KANSAS Wildlife & Parks

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On Point

by Mike Hayden

Prairie Chickens: A Kansas Treasure

On a cold spring morning in 1932, the last calls of a lonely heath hen were heard on Martha's Vineyard, off the coast of Massachusetts. This close relative of the prairie chicken became extinct due to many natural and man-made causes, but devastating spring fires on the heath hen's breeding grounds were ultimately to blame. More than 70 years later, it is sadly ironic that the greater prairie chicken in Kansas is declining under similar circumstances.

"The prairie chicken population in Kansas reached peak numbers during the late 1800s because the agricultural movement provided an optimum balance of food and cover," says Gerald Horak, former KDWP wildlife biologist who studied prairie chickens for 30 years. "But by the early 1900s the balance was no more, and the prairie chicken population started to decline."

Historically, prairie chickens disappeared throughout the Midwest as the tallgrass prairie was plowed up. Once covering approximately 142 million acres from Canada to Texas and Ohio to Kansas, less than 5 percent of the original tallgrass prairie remains in North America today, most of which is located in the Flint Hills of Kansas and the Osage Hills of Oklahoma.

The future of the greater prairie chicken rests within the tallgrass prairie of the Kansas Flint Hills. A layer of flint rock underlying the region's shallow soils has saved the Flint Hills from the plow, but urban sprawl, woody encroachment, overgrazing, and indiscriminate annual burning are all threatening the tallgrass prairie's ability to support prairie chickens. To understand how these factors impact prairie chicken populations, one must first examine the birds' basic needs.

For most of the year, prairie chickens prefer relative isolation and require a large, unfragmented home range. While the birds congregate during the spring mating season (March and April), they will not nest in close proximity of one another. Leks, or "booming grounds," are usually located on elevated, overgrazed or rocky areas where the males can display and compete for the attention of the hens. Areas with denser vegetation in the vicinity of the booming ground are required for nesting and brood rearing. This mix of tall and short grasses is essential.

"The optimal habitat for prairie chicken broods are pastures that provide a mixture of dense grasses and open areas," says Roger Applegate, KDWP small game biologist. "They need areas they can walk through, see over, hide in, and feed from."

Given these basic requirements, it is easy to understand that intensive grazing and burning leave little cover for the prairie chicken. The timing of the burning is also a factor. Unfortunately, prairie chickens begin nesting at the same time the majority of the burning takes place, late March and early April. I am not suggesting that ranchers stop burning their pastures. Burning is a necessary and effective tool that promotes plant diversity and forb production, while controlling woody vegetation. At issue is the timing and extensive nature of the burning taking place each spring.

Ideally for the prairie chicken and other ground nesting birds, ranchers would utilize rotational grazing and burning practices. Our agency is working with groups such as the Tallgrass Legacy Alliance, the Nature Conservancy and the U.S. Fish and Wildlife Service to develop alternative range management techniques. With profit margins so thin in agriculture, land-use practices that benefit wildlife must also be proven to be practical and profitable.

The prairie chicken is a national treasure, and as a Kansan, I've always been proud to say that Kansas harbors more of these prairie grouse than anywhere in the world. We must work together to ensure that the haunting "booming" call of the prairie chicken is heard by future generations on the tallgrass prairie.

For more information on prairie chickens or range management practices, please contact Roger Applegate at (620) 342-0658.

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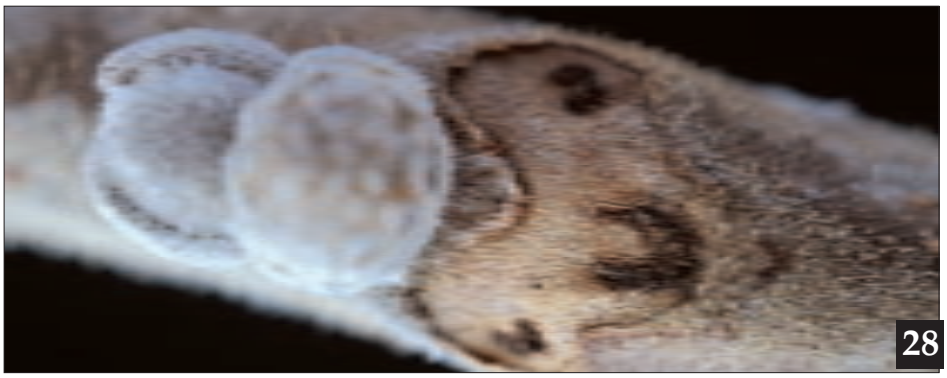

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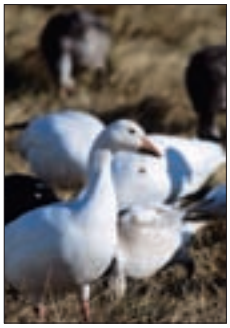

Front Cover: Large numbers of snow geese stop in Kansas during spring migration. Mike Blair photographed this scene with a 600mm lens, f/11 @1/500th sec. **Back Cover:** Early spring can be prime time to catch big farm pond bass. Blair took this shot with 55mm lens, f/11 @ 1/125th sec.

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

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Too Much Of A Goose Thing

by Marvin Kraft
waterfowl research biologist, Emporia

photos by Mike Blair

Biologists are keeping a concerned eye on the mid-continent lesser snow goose population. While extended hunting seasons have reduced goose numbers, the population is still too high, and the birds are destroying their tundra nesting grounds at an alarming rate.

Anyone who has an interest in waterfowl has likely heard of the problem of overabundant light geese and the damage they are causing on their Arctic breeding grounds. Light geese include greater and lesser snow geese and Ross' geese. Lesser snow and Ross' geese are the birds that concern the mid-continent region of the country, and Kansas in particular.

Generally, light goose numbers have steadily grown in recent years until these colonial nesting birds are grubbing and destroying their Arctic nesting areas. Studies have shown that it may take decades or longer for damaged tundra to recover to where it can again support nesting geese in a healthy fashion. Such habitat destruction threatens not only light geese, but a host of other species that utilize the Arctic environment.

As the problem has grown, it has become important to determine how many light geese there are. Unfortunately, it's difficult to provide a good answer. North American management objectives are based on winter survey numbers, which peaked at nearly 2,977,000 light geese counted in 1997-98. The population seems to have stabilized since then, with a count of approximately 2,270,000 during 2001-2002. However, it is known that many geese are not observed and reported during this survey period, and that results provide trend information, not total

numbers of birds in existence.

Several methods have been used to estimate total numbers of light geese, including extrapolation of band recovery rates and harvest estimates. However, the approach that might prove best utilizes a photographic inventory of breeding colonies to estimate nesting pairs, then adds estimates of production and non-breeders. With this formula, researchers have estimated a total light goose population in the neighborhood of 8 million birds.

The number of light geese observed in Kansas during the Mid-winter Survey, which occurs during the first week of January, has varied from zero to 185,000, depending on weather and habitat conditions. However, greater numbers have been reported during routine bi-weekly surveys of major wetland areas in Kansas. The bi-weekly survey has been conducted twice monthly from September through March, since 1970. Up until fall 2002, the record light goose count was reported in December 1974, when 304,678 birds were reported, mostly on Brown County State Fishing Lake. For health-related concerns, the birds were harassed from Brown SFL, and never have returned in those numbers.

Snow geese come in two color phases – the white and the blue. This is an immature blue goose. When mature, the head will be white and the body will be dark.

Historically, light geese observed in Kansas peak at 100,00 to 200,000 during March, when they are returning to the Arctic. Ordinarily, fewer birds are reported during the fall season. However, an interesting and exciting development has occurred the past several years with light goose build-ups in the central part of our state. Most of these birds are located on the Quivira National Wildlife Refuge, and Cheyenne Bottoms, Lovewell, Jamestown and Glen Elder waterfowl areas. This distribution shift became noticeable during the fall of 2000, and really opened some eyes during in 2002, when light goose numbers averaged 233,000 and peaked at 321,000 at these five areas during the four bi-weekly surveys in November and December. This is a major departure from past years, when most light geese were located in the eastern third of the state. It is undoubtedly a reaction to a combination of available food and hunting pressure.

The light goose management challenge is to correct overabundant populations and resulting habitat problems. Waterfowl managers have been working on this for some time. The population objective for the Mid-Continent Population of Light Geese, those geese important to Kansas, is 1-1.5 million, as measured during the Mid-winter Survey. The Mid-Continent Population began bumping against the upper limit of this objective in the late 1970s and surpassed it in 1986, never to return. Waterfowl managers, accustomed to dealing with waterfowl populations at or below objective levels, were in all honesty slow to react. Since 1986, there has been a steady procession of hunting liberalizations, but unfortunately, these proved too little, too late. In 1989, the season length was increased from 86 days to 100 days, while bag and possession limits remained at 5 and 10,

It's common for large flocks of snow geese to congregate as they migrate north in the spring. In this photo, both color phases can be seen. Traditionally, most snow geese passed through eastern Kansas, but recently, snows have been stopping in central Kansas.

respectively. Most managers believe that season length is the key to increasing harvest of the majority of waterfowl species, and that increasing bag limit above a certain level has little effect, other than drawing hunters into the field by advertising an abundant resource that can be harvested. For that reason, bag limits were initially held constant. Then, in 1992, the season was lengthened to 107 days, the maximum allowed by the migratory bird treaty, and the bag and possession limits were increased to 10 and 20, respectively. Regulations were further liberalized in 1996, when the possession limit was increased to 40, and finally in 1998, when the bag was increased to 20 with no possession limit. These later changes were done primarily to increase interest, generate discussions about the abundant geese, and increase the harvest by attracting more hunters. The regular season North American (United States and Canada) harvest of light geese averaged about 591,000 during the 1980s, 748,000 during the 1990s, and peaked in 1998 at 1,173,000. However, the light goose population continued to grow.

