seven years of drought, many parts of Kansas received ample rain this past spring and summer. In fact, portions of eastern Kansas suffered record reservoir levels and damaging floods. When rainfall is normal, it's easy to take water for granted. However, the extremes of the past decade have reminded us how much water affects our lives.

## Cheyenne Bottoms Wildlife Area

The good news this summer: Cheyenne Bottoms Wildlife Area has water. The bad news: there is too much water. It's ironic that just two years ago, we were enduring a serious drought and the wildlife area provided no water and almost no waterfowl hunting opportunities. Last year, the area filled in a short time during August when large amounts of rain fell in the watersheds that drain to the basin.

In July, there was too much water. Water depths were so excessive that four dikes are underwater, a fifth dike has been breached, and all perimeter parking lots are flooded. Depending on location within the basin, between 20 and 45 inches of rain fell from January 1 to the end of June. Add runoff from Blood and Deception Creeks, and around 30,000 surface acres covered the basin in August. It remains to be seen how much water can be released prior to the September teal season. We hope for at least normal access to the area and for opportunity to repair damage to boat ramps and parking areas.

How will this year's rains affect vegetation? We suspect that cattails in the deeper water areas will be stressed to death. Cattails and other wetland plants in the shallow water areas should be fine. Flooded grasslands may suffer the worst from the long period of standing water. Most trees encroaching into the grasslands should die. The waterfowl food resources will be restricted to areas that are now fairly shallow. Smartweed, spikerush, various bulrushes and perhaps some millets should have a good year in these portions of the basin. Many of these areas, however, lie outside the Cheyenne Bottoms Wildlife Area.

We hope to provide normal access for Cheyenne Bottoms visitors this fall. It depends on the weather.

*Karl Grover, manager, Cheyenne Bottoms WA*



Cheyenne Bottoms Wildlife Area is a 19,000-acre wetland in Barton County that is recognized internationally for its significance to migratory birds. Prior to 2006, the area had been dry or nearly dry for almost three years. It filled quickly in the fall of 2006, then rose to near record levels this summer.





## Fishing

It will take time for the eastern-Kansas reservoirs to settle down after this summer's high water. In contrast, western and northcentral Kansas reservoirs are still well below conservation levels. Western impoundments have gained slightly with extra rains, but the question arises, "Is the drought really broken?" Many will remember the fantastic fishing for bass and crappie that the western Kansas reservoirs experienced after the 1993 floods.

In most areas of the state, farm ponds and watershed lakes are once again full, and requests for both stocking information and fish have been pouring in. In a few years, farm pond fishing should again be a viable option for many Kansas anglers. Reservoir fish are generally not much affected by high water and high releases.

Certainly, fishing is affected by the high, muddy waters — success is often limited to catfish species during these times. But once the water settles and begins to clear, fishing for other species quickly returns to normal. Floods and high water severely limit the fishing on streams and rivers during flood events, but high water allows our river fish species to move around and replenish heavily fished areas. It also gives most of those fish good groceries during the process. Our fish have adapted pretty well to life out here on the plains — and feast or famine water conditions.

*Tommie Berger, fisheries biologist*

Many farm ponds in the western half of Kansas went dry during the last drought. However, rains this spring and summer have put water back in most of them. While some reservoirs out west are still well below conservation levels, many in eastern Kansas are full and a few saw record flood stages. The photo on the left shows high water at Toronto Reservoir.



down, maybe until Labor Day. The effect on corn crops may be felt as well; some corn was destroyed, but what remains may require little or no irrigation. Dryland yields might be high, and yields will ultimately dictate the price of corn. That will affect dairy and milk prices, as well as ethanol production. And the list goes on.

So, where does our water come from and where does it go? Evaporation, condensation, and precipitation pretty much sum up the water cycle, and the sun is the pump that drives the system. On the plains, a lot of our weather rolls out of the Rocky Mountains, and much of the moisture falls before it gets

here. Gulf moisture pushes up from the south and when the cold fronts move down, we can get rain. Average annual rainfall in Kansas varies from 17 inches in the far west to as much as 40 inches in the east.

Water flows basically from west to east across the state, to the Mississippi watershed that drains the central U.S. That water reaches the Atlantic Ocean through the Gulf of Mexico. Water drains out of Kansas through a system of major rivers, each with individual networks of creeks and local watersheds. Rivers are the lifeblood of our state, yet many Kansans have sketchy knowledge about our major rivers.

Let's start at the northwestern corner. The Smoky

Hill and Saline Rivers run parallel to each other through western and central Kansas and drain much of the northern part of the state. The Saline River actually joins the Smoky Hill River just east of Salina. The Smoky Hill River then courses eastward to Junction City where it meets the Republican River, which comes out of northeastern Colorado, crosses the extreme northwestern corner of Kansas, and drains much of the southern portion of Nebraska. The Kansas River is formed where the Smoky Hill and Republican join, and it flows eastward to the Missouri

at Kansas City. The Missouri finally drains into the Mississippi.

Many Kansas reservoirs are fed by this system. Cedar Bluff is built on the Smoky Hill River, as is Kanopolis, a hundred or so miles downstream. The only reservoir on the Saline River is Wilson. Sebelius (Norton) Reservoir is actually on Prairie Dog Creek – a drainage of the Republican River in Nebraska. Webster and Kirwin Reservoirs are on the south and north forks of the Solomon River which meet and form Glen Elder Reservoir before continuing into the Smoky Hill River.

Lovewell Reservoir is on White Rock Creek, another drainage of the Republican after it re-enters Kansas. Milford is Kansas' only reservoir on the Republican.

Farther east, Tuttle Creek lies on the Big Blue River, which comes out of Nebraska and dumps into the Kansas River just east of Manhattan. Perry Reservoir is on the Delaware River, another northern tributary of the Kansas River. Clinton Reservoir is on the Wakarusa River, a southern tributary to the Kansas River.

Those are the easy ones for many folks. In southern, espe-



Fall River and Toronto reservoirs saw water rise to near record levels, but releases weren't an immediate remedy because of flood conditions downstream in southern Kansas and northern Oklahoma.

## Waterfowl

The impact of this summer's rain events on Kansas duck production is difficult to assess. Excellent waterfowl production should occur in temporary field pools or in filled playa lakes. These small and temporary wetlands teem with invertebrates that provide necessary protein for egg production and brood rearing. They also have the added benefit of increasing brood survival because the hen and brood have less distance to travel between wetlands.

In areas such as Cheyenne Bottoms where flooding occurred throughout the entire breeding season, we expect lower than average production. However, ducks can re-nest two or three times, and those that lost nests in the flood may have successfully moved to smaller wetlands created by the rain. Hard rains experienced throughout the breeding season impacted brood survival in local areas, since newly-hatched ducks are vulnerable to exposure.

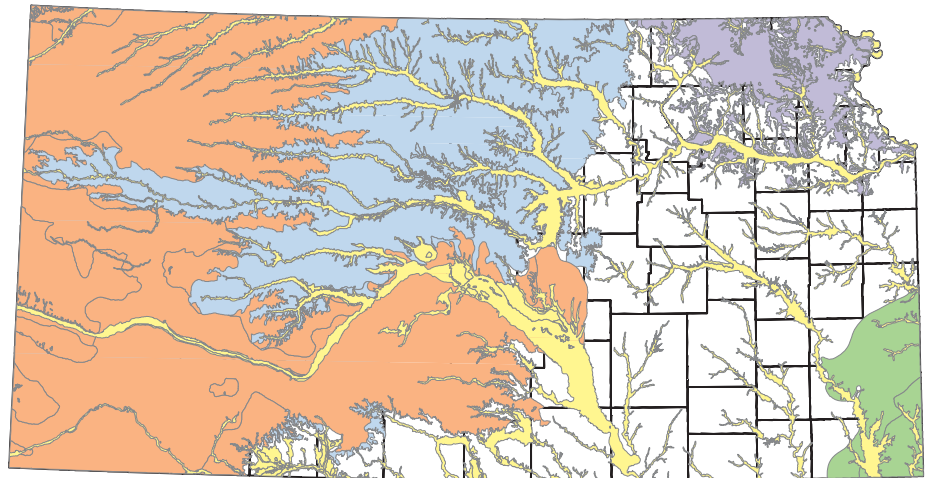
Overall, this year highlights the importance of small, temporary wetlands for duck production. As well, it reminds us that it is important for landowners to protect these wetland basins even during dry years because they can be the difference between a good production year and a failed production year.

*Faye McNew,  
waterfowl research biologist*

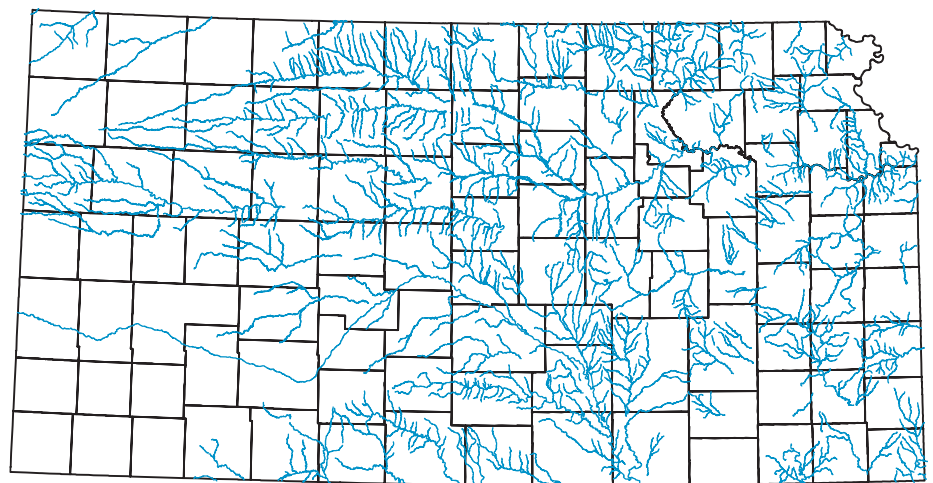
cially southeastern, Kansas, the numbers of rivers and reservoirs pick up quickly. Three eastern Kansas reservoirs - Hillsdale, Pomona, and Melvern, lie along the Marais des Cygnes River drainage which actually flows into the Missouri River about halfway across the state of Missouri. All the other reservoirs in Kansas eventually drain into the Arkansas River system,

which joins the Mississippi River on the eastern side of the state of Arkansas.

Cheney Reservoir is on the Ninescah River, which empties into the Arkansas just south of Wichita. El Dorado is on the Walnut River, which flows straight south to meet the Arkansas near the Kansas/Oklahoma line. Marion, Council Grove, and John



The map above shows the major sources of underground water, or aquifer. The orange is the Ogallala, or High Plains, the blue is Dakota, purple is Glacial Drift, green is Ozark, and the yellow is Alluvial. The map below shows the major stream and river basins of the state.





Several state parks in southeast Kansas received flood damage, but the extent won't be known until waters are dropped to normal levels. Managers are concerned about the water's effect on mature trees surrounding the reservoirs.

Redmond reservoirs are in the Neosho River drainage, and Big Hill, Toronto, and Fall River Reservoirs lie along the Verdigris River system – both of which find the Arkansas River in Oklahoma.

That's a lot of stored and running water through Kansas. But that's above ground. Below the surface are aquifers, vast storage reservoirs of water tapped for drinking and irrigation throughout the state.

Aquifers are not just big underground lakes, as some believe. Instead, they're made up of porous sand, gravel, or

other materials that hold and store water. Subsurface water is called groundwater, the top of which is the water table, and at the bottom of which lies bedrock.

Kansas has seven aquifers, including the largest freshwater aquifer in the world that underlies parts of western Kansas and seven other states – the Ogallala. Other aquifers include the Dakota, Alluvial, Glacial Drift, and Ozark.

Kansas is also home to many large and famous wetlands. The largest, Cheyenne Bottoms in Barton County, swelled to

## State Parks

In late June, 15-20 inches of rain fell on parts of eastern Kansas. In some areas, flood damage was extensive.

State parks and public lands were also hit hard. The water levels at Toronto Lake nearly equaled the flood of record. Fall River reached the highest flood pool since its recreational areas were developed. This was the fourth high-water event for Toronto and Fall River this year, but it was by far the most significant. Toronto's 30-foot rise and Fall River's 38-foot rise inundated many of the parks' facilities. Hardest hit were docks and campgrounds close to the water's edge, and some were completely submerged. These reservoirs and Elk City Reservoir remained above conservation pool for a long time, since releases were slow and controlled to prevent flooding downstream.

Damage to other areas such as the Prairie Spirit Trail are quickly apparent, with the loss of a major bridge and extensive areas of trail washed out. The true impact to Cross Timbers, Fall River, and Elk City state parks probably won't be known for months.

Parks will deal with lost revenue and expensive clean-up, but another concern is the effect of a delayed drawdown on inundated native trees and vegetation. We hope to reopen parks as quickly as the waters recede.

*Doyle Niemeyer, manager, Cross Timbers and Fall River state parks*

## Game Birds

Flooding or hail aren't the only ways game bird reproduction can be impacted by extreme weather. game bird chicks can leave the nest and feed themselves shortly after hatching. But they are particularly vulnerable in the earliest days because they are unable to regulate their own body temperatures. This ability, called thermoregulation, is gradually acquired by about two weeks of age.

Drenching, persistent, or unusually cold rains that occur during this vulnerable period can chill chicks to the point of death. If rains aren't too heavy, don't last too long, and temperatures aren't too cold, hens can protect chicks by brooding them. But when extreme conditions overwhelm the hen's ability to keep her brood warm, losses can occur. Such conditions can also cause embryo deaths within the eggs of late-incubation clutches and may cause hens to abandon clutches altogether.

When it comes to impacts on game bird reproduction, timing is everything. Repeated, drenching rains that occurred in parts of central Kansas in May almost certainly resulted in some nest abandonment and losses of game bird chicks, particularly pheasant and prairie chickens since their hatching peak occurs in early June. Pheasants are strong renesters and may well recover with new nesting attempts and lush conditions. In southeastern Kansas, substantial losses of bobwhite chicks may have occurred with extremely heavy rains in late June, since these rains coincided with the normal peak of quail hatching. This summer's brood survey, conducted by KDWP personnel in late July and August, will provide a better idea of how well game bird populations withstood or recovered from the extremely wet conditions in these areas.

*Randy Rodgers and Jim Pitman,  
wildlife biologists*

more than 30,000 acres during July of this year, temporarily making it the largest lake in Kansas. Other wetlands, including Quivira National Wildlife Refuge, McPherson Valley Wetlands, Jamestown, Texas Lake, Neosho, and Marais des Cygnes wildlife areas received much needed water this past year, and many are dealing with damage associated with too much water. Wetlands are also managed in wildlife areas above our reservoirs. Wetlands have more diversity of wildlife, vegetation, and aquatic animals than any other habitat in Kansas. And they are vitally important in recharging aquifers.

Despite the damage and difficulties associated with too much rain, there are benefits. Kansas aquifers have raised as much as 12 feet in some areas during the 2007 rains, storing precious water for the future.

Clean water is vital to our state. Though we'd like to manage how it's received, that's not possible. For now, we must live with the feast-or-famine cycle that is simply part of life on the Great Plains. ♡



It will take some time before we learn the full impact of this summer's precipitation. Damage to areas still flooded can't be assessed until levels recede, and the impact to wildlife won't be fully evident until this fall.



# Carrying Tradition

text and photos by  
**Monica Bickerstaff**  
*assistant hunter education  
coordinator, Pratt*



*Dedicated trappers are ensuring that younger generations have the opportunity to learn about furharvesting through advanced education programs.*

The mission of the Kansas Hunter Education program is to provide instruction in basic hunter education, bowhunter education and furharvester education, as required by Kansas law. The program strives to start individuals on the hunter's path with the highest sense of ethics, safe equipment handling skills, an understanding of the hunter's role in wildlife management, and a commitment to live up to the traditions of the hunt and the standards that society expects of hunters.

Recently there has been an increase in student requests for programs that go beyond the basics; advanced programs that expand on topics merely touched upon in the basic course. Kansas volunteer instructors have shown their dedication to passing on the hunting heritage by organizing and conducting specific advanced programs. Classes covering topics including waterfowl hunting, goose hunting, upland bird hunting, predator calling, and furharvesting have been offered.



The basic furharvester education course, required of anyone born after July 1, 1966, can be acquired through instructors or correspondence. The advanced furharvesters course is designed to provide hands-on learning.

Advanced hunter education programs have proven especially valuable in the case of furharvester education. Legislation initiated in 1983 requires persons born on or after July 1, 1966 to complete furharvester education before harvesting furbearers in the state on lands other than their own. Individuals have two options to fulfill this legal requirement: they may participate in an instructor-led course or complete a correspondence course. But to gain hands-on experience from seasoned furharvester educators requires an advanced course.

Volunteer Furharvester Education instructors Cleo Hahn and Roger and Donna Macy, all active members of the Kansas Furharvester Association, dedicated a weekend during the 2006-2007 furbearer season to share their experience with individuals, predominately youth, who wanted to learn more about trapping. Completion of the basic Furharvester Education course was a prerequisite of the advanced class.

Following the purpose of the basic program, the Macys and Hahn provided instruction concerning the ethical, safe and selective hunting, trapping and

handling of furbearers and coyotes. The program gave instruction regarding responsible behavior, the importance of wildlife management, laws and regulations, and the safe handling of furharvesting equipment.

Instruction included discussions about the traps available, and students were guided in techniques to prepare equipment in advance of the season and for storage once the season ends. Under the watchful eyes of the instructors, students made adjustments and repairs to traps. Each trap was tagged with the user's name and address, as required by Kansas law.

In preparation for going afield to set their traps, students learned about necessary tools and equipment. The list included an 18-inch long trowel, pliers, additional trap tags, gloves, waders, metal trap stakes, packbasket or bucket to carry equipment, and license and permit holder.

As instructors reviewed the furbearer species commonly trapped in Kansas, they shared their knowledge of best baits and lures. Instructors emphasized the importance of scouting to determine whether non-target species or domestic animals were present, a factor weighing heavy on which bait or lure to use and, more importantly, whether or not it would even

be responsible to set traps in an area. Instructors assisted students with bait and lure choices. Time was dedicated to preparing their choices for use in the sets they would be making later in the day.

Finally, the time came to divide the class into two groups – one to be guided in their field experience by the Macys and the other by Hahn. I accompanied Hahn's group.

Anticipation built as we loaded into vehicles for the short trek to the river's edge. Respect for landowners and



In this advanced course, several experienced trappers passed on years of knowledge and experience to a group of eager novices.

their property was shown as gates were opened and closed en route. Once on site, each member of our group pitched in to carry equipment.

The course covered reading sign, setting dirt sets on land and setting water sets.



Hahn led the way to a spot he discovered during pre-season scouting. He pointed out trails, tracks and scats, or droppings – all signs of furbearers. Arriving at a spot where an obviously heavily-traveled trail followed along the edge of a patch of tall grass and then turned to travel through the tall grass, Hahn suggested one of us set a dirt, or land, trap that might catch a raccoon, fox or coyote. One of the young men in the group stepped up to the task. As the rest of us looked on, Hahn guided the young man as he made his set. Once finished, the group moved farther down the tall grass edge, looking for our next land set. Knowing we would be returning the next morning to check our sets, as required by law, we sketched a map of locations as they were set.

We continued our trek along the softly sloping terrain as it led to the river. As we walked, Hahn took advantage of every teachable moment, sharing with us lessons he has learned during the many years he has been trapping. Once at the river's edge, we pulled on our waders and waded out into shallow water to look back toward the bank for sign — tracks in the soft mud, trails leading in and out of the water, and feeding sites along the shore. Care was taken not to muddy the water any more than necessary; doing so would block out tracks left along the shore, just below the water's surface. Submerged tracks such as these guided us toward optimal sites for water sets.

In all, our group gained hands-on experience setting water, dirt and bucket sets. When finished, we joined the other group and shared our experiences.

Early the next morning, the Macys treated us to a hearty breakfast. As sunrise approached, excitement built. The anticipation reminded me of my childhood Christmas mornings, anxious to see what surprises were in store.

When rays of sunlight brightened the sky and gave warmth to the cool, crisp November morning, we met at our vehicles and caravanned to our trapline. With quickened step, we cautiously approached the first of our sets, a dirt set. Muffled squeals of excitement were heard as students saw the trap's catch, a raccoon. The group held back while Hahn humanely dispatched the raccoon. Then Hahn had the young man who had set the trap carefully removed his catch.

Proudly, the young furharvester carried the raccoon as we continued along our trapline in hopes of further success. Evidence of activity was observed at a couple of the sets, but only one additional trap held a catch — another raccoon.

Once again joining the group of young trappers led by the Macys, proper fur handling techniques were discussed as those enjoying success skinned and stretched the hides. All the while, the Macys and Hahn kept a watchful eye and interjected tips and suggestions for students to consider.