Traditional surveys focus on trends and don't accurately count total numbers, which could be as high as 8 million.

It became obvious that the light goose harvest had been maximized through what could be accomplished within the hunting frameworks allowed by treaty. In 1999, the U.S. Fish and Wildlife Service authorized a Conservation Order harvest of light geese. This Conservation Order allows the take of light geese outside the normal October 1 through

March 10 treaty parameters, and authorizes new regulations such as the use of unplugged shotguns, electronic calls, and shooting hours extending 1/2 hour after sunset.

Nationwide, additional harvest during the Conservation Order Season has increased from about 400,000 in 1998 to approximately 590,000 in 2002. Within Kansas, the Conservation Order allows the take of geese beginning immediately after the end of the regular season until April 30. Kansas hunters took about 11,200 light geese in 2000, 11,900 in 2001, and 35,100 in 2002. This Conservation Order harvest is in addition to the regular season harvest, which has averaged approximately 8,600 since 1997. It is obvious from the harvest estimates that harvest during the Conservation Order season is important to Kansas hunters and the final harvest total. The spring harvest of light geese in Kansas will probably continue to fluctuate greatly depending on weather, which influences the number of geese and length of time that they linger during the spring migration period.

It is too early to determine whether the added harvest allowed by the Conservation Order Season will reverse the growth of the Mid-Continent Light Goose population. However, to date the results are encouraging. Winter counts peaked in 1997-98 and appear to have stabilized or even declined slightly since then. Only time will tell. In any event, hunters will undoubtedly have a major role in solving this problem.

If you are a waterfowl hunter and enjoy or look forward to a challenging hunt, light geese might be the birds you should target. Some have labeled snow goose hunting as a "young man's sport," due to the pre-hunt scouting, 3 a.m. alarm, and time and energy required to transport and "set" many hundreds of rags, socks, kites, shell decoys, and in some instances, full-bodied decoys. On average, no species of waterfowl demands a greater investment of time and energy than snow geese. Once the decoys are set, the wait begins, and unfortunately, this huge commitment is frequently rewarded with a big zero. For whatever reason, the flock decides to feed elsewhere that day. But it's those rare days when things go right that all the expense and commitment pays off in spectacular numbers of light geese working your decoys and eventually providing some fast shooting.

A sports writer recently noted that in years past, the giant Canada goose was considered the trophy by most goose hunters, along with the less common white-fronted goose which has a reputation for being excellent table fare. Snow geese were often discussed in a derogatory way and labeled with titles such as "sky carp." However, that traditional negative perspective may be changing. Large Canada goose numbers are at record levels, and they are becoming commonplace, frequently observed at parks and urban residential areas. In contrast, the "wildness" of snow geese and the increased difficulty of consistently harvesting them may be shifting some respect to these far-ranging, Arctic-bred geese. Also, many have learned that the table qualities of corn-fed snow geese are

The Conservation Order allows longer seasons, liberal limits, expanded shooting hours, and the use of electronic calls to increase harvest. Hunting is the most efficient tool to control goose numbers and has had an impact during the last three years.

pretty good, and much of their bad reputation is not deserved.

Just why are snow geese so difficult to harvest, despite the fact that there are more light geese than any other goose species? There are several parts to that answer. First, their natural inclination to travel in huge flocks provides many eyes to spot hunters or recognize decoys. Unlike Canada geese which often make daily flights in small flocks or family groups, light geese often travel in flocks which number in the thousands. If you are fortunate enough to have a flock come into range, you get one opportunity to cash in, and in the process have educated hundreds, and frequently thousands, of light geese to your decoy spread and location.

Secondly, they are a long-lived species. Several years ago, researchers banding geese in the Arctic captured an adult female snow goose with young that was banded as a gosling 24 years earlier. Those 24 years translate into a lot of experience and learning. The combination of being long-lived with low adult mortality rates results in light goose flocks, that as a whole, are very wise and wary when approaching a hunting situation. Regarding the 24-year-old female snow goose, I have occasionally pondered how many miles that goose had on its "set of wings." A modern car is considered high-mileage if it has traveled 150,000- 200,000 miles. I would bet that a 24-year-old snow goose making annual trips from the Arctic to areas as far south as the Gulf Coast or even Mexico, combined with daily flights of as much as 30 miles to feed, would leave our high-mileage car in the dust as far as total miles traveled are concerned.

Finally, we add in the fact that light geese spend more time at school each year than any other species of waterfowl. As a result of the Conservation Order, which allows light goose hunting outside of the normal hunting frameworks, light geese are exposed to hunting in the Canadian provinces when they begin migrating south in September, and this gunning pressure is maintained down through the U.S., and then back north again until they leave the southern prairie provinces during their northward migration to the Arctic in May. That is nine months of constant exposure to humans trying to put them in the skillet.

All these factors – natural wariness, traveling in huge flocks, long lives and constant gunning pressure – result in light geese being extremely wary and tough to hunt. In fact, in recent years there have been instances and areas where it was almost impossible to get light geese to come into gun range over decoys. The end result is waterfowl that sometimes can be taken only by pass- or jump-shooting.

In any event, the spectacle of massive numbers of geese moving through the winter sky is something that inspires awe in most Kansans. It is something that everyone should have the opportunity to experience at least once.

Snow geese live longer than most game birds and migrate in enormous flocks, making them notoriously difficult to decoy into shotgun range. Hunters generally set out hundreds of decoys, socks and rags in an attempt to recreate a life-like feeding scene.

Tuttle Creek's Lake Association Takes Kids Fishing!

text and photos by Mark Shoup
associate editor, Pratt

A model for other groups that want to get youth involved in fishing, the Tuttle Creek Lake Association introduces nearly 200 youngsters to fishing each year. It takes a village, as many members and groups in the Manhattan community get involved.

These days, when most folks in the Sunflower State think of Manhattan, they think K-State football. Such was not always the case, but about the same time Bill Snyder began transforming Wildcat football from patsy to powerhouse, something equally remarkable was unfolding in the local fishing community.

For years, the Tuttle Creek Lake Association had been involved in public service. The 80-member group had volunteered time and raised money for projects at Tuttle Creek State Park, including work on fish habitat, boat ramps, a fish cleaning station, handicapped equipment, nature trails and walking bridges, and a playground for the disabled, as well as similar projects with the U.S. Army Corps of Engineers.

But when Ed Phelps became involved in 1993, the group had begun to focus their efforts on its greatest resource — area youth. By 1995, the association was ready to conduct a two-day fishing clinic with the ambitious goal of accommodating 250 kids.

"That first year, everyone said 'There's no way you can get that

many kids,' but we filled the class within an hour after it was publicly announced," says Phelps, who is chairman of the Youth Fishing Clinic. Phelps adds that although kids may attend the clinic only once, and there are many other distractions for them, the event is still extremely popular.

"We always have 180 to 200 kids," he adds, "and not just Manhattan area kids. Probably because of the university, we have youth from all over the world." Remarkably, because the Lake Association limits the clinic to youngsters who have never had such an experience, every kid is a first-time participant.

Several things make this clinic work so well. A good relationship with the local business community combined with dedicated association members such as Paul Miller, a former Wildlife and Parks conservation officer and past Lake Association president, have made the clinic's popularity possible.

"Paul has just been great," says Phelps. "If he sees a need, he tries to fill it, and he's dedicated to the kids. Although he couldn't be here this year, he helped round up instructors for the event before he went elk hunting in Colorado."

That number totaled 40, including 27 K-State fisheries and wildlife management students. The students were recruited through the efforts of Phelps and another Lake Association member, Leo Schell, who taught a class on youth clinics for one of K-State Prof. Schanee Anderson's courses. In return, Anderson agreed to give her students one hour credit for helping with the Lake Association clinic.

In late September of last year, I took my youngest son, Will, to Manhattan to see just what made this event so popular. The event opened in the evening at the Susan B. Anthony Middle School gymnasium where experts on various aspects of angling had set up teaching stations. Participants and their parents gathered in the grandstands. They were divided roughly into seven groups, and each group was sent to a station where they were given mini-demonstrations. After 10 minutes at one station, Phelps would announce that it was time to rotate, and the groups would move to the next demonstration.