Though the course spanned several hours over two days the time passed quickly. While so much valuable information was imparted by these dedicated, experienced volunteer instructors, so much more was left untouched. At the very least, the Macys, Hahn and others having conducted advanced hunter education classes throughout the state can proudly realize they have put forth their best efforts to pass on the hunting heritage others took time to pass on to them. 🦋

After checking traps, students were guided through the proper steps of skinning and finishing furs.





## SHINING SOME LIGHT ON SHINERS

text and photos by Bryan Simmons  
ecologist, Pratt

*The Topeka shiner is our canary in the grasslands, indicating the health of our grassland streams by its presence. A current research project is designed to learn more about the species and how road and bridge projects affect it.*

Walking up and down a Kansas stream with a seine and syringes probably doesn't appear on most people's daily list of things to do. However, this past year, in coordination with a county culvert replacement project, several KDWP biologists did just that in the quest to help an endangered fish — the Topeka shiner.

In today's world of environment awareness, many Kansans know what threatened or endangered (T&E) means. They may also understand the increased financial burden T&E species can have on construction projects, including delays, mitigation, or even permit denial. But adding a species to the T&E list is actually more positive than many realize. A good analogy would be going to the doctor when we feel sick; we receive a diagnosis and begin treatment. For an endangered species, listing is the first step toward recovery. It makes people aware that something is wrong. This awareness leads to education. Education causes change in action, and action can create a brighter future for the listed animals, as well as other species.



The Topeka shiner (*Notropis topeka*, often referred to simply as “Topekas”) is a federally and state protected minnow that was first described in 1854. Within a century after its discovery, the Topeka shiner was found in hundreds of additional locations in Kansas, Missouri, and Iowa, as well as a few spots in Nebraska, South Dakota, and Minnesota. The shiner is usually found in quiet, open pools of small, meandering, spring-fed streams that generally have clean gravel, rock, or sand bottoms and contain clear, clean water draining from upland prairies. These streams most often flow year-round, but some are known to stop flowing during dry summer months. This is not something new to the Great Plains as numerous droughts have occurred over the last 10,000 years.

This fish, like other prairie species, is well adapted to its often hostile environment. As long as some pools are maintained by groundwater seepage, Topeka shiners can survive extremes, either by retreating downstream or by congregating in isolated pools. The Topeka shiner, due to its pristine habitat dependence, serves us as an environmental indicator — much like a canary in a coal mine — of the general health of its aquatic environment.

It is often noted that where you find Topekas, the species diversity will be high because of the high-quality environment. This is the same water valued for human

and livestock consumption and use. Additionally, Topeka shiner streams are often associated with high-quality recreational activities, such as fishing and swimming, partly because of their aesthetic appeal.

Unfortunately, with only 1 percent of the mixed and tallgrass prairie still intact, the Topeka shiner is now found in only 20 percent of its historic sites, and the decline continues precipitously. As a result, the federal government, in 1999, placed the Topeka shiner under protection of the Federal Endangered Species Act, which will help protect remaining habitat necessary for long-term survival.

While this species can adapt to a changing environment, this adaptation takes thousands of years over as many generations. The rapid change in the Kansas landscape from grassland to cropland and associated change to the streams is a very recent phenomenon and may be just one of the primary factors contributing to the decline of the Topeka shiner. Other factors include water quality degradation from nutrient

and pesticide runoff, accelerated erosion and heavy sediment loading, lowering of water tables, urban development, as well as highway and water impoundment construction.

Construction impacts are becoming more of a concern as biologists have gained a better understanding of their negative effects. It’s easy to understand that some of these projects would act as barriers, preventing up and downstream movements for some species. If these impediments remain in the channel long enough, as do dams and culverts, portions of the overall habitat are removed. If the area removed is a prime reproductive site, the consequences are amplified.

There is no denying that some

Most streams in Kansas have multiple road crossings, which are usually maintained by county road departments. Culverts such as these may impact Topeka shiner survival by preventing fish from moving upstream to critical habitat.





dams benefited the Kansas economy through flood prevention, recreation, and water supply, but some species have paid a price. There are situations where dams have assisted fish populations while preventing the spread of diseases and exotic species. Kansas is second only to Texas for its number of dams. We have more than 6,000 dams on record and continue to construct several each year, all of which impede aquatic passage to some degree, depending where they are built. Worse, it only takes one of these structures located fairly low on a respective watershed to have alarming ramifications for species upstream.

Furthermore, the majority of Kansas land is farmland. We have roads nearly every square mile, often with numerous crossings over each respective stream — approximately 25,800 bridges — of which an unknown percentage are impassable to aquatic animals. Seventy-seven percent of these bridges are

owned by counties, which usually can't afford to replace structures simply because fish cannot pass. If the fish can't pass, they can't get to the habitat that supports them.

Only 16 Kansas fish species are under state protection, and permits are required in only about 5 percent of projects reviewed by the Environmental Services Section. However, similar issues in other states and associated wildlife-related legislation demonstrate the potential for expensive resolutions to these problems. There, dams are being removed, and bridges are being replaced, retrofitted,

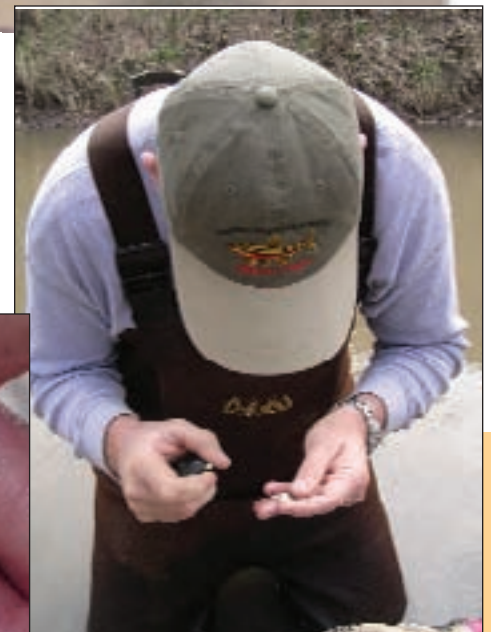


and/or designed to be more fish friendly. Agencies and companies must wade through mounds of red tape that we have the potential to avoid.

If we heed early warning signs and become proactive, we can prevent additional species from being listed. The result would be healthier aquatic resources, fewer governmental

Structures become serious barriers during low-water periods. Research is attempting to find out how much shiners move within a stream reach in varying water conditions.

Research depended on biologists' ability to mark shiners and recapture them.



regulations, and a savings of tax

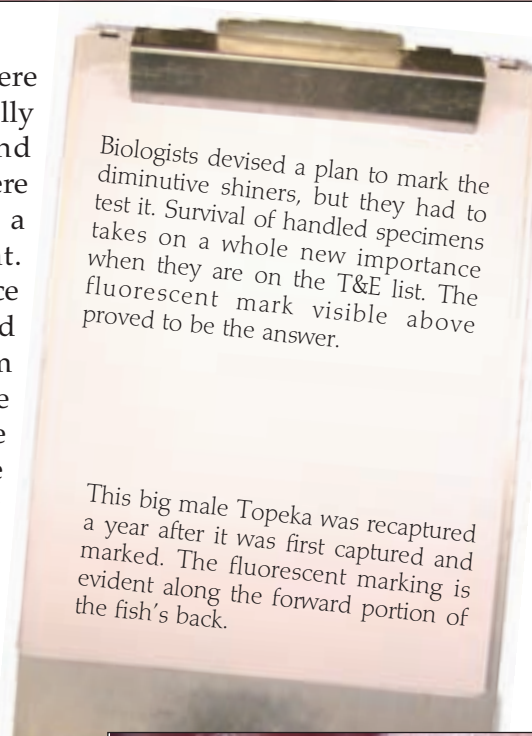


dollars.

The obvious questions here are, "Do Topeka shiners really move?" "How much?" and "Why?" These questions were posed several years ago by a Kansas county's consultant. The county needed to replace two narrow, dilapidated bridges over different stream segments. To save money, the county wanted to use one large culvert over a single stream segment. The project required major changes to the existing stream channel, which was highly valued habitat and supported perhaps the best Topeka shiner population in Kansas.

Answering those questions was especially difficult because there was little data and research. These are rare fish, and collecting even just five to 10 individuals out of prime habitat is noteworthy. Furthermore, it takes significant amounts of time and effort to collect and publish these data.

Research for large river fishes indicate that fish can move at least 70 miles between summer and winter habitats. They spend a majority of their time trying to



Biologists devised a plan to mark the diminutive shiners, but they had to test it. Survival of handled specimens takes on a whole new importance when they are on the T&E list. The fluorescent mark visible above proved to be the answer.

This big male Topeka was recaptured a year after it was first captured and marked. The fluorescent marking is evident along the forward portion of the fish's back.



locate suitable habitat, find food, seek refuge during floods or drought, and locate adequate spawning areas. Thus, it seemed reasonable that Topeka shiners would move a mile or two within a stream channel.

After considerable effort, KDWP's Environmental Services Section staff worked with the designer, the county, landowners, and several government agencies, and the project proceeded, with some strings attached. The main thread was a form of monitoring for both stream stability and fish population status to learn what the ramifications of this type of construction are to this species.

This ongoing research effort originated when we began trying to figure out what experiments we could develop to help us understand the critical needs of the Topeka. First, we had to find the fish. Before the construction began, we obtained some baseline information for comparison prior to stream location. This included number of species present and channel stability.

During the first year, we diligently seined the area for shiners with nary a Topeka for the effort. I entertained the notion that this

creek might be added to the list of lost historic sites. We focused efforts downstream above the next road crossing, also with no luck. Our attention then focused on the downstream crossing because we realized it must be a barrier for this fish species. This became evident when we pulled the first seine across the shallow pool below the vertical outlet pipe exiting the slab crossing, and about 30 brightly-colored male Topekas were pulled from the pool. This was exciting because we had located our fish, but it posed a new set questions.

It was obvious Topekas couldn't cross at low flow, but what about a high flow? We decided that if we marked these fish somehow, we could potentially answer this as well as the other questions.

Our first concern was how we could mark federally endangered fish without killing some of them.

The second problem was ensuring the mark was evident and retained in the fish. We were fortunate to have the opportunity to use surrogate animals housed at Kansas University's Biological Station to test the effects of marking on captive-raised fish before we started needling wild fish. The marking experiment was a great success. We marked more than 200 fish and only lost one to the process, and the fluorescent mark was retained in a high percent of individuals. This provided the confidence we needed to proceed with the research.

Our experiment site consisted of 1) the most upstream section at the new culvert, 2) the "perched culvert," and 3) 63 pools downstream, encompassing nearly 3 miles of stream. During the initial seining effort, almost 1,600 Topeka shiners from many different habitat types were collected and marked. This habitat consisted of nearly shoulder-deep pools to pools 6 inches deep, with substrate that included everything from solid bedrock to silt.

The study area was also divided into different segments, so the fish could be traced back to where they were marked. Our

hopes for the second sampling was to see how many additional Topeka shiners could be caught, how many of the marked fish could be recaptured, where those marked fish moved to and from, how far they moved, and if they crossed the perched culvert.

During this second sampling, nearly 3,000 fish were caught, with a large number of recaptures, indicating various degrees of movement. As previously stated, this is an ongoing study, but to date, no Topeka shiners have traversed the perched culvert, and the largest movement was indicated by an individual shiner marked in the pool at the perched culvert that traveled nearly two miles downstream in the very last pool of the study area. Most of this work occurred during the last two years, while we were in drought. With all the rainfall in 2007, it appears this year will be a different story. KDWP biologists conducted another trip this summer to see what the effects of this year's high flows are. (Results not available as of this writing.) We hope to find marked fish above the barrier, but if not, there could be some discussions later as to how to help alleviate this concern.

We are very fortunate that this rare fish species can still be found in a few Flint Hills streams in large enough numbers that this type of research can be done. It helps us understand ecological needs, in hopes to provide additional information to further protect the Topeka, or better yet, get its population to rebound and eventually allow it to be removed from its protected status. ♡

This road project was the catalyst for the shiner study. And even though it would appear that the bridge could allow fish to pass, this type of bridge can be just as much of a barrier as a culvert system.







# Dove Data Guides Management

text by Helen Hands

*wildlife biologist, Cheyenne Bottoms Wildlife Area*

photos by Mike Blair

***Data obtained through the dove banding program will help biologists make good management decisions, and hunters are again asked to be on the lookout for bands on doves they harvest this year.***

**M**ourning doves are one of the most widely distributed and abundant birds in North America. Mourning doves are also a popular game bird and are hunted in 39 of the lower 48 states. In fact, in the United States more mourning doves are harvested than all other migratory bird species combined. In Kansas, about 36,000 hunters harvest 800,000 mourning doves per year.

Certain information is required for wildlife managers to make informed harvest management decisions. One key piece of information needed is dove harvest rates — the percentage of the dove population that is harvested during the season. Harvest rates are essential to understanding the effects of annual hunting regulations on mourning dove populations. Wildlife managers use banding as the primary tool to

obtain this information.

Mourning doves are captured in wire ground traps baited with millet or sunflower. Doves enter the trap through the funnels in search of the grain but cannot get out because of the trap's design. Traps are checked regularly and trapped doves are removed and carefully examined to determine their age and sex based upon feather color and patterns of feather replacement



Doves are caught in walk-in cage traps. Age, sex, and location of each bird is recorded so that if a hunter turns in the band, the bird can be traced to its capture site. Biologists are interested in learning more about hunting's impact on dove populations

and wear. Doves are then banded with U.S. Fish and Wildlife Service bands inscribed with unique numbers and a 1-800 telephone number and immediately released.

During the summers of 2003-2005, Kansas, along with 29 other states, participated in a three-year nationwide mourning dove banding study. The objectives of this study were to determine mourning dove reporting and harvest rates, provide information on the geographical distribution of the harvest, and develop and refine techniques for a future long-term dove-banding program.

During 2003-2005, 4,100 doves were banded in Kansas. Hunters reported approximately 56 percent of the banded doves that they harvested to the Bird Banding Lab. The harvest rate for adult doves averaged 4.5 percent and the harvest rate for juvenile doves averaged 5.2 percent during the study. Of

Kansas-banded birds that were harvested, 75 percent were shot in Kansas. Hunters in Texas, Missouri, and Oklahoma also harvested Kansas-banded doves.

Banding continued in the summer of 2007 and will continue into the future to allow harvest rates to be calculated annually. The hunter is a critical link in this mourning dove banding project. By checking all harvested doves for bands and reporting banded doves, they help us manage this important migratory game bird resource.

Because dove bands are very small, hunters can easily overlook them. KDWP reminds dove hunters to carefully check all doves harvested for the presence of leg bands. If you harvest a banded mourning dove, please call 1-800-327-BAND (2263) to report it. Banded birds may also be reported on the Internet at [www.reportband.gov](http://www.reportband.gov). Hunters may keep the bands and will be provided a certificate identifying

the age and sex of the bird, as well as the date and location the bird was banded. From these reports, wildlife managers receive important information on the number of banded doves harvested and location and date of harvest. This enables us to better manage the resource and help ensure the future of mourning dove seasons in Kansas.

This year, in addition to the banding program, some dove hunters may be asked by the U.S. Fish and Wildlife Service to provide one wing from every mourning dove they shoot. This is a pilot program to determine the feasibility of a nationwide wing collection survey similar to that used for ducks and geese. Each wing submitted by a hunter will be classified as adult or immature. The ratio of immature to adult wings would then be used to estimate reproductive output, which is the main factor affecting dove populations annually. ♡

Edited by Mark Shoup

## ALBINO CATFISH

Editor:

I am sending a picture of a pure white catfish that I caught at the Shawnee State Fishing Lake this summer. I was wondering if this is an albino catfish.

I would also like to thank you for publishing such a great magazine. I have lived in Kansas my entire life, and your magazine really shows the magnificence that this state has to offer. Thanks again for your great publication.

*Derek Skinner  
Topeka*

Dear Mr. Skinner:

Yes, that is indeed an albino catfish. As stated in the March/April 2007 issue of *Kansas Wildlife & Parks* magazine (Page 41), "Albinism (from the Latin *albus*, meaning "white") is a form of hypopigmentary disorder acquired at birth and characterized by a lack of dark pigment in the eyes, skin, scales, feathers, and hair of animals and humans. Albinism affects mammals, fish, birds, reptiles, and amphibians."

Thanks for the picture. Looks like you were having a great time.

—Shoup



## WHO'S BUFFALO BILL?

Editor:

I read with great interest Mark Shoup's story, "The Last Buffalo" (*Kansas Wildlife & Parks* magazine, July/Aug. 2007, Page 24). However, he stated that Bill Cody was hired by the railroad to transport the buffalo. I have a term paper written by Mr. Tim Buckley who graduated from Wichita State written about Buffalo Bill Mathewson. Mathewson was a scout for the cavalry, friends with most Indians of the plains, a buffalo hunter, and trading post operator.

The stories from this time period differ somewhat, but Buckley's grandfather or great-grandfather was a friend of Bill Mathewson, who resided in Wichita from the late 1800s until his death. Mathewson owned land in Wichita known as Mathewson pasture, which was eventually platted and houses built on it. I was born in a house on Wabash Street that was part of the land.

Bill Cody got the "Buffalo" added to his name because he traveled with the meat to destination. Mathewson is the original "Buffalo Bill" because he was the buffalo hunter. Mathewson is buried in Wichita on Hillside Street. I believe the paper written by Buckley to be accurate.

*Dennis Dye  
Wichita*

Dear Mr. Dye:

You are correct in stating that Bill Mathewson was the first person known to carry the nickname "Buffalo Bill," a little-noted but interesting historical fact. This does not, however, disprove that "Buffalo Bill" Cody was a buffalo hunter and was hired by the railroads to supply meat to rail crews. This is a fact well documented in many sources.

One example is *Kansas: A Cyclopedia of State History*, a two-volume history edited by Frank W. Blackmar, PhD, and published by Standard Publishing Company of Chicago. Pages 249-250 from Volume I state the following:

"The sobriquet of 'Buffalo Bill' is claimed by two men, both of whom won the appellation in Kansas. These men are William Mathewson, a pioneer of Wichita, and William F. Cody, better known in late years as proprietor of the 'Wild West show.' Although the latter is more widely known, there is little doubt that Mathewson was the first to receive the title of Buffalo Bill. He gained the name of Buffalo Bill in the winter of 1860-61 by supplying the settlers with buffalo meat.

"William F. Cody contracted to furnish the Kansas Pacific Railway with all the buffalo meat required to feed the laborers engaged in construction, and in 18 months (1867-8) killed 4,280 buffalo, earning the name of 'Buffalo Bill,' by which he is best known."

Both carried the nickname of Buffalo Bill, just like many people carry the same nickname today. But the real point of the article was to describe the dramatic swiftness of the American bison's demise.

—Shoup

## CAPITALIZE CONVENTION

Editor:

I just finished going through the latest *Kansas Wildlife and Parks* magazine. It was an excellent edition. I especially enjoyed the article by Mike Rader.

I do want to point out one thing about capitalizing the common names of birds. The American Ornithologists' Union's Checklist of North American Birds capitalizes the common names of birds as does every other major bird journal in the world. While I know this goes against the Chicago Style Manual, it is the way it is done in ornithology and papers dealing with birds. I just don't like to see Kansas out of step with the rest of ornithology.

Keep up the good work on the magazine. My copy goes to the local hospital where I am sure it is read a dozen times.

*Max C. Thompson  
president, Kansas Ornithological  
Society Winfield*

Dear Mr. Thompson:

Thanks for the email. All popular publications follow some kind of style guide, and ones that specialize in a particular topic often have their own guidelines regarding capitalization. We have always followed the *AP Style Guide*. We try to be consistent, capitalizing only what are considered by the AP guide, as well as all standard English grammar books, to be proper names.

I understand that scientific and technical journals do things differently, but I consider capitalizing bird names or any other wildlife name a style preference. Our style is to not capitalize wildlife names, unless they are named for a person, place, or other proper noun.

—Miller

### TRUE RIO?

Editor:

I am writing in response to a comment in the May/June 2007 issue of *Kansas Wildlife & Parks magazine* by Jim Pitman (Page 50), small game coordinator, Emporia. I am the person who shot the 6th (tie) largest scoring Rio Grande turkey in Kansas in Stafford County that Mr. Pitman is doubting is a true Rio Grande.

Since the late 1980s, I have shot numerous Rio Grande turkeys in central Kansas and numerous eastern turkeys in eastern Kansas and Missouri. As Mr. Pitman states, "a small, isolated pocket of pure easterns were stocked in Stafford County."

I've shot enough turkeys over the years to feel 99 percent confident the bird I shot was a true Rio Grande. Most veteran turkey hunters who have shot more than one sub-species of turkey will know from the bird's coloration, call response, habitat, etc. the sub-species.

I am offended that Mr. Pitman is making assumptions without seeing the bird, or knowing the details. I have the tail fan, feet, and beard of the bird in question hanging on the wall beside me as I write this letter. I will gladly send him any part of it for his examination to remove his doubt.