Tuttle Creek's Lake Association provides extensive fishing education prior to a day of angling. All of the nearly 200 youngsters who participate each year are first-timers.

Will and I started at the bass station, where Dave Adams, a conservation officer for the Department of Wildlife and Parks, was ready with lures, rods, and lots of information. After a brief overview of bass natural history, Adams displayed a wide array of lures — from spinners and topwater lures to plastic worms. All this was presented with the disclaimer that "lures are designed to catch people as much as they are fish."

What Adams meant, of course, is that what may look good to a person may mean nothing to a fish. What's most important, he noted, was to learn how to fish. He explained the importance of struc-

ture and techniques for fishing in different water depths.

Adams also described what he called the "four seasons of a bass," explaining that just a degree of temperature change in the spring can trigger bass activity. He explained that in warm weather, lures should be worked faster because the cold-blooded fish are more aggressive. But in winter, he said, it may a take week for a bass to digest a shad. At that time, a lure must be worked much more slowly.

The lake association buys rods and reels from Zebco at a special price, and each young angler gets one free on the fishing day.

This 10 minutes — like all those to follow — flashed by, and we soon found ourselves at the catfish station, where John Hawkinson, representing Riley County Fish and Game, and Gary Simnitt, a Tuttle Creek State Park employee, were ready with baitcasting reels and heavy rods. They explained how to use the clicker and demonstrated how to rig a line with sinker, swivel, and leader. They also explained one critical difference between catfishing and fishing for other species: do not set the hook on the first tap; let the fish run with the line before setting the hook. They also demonstrated the use of a spinning reel and why and how to set drag.

The two explained that they, like most catfish anglers, prefer natural bait to lures. The demonstration was complete with large illustrations of each catfish species found in Kansas, as well as an overview of Wildlife and Parks' Fishing Impoundments and Stream Habitats program, in which private waters are leased for public access.

Next stop: walleye! At this station, Kansas Walleye Association members Jan Kissinger and Ron Hileman had a nice 6-pound walleye on ice, which opened wide the eyes of the young spectators. With the real article in hand, they explained how the unique structure of this species allows it to see better in murky water. They were also able to point out the walleye's sharp teeth and gill plates, and the resulting need for care when handling this species — namely, with a net.

With rod and reel in hand, they demonstrated the use of various baits. Crankbaits are a common lure, they said, and twister tails in bright colors attached to a jig also work well. But because jigs are cheaper than crankbaits, and most walleye fishing is on or near the bottom of the lake, they recommended using jigs. In summer, they also like to add a nightcrawler to the jig and retrieve it slowly, bouncing it along the bottom.

The pair also recommended local areas where parents could take kids to fish for walleye from the bank, including Rocky Ford, Tuttle Creek River Pond, and below the tubes at Milford Dam.

I had never heard of professional crappie tournament fishermen before, but our next station was manned by two: Tim Martin and Chapman Spangler. Although both anglers mentioned that live bait was good for crappie, as tournament

Prizes and raffle items were also part of the event. Organizers work with many local and national sponsors to help provide all the necessary prizes, trophies, and equipment.

anglers, they stressed artificial lures, mainly jigs. They demonstrated how to rig a 1/16th-ounce jig to a line — with and without a bobber — and stressed that bright colors are best in murky water.

Using a 10-foot crappie rod, they mimicked the doodlesocking method, creeping quietly up to "brushpiles" and working around them. The point in this, they noted, was to get the jig right in the fish's face without alerting it to the angler's presence. Extra-long rods — from 10 to 11 feet — allow the angler to stay out of fish cover but still get the bait near the fish.

They also explained that, while covering a lot of water from a boat, they often use a crankbait and troll while moving from spot to spot. The pair gave the young anglers a demonstration of how to use a Zebco rod and reel and ended with the advice, "Fish shallow tomorrow!"

Zebco — which gave the association a discount on rods and reels that would, in turn, be given free to every kid the next day — also had a station. Here, Lake Association members Dean Stuart and Harold O'Malley explained how to set drags on the reel, took a reel apart, explained how to change the line, and demonstrated how to tie on a hook. (O'Malley and Stuart were filling in for retired Zebco Vice-President Clint Beeler, who usually fills this role.)

Local Wildlife and Parks fisheries biologist Chuck Bever manned the next station. Bever gave a number of good tips on fishing in general. Using a heavy nylon cord and a tackle box handle, Bever provided an easy-to-understand demonstration of how to tie a double-clinch knot. Then he let the kids try it. He also gave tips on many kid's favorite fish — bluegill. Noting that worms are the best bait, Bever also suggested that small crankbaits and other small lures were effective, too. The key, he said, is light line, light pole, a small sinker, and a small bobber.

The smile on this youngster's face is what keeps volunteers coming back.

At the final station of the evening, Steve Prockish, of the U.S. Army Corps of Engineers, gave a demonstration on water safety, complete with all the props — from fire extinguishers to life jackets. "Rule number one is learn to swim," Prockish said. Rule number two, he added, is that everyone should wear a life jacket while on the water and make sure that it fits well. He had a number of different styles and sizes and demonstrated how ineffective a life jacket can be if it is too large.

Prockish ended his remarks by touching on laws that require those 12 and younger to wear life jackets while fishing from a boat. He also noted that anyone born on or after July 1, 1989, must complete a certified boater education course to operate a boat in Kansas.

Demonstrations over, the crowd gathered back in the bleachers, where Phelps gave instructions for the following morning.

"Bring nothing tomorrow," he said. "We'll open at 9:30 with free donuts and a flag ceremony." There would also be prizes and drawings throughout the morning, as well as free lunch. Phelps closed the evening session with a free raffle of tackle boxes, pizzas, a lantern, K-State T-shirts, and flashlights.

As we filed out of the building, each youngster was given a tote bag with a few items to get them started fishing in the morning.

When morning came, 185 kids and their parents were gathered at the Anneberg Sports Complex Lake for a taste of real fishing. Approximately 1,300 channel catfish weighing from 1 to 3 pounds had been stocked here the previous day.

With 40 instructors available, fishing stations were set up all around the lake. Each kid was given a brand-new Zebco spin-casting reel and rod, and the group spread themselves around the lake in groups of 10 to 12, small enough for each participant to receive individual attention. Instructors helped each young angler tie hook to line, attach bobber, and bait the hook with a nightcrawler. Periodically, the groups were moved around the lake, so no one had a monopoly on the best spot.

While the eager youngsters cast their lines and began hauling in fish, Phelps and a host of volunteers sold raffle tickets for prizes, including a jon boat, high-quality fishing rods and reels, coolers, and many other items. Other volunteers weighed fish for prizes that would be awarded in approximately 10 categories.

The entire area surrounding the lake was buzzing with activity. In the midst of this, I was able to corner Phelps for a short interview. I was particularly interested in how the event got started, as well as the economics and the philosophy behind it.

Getting top-notch volunteers involved has been key to the event's success and to keeping it going, according to Phelps. For the first

event, Paul Miller hooked up with Tim Martin, a pro crappie fisherman with an organization called Crappie Angler Sportsman Tour (CAST). In later years, Chapman Spangler, now president of CAST, joined the event.

A short exchange among Phelps, Martin, and Spangler revealed the enthusiasm that makes events like this worthwhile:

Spangler: "Everyone works hard to make this go. We coordinate. Organization and teamwork make it work."

Martin: "That's right. And it carries over from year to year. We've got some kids from our first year helping out as instructors now."

Phelps: "It's unbelievable what you can do if you ask for help for kids."

Martin: "All kids. We've helped handicapped kids get into fishing."

Phelps: "And it goes beyond fishing. If you can keep one kid from getting into trouble because he's found a worthwhile way to spend his spare time, it's worth it. You never know."

When asked how they were able to fund such a large event, Phelps' answer was pretty straightforward. "We just sell the idea to the business community," he said. "They donate merchandise enthusiastically, and we sell raffle tickets. It's just ongoing; people buy their tickets every year, and that's how we support it."

But the operating functions of the event only reflect its deeper philosophy. As Phelps put it, "Our primary purpose with this clinic is not fishing; it's helping families spend quality time with kids. That's major."

It's apparently a major influence on those who help with the clinic, as well. As one young K-State volunteer told me, "I had a great time with this. It's more than the college credit. I loved being here."

Over the years, hundreds of area youth have been the beneficiaries of such love.

Sponsors

The 2002 Tuttle Creek Lake Association Fishing Clinic was made possible by generous donations from the following major business sponsors: American Family Insurance, Zebco Fishing Tackle, Modern Woodmen Insurance, the Manhattan Parks and Recreation Department, Dick Edwards Ford, and the Venator Group. In all, 35 businesses from the Manhattan and Wamego areas contributed to the event. In 2003, the Lake Association Fishing Clinic will be held Sept. 19-20.

Set up your own event

The Tuttle Creek Lake Association is interested in more than just their own local fishing clinic. They would be more than willing to help groups in other parts of the state create a fishing clinic tradition. For more information, phone (785) 539-8153 or (785) 341-4978.