Steve Patchin  
Independence, Missouri

Dear Mr. Patchin:

I didn't mean to take anything away from the bird you harvested in Stafford County, but outward appearance is not a reliable method to classify a turkey as being a pure subspecies. The different subspecies readily hybridize when they occupy the same habitats, and the resulting hybrids can have the outward appearance of either parent.

Just a few years ago we funded a research project that genetically compared our Kansas birds to known populations of pure eastern, Rio Grande, and Merriam birds in other states. Several samples were taken from Stafford County and elsewhere across the state for comparison. Given the results from this research and our history of releasing both eastern and Rio Grande birds in Stafford County, it would not be possible to accurately classify your bird without genetic testing. This would be costly and time consuming and is exactly why we don't differentiate between the different subspecies in our Kansas turkey records.

In the opinion of the Kansas Department of Wildlife and Parks, a turkey is turkey regardless of subspecies. Thus, if your bird has the outward appearance of a Rio Grande, then I say that is what you should call it. Regardless of the subspecies, you harvested a great bird, and I congratulate you on your success.

—Jim Pitman, small game coordinator, Emporia

### KUDOS ON DEER RULES

Editor:

I would like to thank and congratulate KDWP and its leadership for the new deer hunting laws made possible by the Kansas Legislature's passing and the Governor's signing of House Bill 2437.

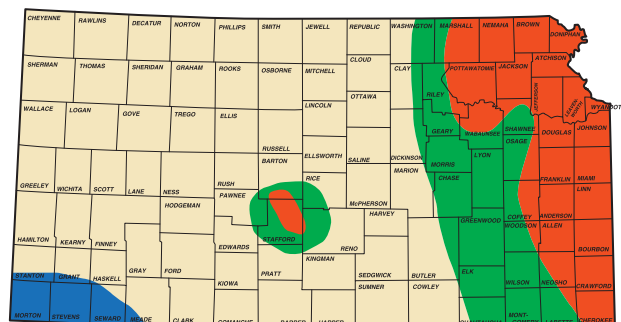
I really appreciate the fact that the leaders of our state's deer management program have finally listened to the often-stated ideas, needs, and concerns of the KDWP Deer Task Force and to the Kansas deer hunters who have long supported the state's deer herd.

I have voiced my personal and strong concern and conviction that resident Kansas deer hunters were being taken for granted and slighted at the expense of guide services and out-of-state hunters. In my opinion, this new legislation does a commendable job of addressing and lessening the concerns and frustrations of many Kansas deer hunters.

There is little doubt that this is a complex issue, but I encourage the leadership of KDWP to continue to listen to the trained biologists who they have hired to manage the Kansas deer herd and to the Kansas residents who pay the majority of the bills. Let's keep deer hunting in Kansas an experience that can be enjoyed by all sportsmen and women who care to partake and not just for those who would make it a business and the domain of a privileged few.

Greg Markowitz  
Cottonwood Falls

### APPROXIMATE DISTRIBUTION OF WILD TURKEY SUBSPECIES IN KANSAS



- Eastern
- Eastern-Rio Grande hybrid
- Rio Grande
- Rio Grande-Merriam hybrid

## DEATHLOCKED BUCKS

Every year, natural resource officers (NRO) and other KDWP staff answer calls from people who have found fighting whitetail bucks with antlers locked. While an interesting phenomenon, it is often a deadly one for one or both of the bucks involved. Last summer, NRO Bruce Bertwell, Olathe, sent me some pictures and a note regarding such situations he had encountered. He relates the following events:

"One landowner called to tell me two bucks were on his place and seemed unable to separate. He said both deer were alive, but when I got to the scene, one was dead. The other one was very much alive and could move around some, even though it had to move the weight of the dead animal. Locked deer can often be separated by altering just one or two points of antler contact. I was by myself, so I decided to shoot the deer apart with my sidearm.

"I thought it would be less traumatic to the living deer if I shot at an antler tine on the dead one. I fired three shots without success, but with the fourth, I finally broke an 8 1/2-inch piece of antler tine from the living deer. That did the trick. The deer were separated. The survivor hesitated a bit then took off.

"Other Conservation Officers have told me about their experiences with bucks that lock antlers while sparring during the



rut. The method of separation depends on the condition of the animals when they are discovered. If one of the animals is dead and the other is weak, or both are weak, a saw can sometimes be used effectively. Very weak deer don't always make it despite one's best efforts. I know of an officer who shot two bucks apart using shotgun slugs. Another reported using shotshells with success at very close range."

Bertwell sent me several photos of two dead, locked whitetail bucks that were found in a brushy patch at the edge of a Johnson County golf course. But as he said in his memo, they are "a tad grim" to print here.

Two other shots he sent depict a scene in which he assisted NRO Glenn Cannizzaro with a live whitetail buck locked with the remains of another buck.

"It appeared that scavengers had worked on the dead deer," Bertwell said. "The live deer was in poor condition and had a badly damaged eye. The two had obviously been locked for awhile, so we had to put it down."

While this is one of the more unpleasant jobs KDWP officers have to deal with, sometimes the outcome is more rewarding. The other photo shows two locked bucks – one exhausted but still alive – that were successfully separated and saved from a grisly fate, had they not received human intervention.

–Shoup

The following are new hunting laws and regulations for 2007.

## New For 2007

### Big game

The Wildlife and Parks Commission may annually issue as many as 10 youth "Hunt of a Lifetime" deer permits. The permits are designated for youth younger than 21 who are handicapped or experiencing life threatening illnesses.

### Licenses and Permits

Delinquent child support debtors may not purchase licenses or permits issued by KDWP.

### Hunter Education

A person who is 16 or older may obtain a one-time deferral of hunter education completion. Individuals will be able to purchase an "apprentice hunting license" to obtain the deferral and must be accompanied by a licensed adult 18 or older while hunting. The deferral will be valid through the end of the license year in which the apprentice license is purchased.

Bowhunters younger than 14 no longer need to complete a bowhunter education course prior to obtaining a big game permit.

### Game Breeders

Holders of game breeder permits may recapture any game bird that has escaped from confinement if the escaped bird is one the breeder is permitted to raise and sell.

–Shoup

**WAY** outside

BY BRUCE COCHRAN



"I LOVE YOU TOO, DEAR... HUGS AND KISSES  
TO YOU TOO, SWFFTUMS... BYE NOW"

**FOXWORTHY NHFD  
CHAIRMAN**

Sept. 22 is the date for this year's National Hunting and Fishing Day (NHFD), a celebration of the contributions of hunters and anglers to outdoor recreation in the U. S. that began more than 100 years ago. This year's honorary chairman is comedian Jeff Foxworthy. For all his accomplishments – best-selling comedy recording artist of all time, Grammy nominee, popular radio show host, best-selling author, star of hit comedy tours, television series and movies, plus host of a new hit game show – Foxworthy is equally enthused about a recreational passion he shares with 64 million other Americans: hunting and fishing.

"It just drives my wife crazy," laughs Foxworthy. "She goes, 'We get invited to the Oscars. You turn that down. We get invited to the Grammys. You turn that down. But you never turn

down a hunting or fishing trip.' I always explain, 'Well, if I have my choice of putting on a tuxedo and going out to L.A. and sitting around with people I have nothing in common with, or going out to Kansas to hunt a monster whitetail, it's not much of a chin-scratcher.'"

It's Foxworthy's rare combination of box-office star power and bait-shop modesty that makes him a perfect honorary chairman for this year's National Hunting and Fishing Day, set for Sept. 22.

"I'm flattered to be asked to serve as 2007 honorary chairman of National Hunting and Fishing Day (NHFD). Without question, sharing hunting and fishing trips with my family had a profound impact on my life, and undoubtedly shaped and molded the person I am today," he says.

NHFD highlights the fact that across North America, sale of hunting and fishing licenses, along with special excise taxes on hunting and fishing equipment, provide

almost all funding for conservation programs. Wildlife biologists, conservation officers, land managers, and others who take care of America's wildlife resources couldn't do their jobs without hunters and anglers.

"A wise person once said, 'Hunt with your kids today, and you won't have to hunt for them tomorrow,'" Foxworthy quotes. "I think there's a lot of truth in that saying. And I try to take my girls hunting and fishing with me whenever the opportunity arises. The outdoors offers a perfect avenue for building strong relationships and

bonds that will last a lifetime."

In Kansas, events celebrating this day will take place statewide. KDWP will conduct several events, including one at the agency's Operations Office. Events will include activities such as kids' fishing contests, shooting skills training, archery shooting, pellet gun shooting, and much more. Private conservation organizations will conduct events, as well. For information, contact the nearest KDWP office.

—adapted from the NHFD website, [www.nhfd.org](http://www.nhfd.org)



**Kansas  
Native  
Plant  
Society**

**NATIVE PLANT SOCIETY**

The Kansas Native Plant Society (KNPS) was established in 1978 as a nonprofit organization known as the Kansas Wildflower Society. Since then, KNPS has not only changed its name, it maintains a website featuring a wide variety of native plant information, offers educational programs to schools and other groups, publishes a quarterly newsletter for members, and provides resources for plant identification, stewardship, and propagation.

The organization also conducts field trips across the Sunflower State, exploring native plant communities and educating and entertaining participants.

In addition, KNPS conducts an annual membership event that will be held Sept. 21-23 this year in Hutchinson. Participants will visit the sand prairies in and around Reno County. The weekend will also include educational programs, a photo contest, and dinner.

For more information, email KNPS at [email@kansasnativeplantsociety.org](mailto:email@kansasnativeplantsociety.org) or visit their website, [www.kansasnativeplantsociety.org](http://www.kansasnativeplantsociety.org). A list of events held throughout the year may be found on the website.

—Shoup

## More Cabins

KDWP opened two new rental cabins in July, one at Ottawa State Fishing Lake and the other at Mined Land Wildlife Area's Trout Pit 30. Both offer all the amenities of home, such as a hot shower, complete kitchen, refrigerator, stovetop, and microwave, as well as an outdoor patio with gas grill and picnic table. Each will accommodate six people and are available year-round.

Renters must bring their own blankets, sheets, soap, shampoo, pillows, towels, and grilling sup-



plies. Cabin rates are \$60 per night plus a non-refundable \$10.50 reservation fee. A damage/cleaning fee of \$60

will be collected if the cabin is damaged or left unclean at checkout.