More than 40 instructors and volunteers are required to make the Tuttle Creek Lake Association's fishing clinic a success. The Anneberg Sports Complex lake is stocked with more than 1,300 channel catfish weighing from 1 to 3 pounds just before the event.

Our National Wildlife Refuge System Turns 100

by Lorrie Beck
U.S. Fish and Wildlife Service, Great Plains Nature Center, Wichita

photos by Mike Blair

President Theodore Roosevelt signed the Executive Order on March 14, 1903, establishing Pelican Island as a preserve and breeding ground for native birds. He was attempting to prevent the slaughter of herons, egrets, and pelicans for their feathers. Did he realize the legacy he was bestowing on the American public? Did he envision the vast system of lands – the National Wildlife Refuge System – that would grow from this simple proclamation?

A century later, the legacy lives on. From a single, 3-acre refuge at Pelican Island, the National Wildlife Refuge System has grown to nearly 540 national wildlife refuges nationwide. There is a national wildlife refuge within an hour's drive of every major city in the U.S. and one in every state and many U.S. Territories. These refuges total 94 million acres and come in various sizes, ranging from the 1/2-acre Mille Lacs National Wildlife Refuge (Minnesota) to the Yukon Delta National Wildlife Refuge (Alaska) at nearly 20 million acres. Large and small refuges alike are each unique and protect a diversity of habitats which support more than 700 bird species, 220 mammal species, 250 reptile and amphibian species and 200 species of fish.

National wildlife refuges are managed by the U.S. Fish and Wildlife Service as a living heritage, conserving wildlife and habitat for people today and future generations. To the nearly 35 million people who visit national wildlife refuges each year, they are a mosaic of special places to hunt, fish, photograph, and enjoy wildlife. Refuges also provide learning opportunities through environmental education and interpretation.

Four national wildlife refuges are located in Kansas. Kirwin, Quivira, Flint Hills and Marais des Cygnes are truly unique and spectacular wildlife refuges. All harbor diverse species and welcome thousands of visitors each year. These areas encompass nearly 67,000 acres of grasslands, wooded riparian areas, open water, wetlands, and croplands that provide nesting cover, food, and shelter for songbirds, waterfowl, upland game birds and mammals. Recreational activities such as hunting, fishing, wildlife observation, photography and hiking can be enjoyed on all Kansas national wildlife refuges.

To commemorate the Centennial of the National Wildlife Refuge System, each is planning special events and festivities for visitors of all ages in March. The public is invited to investigate, explore and marvel in the wildlife legacy begun by President Teddy Roosevelt in 1903.

A snowy egret perches on a post near one of the wetland pools at Quivira National Wildlife Refuge in Stafford County.

For information on specific Centennial events that will take place at Kansas refuges, contact the following:

Flint Hills NWR
PO Box 128
Hartford, KS 66854
620) 392-5553
flinthills.fws.gov

Great Plains Nature Center
6232 E. 29th St. N
Wichita, KS 67220
(316) 683-5499
www.gpnc.org

Kirwin NWR
RR 3, Box 48A
Kirwin, KS 67644
(785) 543-6673
kirwin.fws.gov

Marais des Cygnes NWR
24141 KS Hwy 52
Pleasanton, KS 66075
(913) 352-8956
maraisdescygnes.fws.gov

Quivira NWR
Rt. 3, Box 48A
Stafford, KS 67578
(620) 486-2393
quivira.fws.gov

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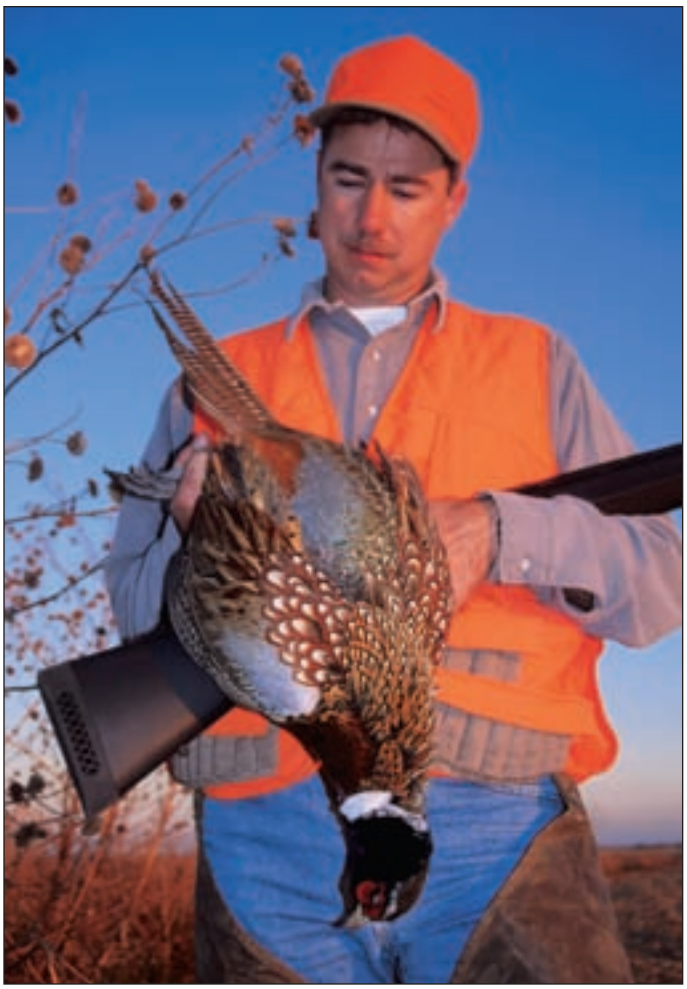


text and photos by Marc Murrell
manager, Great Plains Nature Center, Wichita

Traditionally, hunters have taken shotguns out of the box and to the field with little thought of gun fit. However, advice from an expert and adjustment from a craftsman could make you a better wingshot.

Hunters and target shooters buy shotguns of all makes and models, and most shoot them straight out of the box. While some adapt well to an out-of-box gun, others struggle for months or even years trying to figure out why they can't break targets or down game. Often the problem is merely a matter of fit.

Understanding shotgun fit is simple. Imagine running a race in shoes that were too big or playing golf with clubs that were too short. Maximizing the ability of an individual gets back to the adage of being only as good as your equipment. And even the most expensive equipment in the world won't bring out the best if it doesn't fit well.

"Shotguns aren't like pistols or rifles," said Michael Murphy, a master gun fitter and master shooting instructor who owns Michael Murphy and Sons, a sporting clays range and gun shop in Augusta. "The rifles and pistols have sights on the gun on the barrel. Once that gun is sighted in then anybody can pick it up and hit the target."

Murphy has done more than 8,500 gun fittings over the last 20 years on hunters and shooters from all over the world. He's either coached or fitted 11 national champions and eight world champions. One of his more notable clients is General H. Norman Schwarzkopf.

"There's another fitter in the neighborhood and that's my son," Murphy said of his son, Marc. "After hanging around this gun shop his whole life, he's becoming my partner and doing gun fittings also."

The father and son duo are busy fitting shotguns as more and more hunters and shooters realize the benefits of a shotgun that feels comfortable and shoots where you look.

"With shotguns there is a bead on the front but the rear sight on the shotgun is your eye," Murphy said. "So everyone that holds this gun up, even if they do it properly, will probably have a little different look down the barrel because the rear sight is off."

Most people have no clue as to whether their shotgun fits them or not. Shotgun manufacturers have to build guns to fit the "average" shooter. Realizing people come in all shapes and sizes the "average" part of the equation is often tough to duplicate.

"Most American-made factory guns are not made for a right or a left-handed shooter, but they're made straight," Murphy said in reference to the stock and the amount of cast, or whether the stock is bent to the right or left (right is cast off and left is cast on). "They assumed

Gunfitter Michael Murphy first identifies a customer's dominant eye, which will determine how the gun is fitted. Next the shooter's mount and stance are evaluated before measurements are taken that will determine what changes in the stock are needed.

if they made it straight it would be off a little bit for a right-hander and a little bit for the left-hander."

Women, according to Murphy, have even more need to have a gun fitted due to their stature and dimensions. About 25 percent of all Murphy's fittings are for women.

"They're probably the biggest benefactor of a fitting," Murphy says. "The guns, for the most part, are designed for men so they're too long, the pitch is off a mile and the combs are almost always too low."

Murphy suggests if someone is going to have a gun fitted they go to someone who is also a shooting instructor.

"A lot of the problem we see here is improper stance. They don't know how to stand or mount the gun, or they have problems with eye dominance," Murphy said. "If they just go to a fitter they don't get the overall physical."

Gun fitting isn't cheap, but for those who struggle with the way a new gun feels and shoots, it's probably worth the money.

"If you just walked in the door and didn't buy the gun here, it will cost $200 to be measured," Murphy said. "If you bought the gun here then we do it for half-price.

"Autoloaders and pump guns will run an average of $225 additional money for the work done on the gun," he added. "If it's an over-and-under or a side-by-side, it could be as much as $375 additional so it's pretty serious money to have this done."