Ottawa's main attraction is fishing, but limited hunting is available, and a few special draw hunts occur annually. Reservations for the Ottawa cabin may be made by telephone, mail, or in person at the KDWP Region 1 Office, 1426 Highway 183 Alt. in Hays. Phone reservations – 785-628-8614 – require a credit card payment. More

information may also be obtained by emailing [reg1temp@wp.state.ks.us](mailto:reg1temp@wp.state.ks.us).

The Mined Land Wildlife Area cabin is located on Unit 30 of the area overlooking Trout Lake. Mined Land offers fishing, hunting, and wildlife viewing. The trout lake is a clear, deep-water strip-mine lake known best for its trout fishery. A trout stamp is required for all anglers fishing the Trout Lake.

To ensure availability, reservations should be made seven days prior to the arrival date. To make reservations or for more information, write KDWP, P.O. Box 777, Chanute, KS 66720, or phone 620-431-0380.

KDWP offers these and 48 other cabins on state parks throughout the state. For more information, go to the agency website, [www.kdwp.state.ks.us](http://www.kdwp.state.ks.us), and type "cabins" in the search box.

—Shoup

## OUTDOOR ECONOMICS

In 2006, more than 87 million Americans age 16 and older hunted, fished, or observed wildlife. ("Observed wildlife" includes those who fed, watched, or photographed wildlife.) They spent \$120 billion that year pursuing those activities – an amount roughly equal to America's total spending on all spectator sports, casinos, motion pictures, golf courses, amusement parks, and arcades combined.

Preliminary data from the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation reveal that, of all Americans age 16 or older, 30 million fished and spent \$41 billion on their activities; 12.5 million hunted and spent \$23 billion; and 71 million observed wildlife and spent \$45 billion. This \$120 billion is roughly equivalent to one out of every one hun-

dred dollars of goods and services produced in the U.S.

The National Survey of Fishing, Hunting and Wildlife-Associated Recreation is considered to be the definitive source of information concerning participation and expenditures associated with hunting, fishing, and wildlife watching nationwide. The survey is conducted at the request of state fish and wildlife agencies and is funded by grants from the Multistate Conservation Grant Program.

It is important to note that the National Survey is a snapshot for the specific year in which it is conducted and does not necessarily represent the total number of anglers, hunters, and wildlife watchers in the U.S. because they do not consistently participate every year. For example, examination of survey data shows that over the five-year period from 2002 to 2006, cumulatively more than 44.4 million fished and

18.6 million hunted. However, this information serves as a valuable tool to gauge general trends in the participation of Americans in wildlife related activities and related expenditures.

A complete survey, including individual state statistics will be available online later in the year at [library.fws.gov](http://library.fws.gov).

—Mathews

## KANSAS 8 WONDERS FINALISTS

Scott State Park and Cheyenne Bottoms are among 24 finalists for the Eight Wonders of Kansas, a project launched by the Kansas Sampler Foundation. Architecture, art, commerce, cuisine, customs, natural resources, history, and people will be considered.

Scott State Park, one of 24 parks operated by KDWP, has generated a legion of fans over the years. An oasis of natural springs, deep wooded canyons, and craggy bluffs,

the 1,020-acre park is located 14 miles north of Scott City in western Kansas. Rich in history, the park is home to the remains of El Cuartelejo, the northernmost Native American pueblo in the U. S.

Cheyenne Bottoms Wildlife Area is internationally known for its importance to migratory birds. Acquired by KDWP in the 1950s, Cheyenne Bottoms is managed to provide hunting opportunities and important habitat for migrating shorebirds and waterfowl.

Interested persons can learn more about each site at [8wonders.org](http://8wonders.org). Public voting is underway now through Dec. 31. On Jan. 29, 2008 (Kansas Day), Gov. Kathleen Sebelius will announce the Eight Wonders of Kansas as determined by public vote.

Online voting is highly encouraged but brochures and ballots can be obtained from the [8wonders.org](http://8wonders.org) website or by calling 620-585-2374.

—Mathews



## Other September Birds

Most hunters know that dove season opens Sept. 1, and many consider this the traditional opening of hunting season. For bird hunters who want to get in on the action early, September offers seasons for three other species in September: Virginia and Sora rail, common snipe, and woodcock.

Rail season runs Sept. 10-Nov. 9 with a daily bag limit of 25 and a possession limit of 25. Snipe season runs Sept. 1-Dec. 16 with a daily bag limit of eight and a possession limit of 16. Woodcock season runs Sept. 13-26 with a daily bag limit of three and a possession limit of six. All seasons are open statewide.

—Shoup

## Dove Primer

Dove season runs Sept. 1-Oct. 14 and Nov. 1-16. The daily bag limit is 15, and the possession limit is 30, single species of any combination of the four species that may be taken. Although four species of doves may be taken in Kansas — mourning, white-winged, ringed, and Eurasian collared — mourning doves are the predominate species. Other than the mourning dove, the most likely dove to be taken is the Eurasian collared dove. This dove stays primarily in towns, but hunters who have permission on the edge of a small town may have an opportunity to take this species.

This is the fifth year of a dove banding program, and hunters are asked to look for leg bands on mourning doves and

report them through the toll-free banded bird hotline, 1-800-327-BAND. Bands from banded doves do not need to be returned to the U.S. Fish and Wildlife Service, but the information on the bands is essential to monitor dove populations.

Mourning doves can be found just about anywhere, but they generally prefer open farm country with scattered trees. During the day, they often loaf on power lines near crop fields. At night, they roost in large trees such as cottonwoods. They are often seen on gravel roads picking up grit.

Hunters usually locate a field where they are coming to feed in the morning or evening. The best feeding areas are worked or burned wheat stubble, worked corn stubble, or sunflowers although they'll eat waste from almost any crop harvest.

Farm ponds also provide good morning

and evening hunts as the birds come in for a drink. It's best to pick a pond that is surrounded by short grass or bare banks, such as a pasture pond. The birds avoid landing in tall grass or weeds. Overflow from stock tanks also provide good water holes for doves, and many KDWP wildlife areas provide these.

Setting up near shelterbelts or other timber where doves roost is another good strategy for an evening hunt, but this is dove hunting at its most challenging. Birds may approach flying high, dipping and weaving at full speed.

Residents 16 through 64 years old need a Kansas hunting license to hunt doves, unless exempt by law. All nonresidents are required to have a license. Anyone required to have a hunting license must also have a Harvest Information Program (HIP) stamp.

—Shoup

## ALMOND PARMESAN TURKEY

With fall turkey season beginning Oct. 1, here's a recipe courtesy of Sue Lingenfelter, Gridley. This was offered at the Flint Hills Gobblers Chapter of the National Wild Turkey Federation banquet in eastern Kansas in June. It looks like a great way to spice up the traditional Thanksgiving dinner.

—Shoup

**Preparation time:** 30 minutes

**Cooking time:** 15-20 minutes

**Serves:** 4-6 people (or more)

### Ingredients:

Turkey breasts

1 1/2 cups seasoned bread crumbs

1/2 cup Parmesan cheese

1 cups almonds—finely chopped or slivered

1 1/2 cups flour seasoned with salt, pepper and garlic powder

2 eggs

1 1/2 cups milk

Olive oil as needed for frying

Slice meat from filleted turkey breasts into 1/4-inch cutlets. Dredge cutlets in bowl of seasoned flour. Dip cutlets in bowl of blended eggs and milk. Roll cutlets in bowl of seasoned bread crumbs, parmesan cheese, and chopped/slivered almonds. Heat about 7 inch of olive oil over medium high heat. Cook the turkey breast cutlets on both sides until evenly brown; drain on a paper towel. Serve with some of your favorite side dishes and enjoy this recipe.



# With Wings Of the Dove



*For years fleet away with the wings of the dove.*

—Lord Byron

*by Mark Shoup*



While the dove is universally revered as the symbol of peace in the literary and political arenas, in the real world, it is the ultimate avian prey. Prolific, slow to take flight, and possessing some of the richest meat of all game birds, the dove is loved in the natural world for reasons very different from those held by poets and politicians. For me, the dove holds a special place of affection, both practically and symbolically.

Many of my fondest memories afield involve dove hunting. When I was a boy, my father and I always looked forward to September 1. The end of August was hot, but weeds and grasses dropped seed and began to dry; butterflies, grasshoppers, and other insects became restless, all of which charged the air with the aroma and barely audible hum of impending autumn.

In my youth, Dad closed his hardware store at 5:30, and on the evening of September 1, we could always be found along a shelterbelt near the Arkansas River or sitting by a pasture pond near Larned. In memory, the doves never stopped flying, and our guns stayed hot until our limits were full.

Dad's favorite hunting companion was an older man named Noel Spreier, and he often accompanied us. Noel always wore a wry smile, as if he knew something extremely humorous about life that no else knew, but he wasn't about to tell. Non sequiturs were his specialty. We might be driving to a prime dove hunting spot when Noel, out of the blue, would deadpan, "I once knew a man who tried to make butter out of chicken poop. Didn't work."

I think Noel went along just to get out of the house. His hearing was notoriously bad, and Dad and I would get a kick out of watching him sitting on a bucket near

a water hole, scratching in the dirt with a stick, oblivious to doves flying right over his head. No matter how loud we yelled at him from spots some distance away, he never heard or looked up. The doves, I believe, thought he was a fence post.

Years later, when I lived in Wichita, I usually came "home" for the dove opener. I remember one particular hunt when birds captured the sky like an invasion of locusts, and Dad and I both limited out well before sundown. Later, my mother told me that Dad had described the hunt to her with this simple statement: "Man, can that kid handle a gun. He's just so quick and safe." Although Dad was of a generation of men who found it difficult to praise their sons, I always knew he loved me. Knowing that he was proud of me was like receiving the Nobel Prize.

The piece d' résistance of every hunt was the dove pie my mother made from our quarry. When my wife, Rose, and I met, one of our first dates was a candlelight dinner in the park, with a bottle of good wine and a fresh dove pie I had baked from my mother's recipe. I figured any woman who would embrace this as a romantic meal was the woman for me; she did and she still is.

In 1989, I came to work for Wildlife and Parks, where the dove hunting tradition was very different. All the guys in our section – Information and Education – would take the first of September off to hunt doves in the morning, followed by an evening dove feed at one of our houses. Not only was the time of the hunt different (morning), so was the cooking method. Dove breasts were wrapped in bacon, grilled, and served with side dishes brought by the crew's families. I found this to be a delicacy equal to Mom's dove pie. (Sorry, Mom.)

The first hunts I took my sons on were

dove hunts. Logan was only about a year and one-half old when I took him to the Pratt Sandhills. Over the years, both he and Will served as supplemental retrievers until they were old enough to hunt themselves. And the boys and I took Dad on his last few hunts, for doves. When he was too old to hunt anymore, he remarked to me late one summer, "Oh, I so used to look forward to the opening of dove season."

Last summer, doves became an even richer part of my life. Logan, having graduated from high school, secured a summer job working at three local wildlife areas. Logan's many duties included trapping and banding mourning doves, part of a U.S. Fish and Wildlife Service project to track dove populations. Among other places, Logan set traps at our farm north of Pratt.

He set five traps there, and I sometimes helped him check them. With doves in the trap, my son taught me things I never knew about one of my favorite birds. He demonstrated how to determine a bird's stage of molt by examining what primary wing feathers had molted, the bird's age by the color of the secondary wing feathers, and the bird's sex by the coloration of the head and neck. Along with location of the traps, I wrote this information down beside the number of the band Logan clamped on each bird with a special tool.

Then he released the bird – banded with the mark of a man but free to fly where it may. I watched as the bird took flight and disappeared in a frame of dense white clouds scrolling skyward, ivory edges bathed in tungsten light, unchained and changing more rapidly than I could note – the clouds, the son, time itself – fleeting away with the wings of a dove.



## Polarized Bifocals

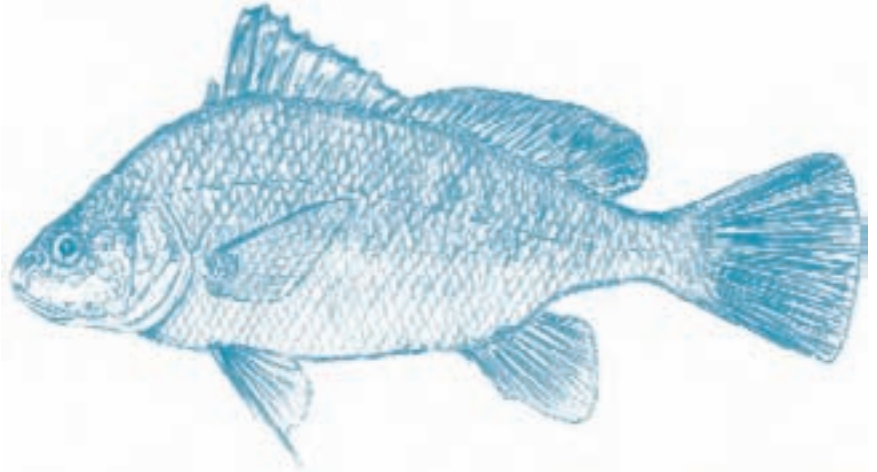
Older eyes, glare from water, and thin fishing line can spell trouble for middle-aged anglers. Presbyopia, a common condition that robs close-up vision and often forces the use of bifocals for people older than 40, is especially troublesome for anglers struggling to tie knots on thin fishing line in difficult light.

Enter a line of new fishing glasses from Ono's Trading Company, designed especially to provide polarized bifocal sunglasses with diopters ranging from 1.50 to 2.50. Although this range of correction may be limited for some, these glasses provide 100 percent UVA protection, polarization to reduce glare on water, and in most cases restore normal short-range vision. Through built-in diopter inserts, the glasses allow detailed sight for tying delicate knots or reading, while providing a clear, uncorrected view through the larger lens portions.

I use a pair of Oak Harbor glasses from Ono's, and these have definitely improved my fishing enjoyment. Before, I tried flip-down diopters attached to a cap, or had to dig for pocket reading glasses, juggling them with normal sunglasses as I changed tackle. The Ono — matched to my own eyesight with 1.75 diopters — let me fish hassle-free with great sun protection and instant detailed close-up vision.

On the downside, these glasses are a bit pricey, with styles ranging from \$59 to about \$150. But they are also sunglasses, and compared to prescription glasses that may cost \$200 or more, the Ono may be just the right alternative for many anglers whose "arms have grown too short."

—Blair



## Beat Your Drum

**L**ooking for a hard-fighting fish? Bag a drum. Like the carp, it's the Rodney Dangerfield of the fish world. Neither gets any respect.

In Kansas, drum are not considered sportfish, but on the East Coast, a closely-related species called red drum, also known as redfish, is so highly-regarded that tournaments are held to catch them. They are considered a highly prized game fish. Red drum are considered fine table fare in many restaurants, and many Cajun dishes aren't complete without some form of this fish.

You'll never see a southerner scoff at hooking one of these fish, even when fishing for other species. But that's exactly what happens in Kansas when anglers tangle with our own version of redfish, called the freshwater drum. But for anyone who enjoys a good battle with a hard-

fighting fish, there's no better adversary than the freshwater drum.

Last Memorial Day weekend, I loaded up enough nightcrawlers to choke a truckload of robins and slipped and slid my way down the slick bank of the Cottonwood River below Marion Reservoir to the fast flowing water. A simple rig with a 1/2-ounce egg sinker and a No. 4 bait holder hook kept a wadded web of worms steady at the edge of the current in a back eddy. Within seconds, I set the hook on a 3-pound drum, and the fight was on. Moments later, I released the fish at my feet, anxious to cast again.

The action was fast and furious for the next two hours. I caught drum after drum, most within two or three minutes of my bait hitting the bottom. I caught an occasional catfish or wiper, but I easily caught and released 60 drum weigh-

ing from 2 to almost 5 pounds each.

Soon, my friend Matt arrived, and after trying his luck pitching a lure for the more glamorous wiper and walleye, I handed him my pole with a 3-pound drum heading for the main current. He wasted no time and asked me to tie a hook and sinker on his rod as he landed my fish. Within seconds of casting his glob of worms into the rushing water, he had hooked a drum, amazed at how hard his fish fought. Another 90 minutes went by, and several times we had fish on at the same time. We likely caught another 30 fish, and I decided to put a few on a stringer for photos.

But don't get the idea that drum are just for fight and photos. Many seasoned anglers consider drum among the best table fare in Kansas waters.

—Murrell

## Freshwater Lobster

Most Kansans have had some experience with the state's largest crustacean, the crayfish, playing with them as children, using them as fish bait, or even eating them. Yes, the old "crawdad" is not only edible, it is quite delicious and easily deserves the moniker, "freshwater lobster."

Crayfish live in streams, ponds, lakes, and marshes, just about anywhere there is a permanent source of water. They hide beneath sticks or rocks, in caves, and even burrow in the mud. They are most active at night when feeding on snails, algae, detritus, insect larvae, minnows, and worms. Being cold-blooded, crayfish don't emerge from burrows or other hiding places until the water temperature reaches 50 degrees or more. They are among the first prey species to emerge in the spring, making them an important food source for bass and other species coming off a long winter.

In summer, males place a sperm packet (resembling a cotton ball) on the underside of the female's belly. She curls her tail and lays the eggs,

passing them through the sperm down on to her tail fan, where they attach to small swimming appendages called swimmerets.

Eggs stay on the tail for at least four weeks or more, depending on water temperature and other variables, such as food and water quality. The female protects them by curling her tail fan forward. As the water temperature rises, the small crayfish hatch. After hatching, the young crayfish stay



What most Kansans don't know is that all crayfish are not the same. The Sunflower State boasts 10 species of crayfish. They range in size from 2 to almost 5 inches, and color variation is diverse. Many also have colorful names. Here's a list, with the approximate largest size of each species:

- **devil crayfish** (*Cambarus diogenes*) – 4.8 inches;
- **calico crayfish** (*Orconectes immunis*) – 3.5 inches;
- **golden crayfish** (*Orconectes luteus*) – 4 inches;
- **Neosho midget crayfish** (*Orconectes macrus*) – 2 inches;
- **ringed crayfish** (*Orconectes neglectus*) – 3.8 inches;
- **gray-speckled crayfish**  
(*Orconectes palmeri longimanus*) – 3 inches;
- **virile crayfish** (*Orconectes virilis*) – 4.9 inches;
- **White River crayfish** (*Procambarus acutus*) – 4.9 inches;
- **prairie crayfish** (*Procambarus gracilis*) – 2.8 inches; and
- **no common name** (*Procambarus simulans*) – 2.8 inches.

attached to the female until she has shed her exoskeleton twice. Then they swim away. However, they may stay close to the female for some time, returning to the safety of her tail when they are threatened. Some species may grow enough to mate that season, and others may not mate until their second year.

KDWP has recently produced a color poster of Kansas crayfish that is free to science teachers across the state. The poster is also available to the public for the cost of shipping. Phone 620-672-5911 and ask for Mike Rader for more information.

—Shoup

## Beetle Parents

An endangered species, the American burying beetle belongs to a small group of beetles known to bury small, dead animals. This large, strikingly-colored beetle is nocturnal. It uses its sensitive antennae to detect the odor of a recently dead mouse or bird.

If an unmated male locates a carcass, he flies to a nearby perch and releases a pheromone to attract a mate. The mated pair of beetles move the carcass to a suitable site of loose soil and quickly bury it. Once underground, the feathers or fur are removed and the carcass is anointed with secretions to help preserve it from bacterial decay.

Parental care is rare in beetles but these adults remain underground to protect their young and regurgitate food directly to their larval offspring.

The American burying beetle was once found in 35 states across the eastern United States. Now it only occupies the eastern and western periphery of its former range. It has been documented in Rhode Island, South Dakota, Nebraska, Oklahoma, Arkansas and Kansas, with reintroductions attempted in Massachusetts and Ohio.

—Great Plains Nature Center

## COMMISSIONERS REAPPOINTED

Gov. Kathleen Sebelius has reappointed three members of the Kansas Wildlife and Parks Commission.

Kelly Johnston, Wichita; Doug Sebelius, Norton; and Shari Wilson, Kansas City, were reappointed for four-year terms. The seven-member commission works with the Kansas Department of Wildlife and Parks to conserve and enhance Kansas' outdoor recreation resources. Other commission members include Frank Meyer, Herington; Debra Bolton, Garden City; Gerald Lauber, Topeka; and Robert Wilson, Pittsburg.

—Mathews

## LIVING WITH WHITETAILED

The National Science Teachers Association (NTSA) has announced its review and recommendation of "Living with White-tailed Deer," an interactive classroom program on urban/suburban deer issues from the Quality Deer Management Association.

The program includes a three-part, DVD-based video and an interactive CD-ROM with printable support materials in PDF format. It is intended to serve as the basis for a week-long classroom activity for students in grades 7-12.

"Living with White-tailed Deer" meets national academic standards in environmental education, science, social studies, and civics.

"Living with White-tailed Deer" is available now from the QDMA for \$29.95, plus shipping and handling. Discounts are available to educators.