Murphy has seen the results of proper gun fit with many of his customers.

"People who have it done are really serious about their shooting," admits Murphy. "And once they have it done, even though they struggle with spending the money, then what they're likely to do is have all their guns fitted which is less expensive after the first one, other than the stock work."

Murphy measures the pitch, or the angle of the buttstock.

In getting fitted for a gun, the first thing Murphy tests or measures with his customers is eye dominance. Murphy has the customer hold a small, fake, pistol-like gun away from their body and point it at his finger while he watches their eyes. He does this from several different angles including the shooter's left, middle and right.

"If you're not consistent with your eyes, that would be just like changing sights because that's the rear sight," Murphy said. "A left to right eye (switch) is about 3 feet at 35 yards."

The mount and stance of the shooter is then evaluated.

"If they're not mounting the gun correctly, they're not getting the full benefit of their fitting," Murphy said. "We can change the pitch of the stock to make sure it fits a particular build.

"If they're not standing correctly, we check their weight distribution (slightly more than half of the weight should be on the front foot)," he added.

Other measurements include height, weight, hand size, sleeve length and then a prescription is written for a gun based on that

information.

"If you're a target shooter, we go a step further," Murphy added. "We do a dynamic fitting which is a little more involved but that gets the weight of the gun distributed perfectly for the mount of the gun."

The customer takes the gun that's set up like a "try" (adjustable) gun outside to a patterning board and they shoot several times to evaluate each shot pattern. On rising birds like ducks and pheasants, or targets, the ideal pattern is 60 percent above the aiming point and well centered.

"Based on where it hits on the patterning board, we dial in the rear sight (the eye), by bending the gun," Murphy said. "If it's an autoloader, like one of the later model Beretta's like the 390, 391s, those have shims with them, and in a lot of cases the customer doesn't have to have any stock work done. All we have to do is readjust the shims and there's no charge for that."

Murphy has seen the results of proper gun fit. "In most cases it's dramatic."

Shotguns are different than rifles because the rear sight on a shotgun is the shooter's eye. Assuming proper mount, a gun that fits will hit where the shooter is looking.

Gun Work

Jim Greenwood, a nationally-known stock maker, does all of Murphy's gun work as it relates to the stock. Greenwood rents his business space from Murphy at Michael Murphy and Sons where he has worked the last 11 of his 16 years in the business. Greenwood builds, refinishes, bends and checkers stocks.

In addition to Murphy's referrals, he also has customers from all over the country.

"Most people who have guns fitted are tournament shooters, sporting clay shooters and skeet shooters," Greenwood said. "We're getting more and more hunters doing it, though, as hunters realize the benefits of a properly fitting gun."

Adjustments Greenwood makes to guns are numerous but there are several that are common.

"The length of pull (distance from the end of the stock to the trigger)," Greenwood mentioned as to one of the biggest problems he corrects with his customers. "

They're all different among the manufacturers. It's easy for a person to conform to, but to get it right it normally needs adjusted."

Other things he often changes are cast (bending of the stock) and comb height (the location of the top of the stock relative to the cheek when mounted).

"Most people are very happy when they get a gun back that's been fitted," Greenwood has seen. "For most everybody their shooting score will go up and they like what it's done."

For more information on any adjustments or stock questions, contact Greenwood at (316) 775-0161.

SHOOTING LESSONS

Michael Murphy encourages individuals who take the time and spend the money to get fitted to take a couple shooting lessons from a qualified shooting instructor. Or pick up some pointers from a video. Murphy teamed up with the late Ed Scherer, 3-time national champion and Hall of Fame shooter, on a 73-minute video that illustrates tips on lead, stance, mount, fit, ammo, recoil, chokes and sporting clay shooting. The video is available for $49.95 by calling (316) 775-2137 or on-line at www.murphyshotguns.com.

A Library For Environmental Learning

by Anne L. Miller
environmental research specialist, Kansas City

photos by Mike Blair
associate editor/staff photographer, Pratt

The Mr. and Mrs. F. L. Schlagle Library in Kansas City is the only one of its kind in the U.S. Opened in 2001 as a fourth branch of the Kansas City Public Library, it provides youth with state-of-the-art environmental learning opportunities.

Nestled in the scenic outdoors of northeastern Kansas on a hillside between woods and lake is a unique public library. In a distinctly unlibrary-like setting, this new facility is perfectly fitted to its purpose. Likely the only one of its kind in the United States, the Mr. and Mrs. F. L. Schlagle Library is a state-of-the-art environmental learning center. Opened June, 2001, it is the fourth branch of the Kansas City, Kansas Public Library.

It's not a place you can just "drop by" on your way to the grocery store or while on other errands. To find it, you must visit Wyandotte County Lake Park, just outside of Kansas City, Kan. It takes about 10 minutes to drive to the library from the entrance of the park. But what a wonderful, scenic drive it is!

Wildlife abounds any time of the year. Wild turkeys, white-tailed deer, red foxes, hawks, squirrels, opossums, rabbits and geese and ducks are common. The summer migration brings great blue herons and colorful songbirds and hummingbirds. During the winter you can spot the bald eagles, osprey, and migrating waterfowl. Viewing such wildlife is a regular part of visiting the Schlagle Library.

This learning center has surprisingly few books, and those that are on the shelves can't be checked out overnight. The books available during hours of operation include field guides, teacher resource materials, and reference books of environmental interest. Using a valid

Kansas City Kansas Public Library card, these materials may be checked out for use while exploring the nearby half-mile-long Stotler Cove Nature Trail. The library staff is always happy to issue a card to visitors showing proof of identity and current residence.

Much of the reason this library can boast "one-of-a-kind" status lies in its wealth of computer technology. In fact, it is the recipient of the Gateway Computer Company's largest donation of technology equipment to an educational institution nationwide. The donation included 10 personal computers used by the staff and the public, and 30 wireless laptop computers used for student research and adult computer classes. There is computer software for the amateur horticulturist and landscaper already installed on the public workstations, as well as Internet access. The library's webpage features hundreds of environmental links for individual research. Anyone wishing to use the computers for personal use or research must have a valid KCK public library card.

This unique library also checks out binoculars for those wanting a closer look at nature along the lake or nature trail. Classes on bird-watching for all ages are held on the first Saturday of each month to teach bird identification and proper use of binoculars and spotting scopes. Classes are led by library staff, local Burroughs-Audubon members, and other birding enthusiasts.

The majority of Schlagle Library users are students who arrive by busloads to attend one of the many environmental education classes conducted in the library classroom, or out in the field. From July 2001 to June 2002, more than 4,700 students and teachers attended classes at the library. Another 3,000 patrons of all ages came for meetings or general information.

Students in all age groups have the opportunity for hands-on learning in natural history sciences. The library's lower level houses a large classroom for computer research, use of data projection, microscopes, testing kits, and supplies for studying rocks and fossils for earth sciences. A variety of furs, feathers, tracks, skins and skulls are used to study life sciences.

Visiting public have the opportunity to view the work of some of the finest local nature artists in the upper level art gallery. The library reference area features live reptiles and amphibians, as well as hands-on natural items and educational materials. Mounted on the walls above the lower level are taxidermy mounts of a bobcat, wild turkey, white-tailed deer, gray fox, red-tailed hawk, albino rainbow trout and largemouth bass. All of these animals were found or caught in the park.

The surrounding areas of lake, grassland, and forest provide opportunities for ecosystem studies ranging from water-quality testing,

The Outdoor Ecology Classroom provides hundreds of Kansas City students with a hands-on look at natural Kansas. Demonstrations with live animals are popular.

to animal habitat, to plant and tree identification. The annual Outdoor Ecology Classroom brings almost 500 fourth-grade students to the outdoors over a four-day period to study soil and water conservation, Kansas animals, global positioning, geology and other environmental subjects. This event is held each year in October in cooperation with the Wyandotte County Conservation District.

The staff of the Schlagle Library has a blend of library experience along with a strong education in environmental studies. Jessica Lawrenz has a degree in biology and natural history interpretation and is the environmental education specialist. She has been with the library for two years. Lawrenz has created the variety of classes from which teachers may choose a field trip for their students. The different classes can be found online, and they feature a link to the correlation of USD 500 and Kansas state education standards and benchmarks.

Newest employee, Paula Ellison, has a degree in environmental science with course work in plant biology and ornithology. Ellison began last September as a public services associate and quickly picked up the responsibility of developing programs for middle and high school students.

Anne Miller has a degree in environmental studies and is the environmental research specialist. Miller has been with the library system for 10 years. She assists the general public with reference and computer use and is available for educational programs. She also teaches a beginning computer class for adults.

Pat Gaunce has been with the library system for more than 40 years and divides her time as branch manager for both the Schlagle Library and the West Wyandotte Branch. Gaunce encourages the staff to be creative yet fundamental, as the library must be a center that provides public and school educational classes, technology and reference services, a hands-on nature experience, limited public library services, outdoor learning areas, and programming for all ages.