Phone the QDMA toll-free at 800-209-3337 for details. A video-based version intended for general-public distribution will be available from QDMA later this year. More detail may be found online at [www.qdma.com/press/07-19-2007recommend.asp](http://www.qdma.com/press/07-19-2007recommend.asp).

—Quality Deer  
Management Association

## BREEDING DUCKS UP

Last summer's report on breeding duck numbers from the U.S. Fish and Wildlife Service (USFWS) indicated a breeding duck population estimate of more than 41 million birds in the northcentral United States and southcentral and northern Canada.

This represents a 14 percent increase from 2006 and is 24 percent above the "long-term average" (1955-2006).

If the increased number of breeding birds translates to increased numbers of migrating ducks this fall, it could be good news for waterfowl hunters in Kansas and the rest of the Central Flyway. Most Kansas waterfowl management areas are holding plenty of water and should be in good shape when the seasons open this fall. Once the seasons begin, waterfowl hunters can keep track of duck numbers by going to the Kansas Department of Wildlife and Parks website, [www.kdwp.state.ks.us](http://www.kdwp.state.ks.us), and typing "waterfowl reports" in

the search box.

Late-migrating waterfowl seasons were set at the Aug. 16 meeting of the Kansas Wildlife and Parks Commission. The results may be found on the KDWP website or in the 2007 Kansas Hunting and Furharvesting Regulations Summary, available wherever licenses are sold. September teal seasons and include the following:

- Low Plains, east of U.S. 283: Sept. 8-23; and
- High Plains, west of U.S. 283: Sept. 15-22.

The daily bag limit is four teal with a possession limit of eight. Federal and state duck stamps and HIP stamps are required.

—Shoup

## SAND SCULPTURES

On Sunday, July 15, 17 teams of families and friends participated in the 12th Annual Sandcastle/Sculpture Contest hosted by Lovell State Park. According to park manager Rick Cleveland, the event gains more competitors with more creative ideas each year. Several hundred visitors came to the Southwinds Beach to watch the competition.

Sand Castle plaques and team choice of prize packages were awarded to first, second, and third places for the best sand castle or sculpture. All participants shared

more than \$300 in donated prizes. Prizes included gate admission tickets to Worlds of Fun donated by KRFS Radio and Oceans of Fun gate tickets donated by KREP Radio. Other prizes were drawn randomly, including "Shamu the Whale" and all his floating friends, t-shirts, hats, beach toys, and games.

The Hutches' First Time Out Team – Adam,

Isaac, and Matt Miller of Morrowville; Josh Vacek from Dorchester, Neb.; and Arnold Brown of Nelson, NE – earned first place with a sculpture of an Egyptian pyramid complete with stairs and Egyptian "eye" at the top.

The Johnson 5 of Mankato – Sonny, Miles, John, and Betty Johnson – received the 2nd place award for an elaborate sand castle decorated

with native grasses and evergreens. The 3rd place team was Team Burgundy – the Kaundart family from Smith Center – with a sand sculpture of a giant turtle.

"The Sand Castle Contest is an excellent event for families, friends, and individuals," said Cleveland. "It encourages good sportsmanship, team-

work, and creativity. It's neat to see families with children as young as two and grandparents in their 70s all working together on their entries. But we would not be able to host events such as this without generous sponsorship from area businesses.

—Lisa Boyles, administrative assistant,  
Lovell State Park





# Migration Trivia

Migration means to move from one place to another. With wildlife, it is a yearly thing that is marked by a need to find food or raise young. Nothing signals the beginning of fall or spring like



the sound of Canada geese overhead, fly south for the winter or north for summer.

Birds migrate to increase their chances of survival. Birds such as ducks, which breed in the far north, are able to take advantage of longer daylight hours in spring and summer. Longer daylight

means more time for gathering food and raising young.

Heading south in the winter is a natural way for a barn swallow to take advantage of insect populations it can no longer find in Kansas. Whatever the reason for migration, migrating animals depend on more than one habitat for their survival.

Most of the 27 species of ducks that frequent Kansas

## TEST YOUR MIGRATION KNOWLEDGE AGAINST THE FOLLOWING BIRD TRIVIA FACTS

from the book, *10,001 Titillating Tidbits of Avian Trivia*, by Frank Todd.

(Answers on next page.)

1. Approximately how many species of birds are migratory?
2. What percentage of the approximately 650 species of North American breeding birds are migratory?
3. Which small North American land birds migrate the farthest?
4. Which three American waterfowl undertake the longest migration?
5. Do most waterfowl migrate at night?
6. Which American hawk undertakes the longest migration?
7. Which American bird has the shortest migration?
8. How many of the New World quail are migratory?
9. Are all North American warblers migratory?
10. Do scissor-tail flycatchers migrate in flocks?
11. Are swallows among the earliest fall migrants in the temperate zone?
12. What are the names of the four American flyways used by migrating birds?

## TRIVIA FACTS ANSWERS

1. About 4,000 are considered migratory to some extent.
2. Nearly 80 percent migrate to some extent. Approximately 420 different species of birds have been recorded in Kansas.
3. The common nighthawk and barn swallow migrate between Alaska and Argentina. Barn swallows and common nighthawks are easily spotted Kansas residents in the summer. These small birds can travel a distance of more than 5,000 miles from Kansas to Argentina each fall and then make the return trip in the spring.
4. The northern pintail, green-winged and blue-winged teal. The migration habits of blue-winged teal set them apart from other North American waterfowl. They migrate faster and farther from their breeding grounds than other waterfowl. They can cross the U.S. in a matter of days.
5. Yes. Actually, all kinds of birds migrate at night. Birds like rails and woodcocks and most small insect-eating birds like wrens, cuckoos, thrushes and others also migrate by night. Using radar, scientists have determined that night migrations start soon after dark but that their numbers are greatest between 10 p.m. and 1 a.m., with the maximum number of birds observed between 11 p.m. and midnight.
6. The Swainson's hawk. Swainson's hawks are summer residents in the western half of Kansas. They migrate all the way to the pampas of South America for winter, a round-trip distance of more than 10,000 miles.
7. The blue grouse, if altitudinal movements are considered migration. Some grouse move only 1,000 feet between the wintering and nesting grounds although others may migrate 30 miles. Other birds that move very short distances include the mountain quail, black-capped chickadee and Clark's nutcracker.
8. None.
9. Yes. *Birds of Kansas* lists 42 warbler species although most are rare or uncommon transients. In numbers of species, the warbler family is the second largest family of North American songbirds. Finches are the largest family.
10. Yes, although flocking is not typical of most flycatchers.
11. Yes. Swallows gather in large flocks, often in the thousands, after nesting is over in the summer. During migration, these birds will assemble near marshes by day and roost at night among reeds. The ancient belief that swallows hibernate in marsh ooze probably arose from the sudden disappearance of large flocks of swallows due migrating southward.
12. The Atlantic, Mississippi, Central, and Pacific flyways. Kansas is located in the Central Flyway.

are produced in states and the Canadian provinces to the north. Although 14 species of ducks are known to have nested in Kansas, most of the resident breeding population, estimated at about

20,000 pairs, is comprised of wood ducks, blue-winged teal, and mallards.

The five most common ducks in Kansas are the mallard, northern pintail, green-winged teal, gadwall, and blue-winged teal. The blue-winged teal is the

last of the top five to arrive, peaking in late December. The mallard is king in our state, with numbers observed commonly reaching 300,000 during the second half of December.

Although small numbers of blue-winged teal winter in the extreme southern U.S., most continue flying south to wintering areas in Mexico, Latin America, and the Caribbean. A few wayfaring individuals cross the equator. One blue-winged teal banded near Renou, Saskatchewan, was shot six months later in Peru — 7,000 miles away.



first to arrive, peaking in September and early October. Northern pintail begin a major buildup in late October, with green-winged teal and gadwall arriving and peaking during the first half of



# Backlash

by Mike Miller

## I Like Trout

*"I fish because I love to; because I love the environs where trout are found, which are invariably beautiful; . . ." – John D. Voelker*

I love to fish, too. And I agree with the eloquent Mr. Voelker (pen name, Robert Traver), one reason I like to fish for trout is because of where they live – the clear, rushing waters of the Rocky Mountains. I've gone so far as to learn to cast a fly rod and have even managed to tie a few flies. But I'm no purist; not a *A River Runs Through It* groupie. Without guilt, I'll reach for a spinning rod and cast a Panther Martin if the wind blows away my ability to cast a fly. I like trout because some of my fondest and earliest memories are of fishing for trout with Grandma and Granddad in Colorado, and the mountains continue to pull on me.

It's easy to be drawn to the mountains, though. Only a cold soul is not spellbound by the vast peaks and valleys, especially in mid-September when the shimmering gold and orange aspen leaves are so vibrant you can *feel* the color. But it's more than scenery, and it's more than fly fishing. My wife and I return to the mountains each September; to get away; to recharge — and to remember Granddad.

I like trout for the same reason I like smallmouth bass. The glaciated region of northwest Ontario, a combination of endless lakes, islands, woods, and wilderness, captivates me. Smallmouth bass live there. I have to go back each June to soak it in with my father. We've made 18 trips to the northcountry, but we never get *enough*. Reservations for the next year are made on the day we depart.

I like trout for the same reason I like ring-necked pheasants. Some may not see beauty in the

flat Kansas farmland where they live, especially with mountains as comparison. However, one fiery sunset splashed over a sky so immense you understand your insignificance can change that.

There's a remodeled farmhouse in southern Kiowa County that I can't wait to visit each November. I swear there's no better place to bask in a crimson evening sky than from the front porch of that little house, nestled amidst the fields of stubble and CRP grass. To complete the ambiance, cock pheasants crow from their roosts across the road. I appreciate the subtle beauty of the open fields, and I love the rush of a close-flushing ringneck, but my father, my cousin and I return each fall regardless of bird population predictions and weather forecasts.

So what draws us to these places and traditions year after year? Is it the land, the trout, or the harvests? Perhaps a deeply embedded primal instinct prods us to travel, fish, and hunt. More likely, it's the desire to be with the people, in body or spirit, most important in our lives — the people who give these places meaning with memories, as well as hope. It's a smooth blend of people, land, experiences, and something to look forward to. Throw in a few trout, a pheasant or two and a half-dozen smallmouth bass, and you have ingredients for a happiness that permeates all facets of your life.

I return to these places year after year, not because I haven't found what I'm looking for, but because I have. ♡

*"For the supreme test of a fisherman is not how many fish he has caught, not even how he has caught them, but what he has caught when he has caught no fish."*

- John H. Bradley  
*Farewell Thou Busy World*