Together, the staff develops, promotes, and presents Saturday family programs, or brings in guest

Soil conservation is an important part of a Schlagle Library experience. Students may examine rocks and soils to help learn about the foundations for plant life.

specialists. Some of these unique programs include building bird-feeders and birdhouses, a family outdoor challenge course, a monthly birding classes for all ages, star parties, nature sketching and journaling, hummingbird banding, live reptile and amphibian programs, Eagle Day in January (sponsored by the Board of Public Utilities,) adult computer classes and nature story times for preschoolers.

Even the concept of the Schlagle Library is unique in its partnerships. The $1.2 million center was developed through an agreement between the Kansas City Kansas School Board and Library, the Wyandotte County Parks Foundation and the City/County's Unified Government. It was developed as a result of a gift from the trust of F. L. Schlagle, former Superintendent of Schools in Kansas City, Kan., and his wife.

Fundraising campaigns continue to assist in financing the balance of the building's cost. Tax-deductible gifts can be made to the foundation and donors' names will be listed on the library's donor webpage. The Foundation recently sponsored an art auction to raise funds and will continue to work for the benefit of this unique learning center and library.

Visitors from around Kansas and Missouri are encouraged to visit this unique concept in library services for its educational resources and natural history programming. But they are also invited to enjoy the inviting and relaxing atmosphere of a very unique place nestled in the trees by the lake.

For more information about the Mr. and Mrs. F. L. Schlagle Library, check the library's website at www.kckpl.lib.ks.us/schlagle/, or call (913) 299-2384.

During the annual Outdoor Ecology Classroom, more than 500 fourth graders will visit over a four-day period. Models easily illustrated problems with pollution and erosion, as students learn about soil and water conservation.

Fishing Forecast 2003

Use this handy guide to find the kind of fishing you desire. The 2003 Fishing Forecast is available in brochure form from the department's Pratt office, or you can access it from the department's webpage at www.kdwp.state.ks.us.

Here's how it works. Data is collected by fisheries biologists through annual test netting, electroshocking and creel surveys. (Not every lake is sampled each year, so some may not be included in the tables.) The data is separated into two categories — reservoirs (water bodies larger than 1,000 acres) and lakes (water bodies smaller than 1,000 acres) — because sampling methods on small lakes may not be comparable with those on larger reservoirs.

The forecast includes tables for 13 popular game fish species. Each is given a **Density Rating**, a **Preferred Rating**, **Lunker Rating**, **Largest Fish** and **Biologist's Rating**.

The **Density Rating** is the number of fish, quality-sized or larger, per unit of sampling effort. Quality size, listed in parentheses at the top of the column, is the length of fish generally considered acceptable by most anglers. It is different, of course, for each species. For example, a crappie longer than 8 inches is considered quality-sized, while a walleye must be 15 inches to be considered quality-sized. Theoretically, a lake with a **Density Rating** of 30 would have twice as many quality-sized fish per surface acre as one with a **Density Rating** of 15.

The **Preferred Rating** identifies how many above-average-sized fish a lake contains. Anglers looking for big fish should be more concerned with this rating.

The **Lunker Rating** goes a step further, indicating how many lunker-sized fish were sampled in each body of water. The size of a lunker fish is determined by the length of fish most anglers would consider a trophy. Some lakes may have a **Lunker Rating** of 0, which simply means that no fish of that particular size were sampled. There may be lunker-sized fish in that lake, but they are less abundant than in a lake with a positive rating.

Use these ratings together to find water that provides the kind of fishing you're looking for. If it's

numbers of fish, use the **Density Rating**, if you're after big fish, look at the **Lunker Rating**. However, a lake that ranks high in both ratings might be the best choice.

The **Biggest Fish** column lists the weight of the largest fish caught during sampling. This rating simply gives the angler confidence that truly big fish are present.

The **Biologist's Rating** adds the human touch. Each biologist reviews the data from annual sampling, then considers environmental conditions that may have affected the results. They also consider last year's data, then provide an opinion of the quality of the angling opportunity with a P (poor), F (fair), G (good), or E (excellent) rating.

Don't forget your copy of the *2003 Fishing Regulations Summary*, available at all department offices or wherever licenses are sold. Consult the regulation summary for length and creel limits at each of the reservoirs and lakes listed in this forecast.

CHANNEL CATFISH

IMPOUNDMENT	Density Rating (>16")	Preferred Rating (>24")	Lunker Rating (>28")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
FALL RIVER	16.50	7.50	1.00	9.30	E	2450
JOHN REDMOND	14.00	4.00	0.00	8.00	G	9400
MELVERN	13.00	0.00	0.00	4.00	G	7000
CHENEY	12.00	3.70	0.30	8.00	G	9550
KANOPOLIS	10.50	1.80	0.30	10.60	E	3550
CLINTON	10.50	2.02	0.00	9.60	G	7000
COFFEY	9.60	0.00	0.00	4.00	G	5000
MARION	8.00	1.00	0.80	15.70	E	6160
PERRY	7.80	2.50	0.50	15.30	F	12600
MILFORD	7.80	0.83	0.00	6.00	G	16020
TORONTO	7.00	1.00	0.00	7.10	G	2800
GLEN ELDER	6.90	0.70	0.20	11.60	G	12586
HILLSDALE	6.00	0.25	0.30	8.60	G	4580
LA CYGNE	5.80	0.00	0.00	3.70	G	2600
SEBELIUS	5.77	2.68	0.44	6.50	G	1500
ELK CITY	5.00	0.50	0.00	5.80	G	4450
TUTTLE CREEK	5.00	3.00	0.30	10.50	G	15800
LAKES						
KINGMAN SFL	41.00	1.00	0.00	4.90	G	144
HOLTON - BANNER CREEK LAKE	40.00	5.00	2.00	14.30	G	535
SABETHA - PONY CREEK LAKE	37.50	8.00	0.00	8.20	G	171
CENTRALIA CITY LAKE	37.40	18.10	5.00	18.50	E	400
PLEASANTON EAST LAKE	37.00	19.00	2.00	19.10	E	127
BONE CREEK LAKE	36.50	4.50	0.50	10.40	E	540
PLEASANTON WEST LAKE	30.00	4.00	1.00	8.90	E	20
BARBER SFL-LOWER	25.00	0.00	0.00	4.30	F	51
OSAGE SFL	22.00	3.50	1.00	24.00	E	140
CARBONDALE CITY LAKE - EAST	20.00	9.00	0.00	6.40	E	265
ESKRIDGE-LAKE WABAUNSEE	19.00	2.00	0.00	5.80	F	214
ATCHISON CITY LAKE #23	18.00	0.00	0.00	3.70	F	39
COWLEY SFL	17.00	0.00	0.00	5.40	G	84
GRIDLEY CITY LAKE	16.00	10.00	3.00	15.60	E	33
EUREKA CITY LAKE	14.00	0.00	0.00	4.90	E	259
SEDAN CITY LAKE-OLD	13.00	4.00	0.00	8.80	E	55
BOURBON SFL	13.00	4.00	3.00	19.80	E	103
YATES CENTER CITY LAKE-NEW	13.00	1.60	0.50	27.00	E	205
BROWN SFL	13.00	2.00	1.00	10.80	G	62
LEAVENWORTH SFL	13.00	2.02	1.01	15.80	G	175
MCPHERSON SFL	12.50	1.00	0.00	6.90	G	46
GARDNER CITY LAKE	11.50	1.50	0.00	7.50	G	100
WASHINGTON SFL	11.00	1.00	0.00	10.00	G	65
DOUGLAS CO.-LONESTAR LAKE	10.50	1.00	1.00	9.80	G	195
YATES CENTER-SOUTH OWL LAKE	10.00	4.00	0.00	7.40	E	150
OSAGE CITY LAKE	10.00	3.00	0.00	7.70	E	50
HERINGTON CITY LAKE-OLD	10.00	1.90	1.00	11.50	G	367
CRAWFORD SFL	9.30	0.50	0.00	7.00	G	150
OLPE CITY LAKE	9.00	0.00	0.00	4.20	G	90
OTTAWA SFL	9.00	1.00	0.00	7.10	G	138
HERINGTON CITY LAKE-NEW	9.00	1.00	0.00	5.00	G	555
CLARK SFL	9.00	1.00	0.00	5.70	F	300
OLATHE-LAKE OLATHE	8.50	1.00	0.00	6.70	G	172
OLATHE-CEDAR LAKE	8.00	1.00	0.00	6.10	E	56
BUTLER SFL	8.00	2.00	0.00	7.10	G	124
PRATT CO. LAKE	8.00	8.00	0.00	4.90	E	51
FORD SFL	8.00	8.00	0.00	3.20	E	48
JEFFREY EC-AUX. MAKEUP LAKE	7.00	1.00	0.50	10.30	F	460
HOLTON-PRAIRIE LAKE	7.00	1.00	0.00	6.00	F	78
LEBO CITY LAKE	7.00	2.00	0.00	5.70	E	70
PAOLA CITY LAKE	7.00	0.53	0.00	5.80	G	220
JOHNSON CO. SHAWNEE MISSION LK	7.00	1.00	0.00	7.10	G	121
ATCHISON SFL	6.00	0.00	0.00	4.10	F	66

WHITE CRAPPIE

IMPOUNDMENT	Density Rating (>8")	Preferred Rating (>10")	Lunker Rating (>12")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
PERRY	51.40	19.25	2.00	1.40	G	12600
TORONTO	37.40	17.50	4.40	2.10	E	2800
MARION	35.30	11.86	1.80	1.80	F	6160
CLINTON	24.40	12.30	1.70	1.40	G	7000
FALL RIVER	21.50	9.30	2.90	1.80	E	2450
HILLSDALE	16.80	8.10	1.00	1.10	G	4580
MELVERN	16.00	8.60	0.60	1.00	G	7000
COUNCIL GROVE	12.80	7.00	1.90	1.60	G	3280
MILFORD	10.20	3.50	0.50	1.50	G	16020
POMONA	8.60	5.10	0.80	1.20	G	4000
KANOPOLIS	6.80	4.80	2.10	1.60	F	3550
GLEN ELDER	6.30	1.50	0.10	1.40	P	12586
BIG HILL	5.00	0.75	0.10	0.90	G	1240
EL DORADO	4.70	1.70	0.10	0.90	F	8000
CEDAR BLUFF	4.20	3.30	1.00	1.20	F	6500
LAKES						
HERINGTON CITY LAKE-OLD	62.00	4.50	0.50	1.30	G	367
PLAINVILLE LAKE	57.00	54.50	30.30	2.00	E	100
MEADE STATE LAKE	45.80	45.80	0.50	1.30	E	80
SEVERY CITY LAKE	26.50	1.50	0.00	0.50	G	5
WICHITA-CHISHOLM NORTH LAKE	25.60	6.75	1.20	1.30	G	25
LOUISBURG CITY LAKE	23.00	0.50	0.00	0.40	G	23
OLATHE-CEDAR LAKE	22.50	2.60	0.00	0.70	F	56
CARBONDALE CITY LAKE - EAST	22.00	8.50	1.50	0.90	G	265
EUREKA CITY LAKE	19.50	2.70	0.50	0.70	G	259
JEFFREY EC-MAKE UP LAKE	18.30	3.50	0.30	0.90	G	125
OTTAWA SFL	14.80	3.90	1.60	1.80	F	138
SEDAN CITY LAKE-OLD	13.80	2.50	0.00	0.50	G	55
WASHINGTON SFL	13.50	3.30	1.00	1.00	G	65
ATCHISON CITY LAKE #8	13.00	3.50	0.50	1.00	F	14
HOLTON-PRAIRIE LAKE	12.80	2.30	0.50	1.20	F	78
GEARY SFL	12.00	0.76	0.00	0.50	G	97
MADISON CITY LAKE	12.00	1.00	0.00	0.60	F	114
NEBO SFL	11.80	2.50	0.50	1.00	F	38
LOGAN CITY LAKE	11.50	11.00	6.00	1.20	G	25
GARDNER CITY LAKE	11.00	1.80	0.50	0.80	F	100
OLATHE-LAKE OLATHE	9.30	1.70	0.40	1.50	F	172
HORTON-MISSION LAKE	9.00	1.50	0.50	2.00	P	154
ATCHISON CITY LAKE #7	7.00	2.50	0.50	1.00	P	10
NEOSHO SFL	6.50	1.30	0.00	0.70	F	92
JOHNSON CO.-HERITAGE PARK LK	6.00	2.00	0.00	0.70	P	20
EMPORIA - LAKE KAHOLA	5.80	3.00	0.30	1.10	F	405
LEAVENWORTH SFL	5.70	0.17	0.00	0.40	F	175
SHAWNEE CO.-LAKE SHAWNEE	5.50	0.50	0.00	0.60	F	416
SEDAN CITY LAKE-NEW	5.50	0.20	0.00	0.50	F	70
DOUGLAS CO.-LONESTAR LAKE	5.30	2.27	0.30	0.80	F	195
JEWELL SFL	5.30	3.20	1.20	1.20	F	57
POTTAWATOMIE SFL #1	4.80	3.90	0.30	0.90	F	24
SCOTT STATE LAKE	4.50	4.50	0.00	0.60	F	115
PLEASANTON EAST LAKE	4.30	2.30	0.50	1.60	G	127
HERINGTON CITY LAKE-NEW	4.00	0.76	0.00	0.50	F	555
ELLIS CITY LAKE	4.00	2.00	1.00	1.30	G	100
CLARK SFL	3.90	3.80	0.40	1.00	F	300
CRAWFORD SFL	3.40	0.00	0.00	0.40	G	150
KIOWA SFL	3.30	3.20	0.00	0.30	E	21
LEWIS-YOUNG PARK LAKE	3.00	3.00	0.30	0.70	P	2
KINGMAN SFL	2.50	0.50	0.00	1.10	P	144
CHASE SFL	2.30	0.00	0.00	0.30	F	109
MIDDLE CREEK SFL	2.20	0.83	0.20	0.90	F	280

BLACK CRAPPIE

IMPOUNDMENT	Density Rating (>8")	Preferred Rating (>10")	Lunker Rating (>12")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
CEDAR BLUFF	2.90	1.70	0.30	1.20	F	6500
SEBELIUS	2.50	1.50	0.50	1.40	F	1500
WEBSTER	1.90	1.80	1.20	1.60	F	3500
KIRWIN	1.40	1.20	0.60	1.70	F	4000
GLEN ELDER	0.90	0.70	0.40	1.50	P	12586
LAKES						
NEOSHO SFL	66.00	0.00	0.00	0.30	F	92
BROWN SFL	60.30	25.00	0.00	0.80	G	62
PLAINVILLE LAKE	26.50	12.50	0.30	0.90	G	100
GARNETT CITY LAKE-SOUTH	23.00	15.00	0.00	0.80	F	25
CENTRALIA CITY LAKE	22.40	0.30	0.00	0.60	E	400
COWLEY SFL	20.50	1.50	0.00	0.80	F	84
GRAHAM CO.-ANTELOPE LAKE	19.00	4.25	2.00	1.30	E	80
GREENBUSH EDUCATION CENTER	16.50	0.00	0.00	0.30	P	5
GRIDLEY CITY LAKE	14.00	9.00	0.00	0.60	G	33
LOGAN CITY LAKE	13.30	11.00	0.00	0.70	G	25
ATCHISON CITY LAKE #23	13.30	2.75	0.00	0.90	F	39
PLEASANTON WEST LAKE	13.00	3.00	1.50	2.10	G	20
ATCHISON CITY LAKE #8	13.00	0.00	0.00	0.40	F	14
LEAVENWORTH SFL	11.80	2.17	0.00	0.70	G	175
HOLTON-PRAIRIE LAKE	10.80	0.50	0.00	0.70	F	78
SHAWNEE SFL	9.00	0.50	0.25	1.30	F	135
HOLTON - BANNER CREEK LAKE	7.00	2.80	0.30	1.00	G	535
ALMA CITY LAKE	6.50	5.20	0.00	0.80	G	80
BUTLER SFL	6.30	0.70	0.20	1.20	F	124
WILSON SFL	5.00	0.50	0.00	0.70	G	110
ATCHISON SFL	4.50	1.00	0.00	0.70	F	66
KINGMAN SFL	4.00	1.00	0.00	0.80	P	144
NEBO SFL	4.00	0.30	0.00	0.50	F	38
WYANDOTTE CO. LAKE	3.90	1.10	0.10	1.00	G	407
LEBO CITY LAKE	3.50	3.50	0.00	0.80	G	70
OSAGE SFL	3.50	1.00	0.00	0.70	F	140
WILDCAT RECREATION LAKE	3.00	1.00	0.00	0.80	P	105
BOURBON SFL	3.00	1.00	0.50	1.10	G	103
PRATT CO. LAKE	3.00	3.00	0.00	1.10	F	51
YATES CENTER CITY LAKE-NEW	3.00	1.00	0.00	0.70	G	205
SABETHA - PONY CREEK LAKE	2.90	2.30	1.00	1.50	G	171
SHAWNEE CO.-LAKE SHAWNEE	2.80	0.51	0.00	0.60	F	416

FLATHEAD CATFISH

IMPOUNDMENT	Density Rating (>16")	Preferred Rating (>24")	Lunker Rating (>28")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
KIRWIN	4.00	3.00	3.00	21.40	G	4000
WEBSTER	2.50	0.50	0.50	19.40	G	3500
LA CYGNE	1.50	1.00	1.00	15.20	E	2600
MILFORD	0.70	0.00	0.00	4.10	F	16020
HILLSDALE	0.50	0.00	0.00	5.40	F	4580
LAKES						
HERINGTON CITY LAKE-OLD	3.00	1.00	0.00	10.50	F	367
WASHINGTON SFL	3.00	3.00	0.00	7.80	F	65
HERINGTON CITY LAKE-NEW	3.00	1.00	1.00	9.70	F	555
CLARK SFL	2.00	0.20	0.00	5.30	P	300

LARGEMOUTH BASS

IMPOUNDMENT	Density Rating (>12")	Preferred Rating (>15")	Lunker Rating (>20")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
SEBELIUS	157.60	39.80	1.00	4.50	E	1500
WEBSTER	78.10	67.80	4.10	6.70	E	3500
CEDAR BLUFF	58.10	33.00	2.30	6.30	E	6500
LA CYGNE	47.10	15.00	5.30	9.30	E	2600
KIRWIN	27.70	23.10	0.00	3.30	G	4000
WILSON	26.60	20.00	0.30	3.80	F	9040
BIG HILL	21.30	10.60	2.10	6.10	G	1240
TORONTO	21.10	8.50	0.00	4.20	F	2800
FALL RIVER	20.00	5.00	0.00	3.00	P	2450
MELVERN	18.00	12.00	1.00	5.50	G	7000
TUTTLE CREEK	9.00	6.00	1.00	5.50	F	15800
EL DORADO	9.00	4.00	1.00	5.30	F	8000
CLINTON	7.20	3.40	0.20	7.00	P	7000
LAKES						
NEW STRAWN CITY LAKE	247.00	86.00	4.60	4.70	E	3
PLAINVILLE LAKE	231.50	124.10	7.40	6.30	E	100
BRONSON CITY LAKE	173.00	13.40	3.00	4.80	E	25
GRAHAM CO.-ANTELOPE LAKE	166.00	10.00	0.00	1.80	G	80
GARNETT CITY LAKE-NORTH	160.00	36.00	0.00	3.90	F	55
MOLINE NEW CITY LAKE	156.00	35.00	2.00	4.40	E	185
PLEASANTON WEST LAKE	155.20	68.40	0.00	3.50	G	20
SHERIDAN SFL	146.00	4.00	0.00	1.90	G	67
SEDAN CITY LAKE-OLD	125.50	31.90	7.80	6.00	E	55
MOLINE OLD CITY LAKE	110.30	30.00	5.10	4.90	E	68
OSAWATOMIE CITY LAKE	109.50	2.70	0.00	2.60	F	21
WOODSON SFL	107.00	49.00	0.00	2.50	G	180
GARNETT CITY LAKE-SOUTH	105.00	22.00	0.00	5.00	E	25
NEOSHO SFL	97.00	46.00	7.00	6.80	E	92
LEAVENWORTH SFL	96.80	28.60	0.50	5.70	G	175
LOGAN CITY LAKE	96.20	19.20	0.00	2.30	G	25
BUTLER SFL	94.00	68.00	5.00	6.30	E	124
BROWN SFL	85.00	6.25	0.00	5.20	G	62
OLATHE-CEDAR LAKE	80.50	63.30	1.10	5.20	G	56
JAWHAWK BOY SCOUT LAKE	78.90	12.20	0.00	4.10	G	30
PRATT CO. LAKE	78.30	21.80	0.00	2.20	E	51
EMPORIA-JONES PARK PONDS	77.80	33.40	0.00	2.20	G	5
SEVERY CITY LAKE	76.70	12.50	0.00	3.30	E	5
MCPHERSON SFL	76.00	49.30	1.30	6.00	E	46
CHERRYVALE CITY LAKE - TANKO	74.50	38.20	1.80	4.40	G	11
YATES CENTER CITY LAKE-NEW	73.00	38.00	0.00	5.10	G	205
OSAGE SFL	73.00	17.00	5.00	4.90	G	140
SEDAN CITY LAKE-NEW	72.30	23.40	0.00	2.90	E	70
KINGMAN SFL	70.70	56.70	0.00	3.90	E	144
CRAWFORD SFL	70.20	36.50	3.30	5.60	G	150
LEWIS-YOUNG PARK LAKE	69.60	45.00	13.00	6.70	G	2
COWLEY SFL	69.00	32.00	1.00	4.60	G	84
MADISON CITY LAKE	67.80	24.40	2.30	6.20	E	114
SH. CO.-SMOKY HILL GARDEN	64.00	34.00	0.00	4.80	G	11
DOUGLAS CO.-LONESTAR LAKE	63.00	36.00	0.00	5.50	G	195
OLATHE-LAKE OLATHE	58.80	38.90	1.40	6.00	G	172
EUREKA CITY LAKE	58.00	20.00	0.00	4.30	E	259
GARDNER CITY LAKE	57.60	35.30	6.10	5.40	G	100
SABETHA - PONY CREEK LAKE	56.40	28.50	0.70	6.60	G	171
ATCHISON SFL	55.00	16.90	0.60	4.60	G	66
HOLTON - BANNER CREEK LAKE	55.00	18.50	0.00	4.70	G	535
POTTAWATOMIE SFL #2	53.00	26.80	0.00	3.40	G	75
MONTGOMERY SFL	52.10	33.00	3.70	5.50	E	105
WILSON SFL	51.40	25.60	4.10	5.10	E	110
LAKE HAMMOND YMCA TOPEKA	51.00	8.40	0.00	5.10	F	15
FORT SCOTT CITY LAKE	50.00	24.10	0.00	2.70	G	350

SAUGER

IMPOUNDMENT	Density Rating (>11")	Preferred Rating (>14")	Lunker Rating (>17")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
MELVERN	4.70	3.00	0.10	2.70	E	7000
PERRY	1.80	1.00	0.30	1.90	G	12600
LAKES						
HOLTON - BANNER CREEK LAKE	9.00	8.50	1.00	1.70	G	535

SAUGEYE

IMPOUNDMENT	Density Rating (>14")	Preferred Rating (>18")	Lunker Rating (>22")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
SEBELIUS	40.60	7.13	1.46	4.10	E	1500
KANOPOLIS	13.30	10.00	1.50	7.70	G	3550
TUTTLE CREEK	8.00	2.80	0.60	6.70	F	15800
COUNCIL GROVE	3.00	1.60	1.00	5.80	G	3280
LAKES						
GRAHAM CO.-ANTELOPE LAKE	37.00	0.00	0.00	1.50	G	80
HARVEY CO. LAKE-EAST	29.00	5.00	0.00	3.90	E	240
CHASE SFL	16.00	0.00	0.00	1.10	F	109
WASHINGTON SFL	16.00	5.00	2.00	6.90	G	65
PLEASANTON EAST LAKE	10.00	3.00	0.00	2.00	G	127
SEDAN CITY LAKE-OLD	9.00	4.00	1.00	4.60	F	55
MIDDLE CREEK SFL	8.50	2.00	1.00	5.50	G	280
OLPE CITY LAKE	6.00	0.00	0.00	1.40	P	90
ESKRIDGE-LAKE WABAUNSEE	6.00	5.00	5.00	6.30	F	214
PARSONS CITY LAKE	5.50	2.00	0.00	3.20	G	980
PAOLA CITY LAKE	5.50	4.00	1.00	5.80	F	220
GEARY SFL	4.00	1.00	1.00	4.90	F	97

SMALLMOUTH BASS

IMPOUNDMENT	Density Rating (>11")	Preferred Rating (>14")	Lunker Rating (>17")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
WILSON	19.10	5.10	0.00	2.00	E	9040
BIG HILL	16.00	5.30	0.00	2.00	E	1240
MELVERN	11.00	10.00	20.00	3.50	E	7000
COFFEY	10.50	6.00	0.00	1.60	E	5000
CEDAR BLUFF	10.00	10.00	0.00	1.90	G	6500
WEBSTER	3.50	0.90	0.00	1.30	F	3500
GLEN ELDER	2.30	1.90	0.60	3.50	F	12586
LAKES						
JEFFREY EC-MAKE UP LAKE	20.00	18.00	0.00	2.10	G	125
GEARY SFL	2.10	1.50	0.00	2.40	F	97

SPOTTED BASS

IMPOUNDMENT	Density Rating (>11")	Preferred Rating (>14")	Lunker Rating (>17")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
CEDAR BLUFF	132.00	22.00	0.00	1.70	E	6500
MELVERN	8.50	3.30	0.00	2.30	F	7000
SEBELIUS	7.33	4.19	0.00	2.10	G	1500
EL DORADO	4.00	3.00	0.00	2.00	P	8000
TORONTO	0.80	0.00	0.00	1.10	P	2800
LAKES						
EMPORIA - LAKE KAHOLA	40.00	10.00	0.00	2.70	G	405
WILSON SFL	28.40	16.20	0.00	1.90	G	110
BOURBON SFL	18.40	4.40	0.00	1.50	E	103
CRAWFORD SFL	17.10	4.40	0.60	3.60	G	150

STRIPER

IMPOUNDMENT	Density Rating (>20")	Preferred Rating (>30")	Lunker Rating (>35")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
WILSON	10.40	0.10	0.00	10.80	E	9040
GLEN ELDER	0.10	0.10	0.10	19.10	P	12586
LA CYGNE	0.00	0.00	0.00	1.30	F	2600

WALLEYE

IMPOUNDMENT	Density Rating (>15")	Preferred Rating (>20")	Lunker Rating (>25")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
EL DORADO	17.50	4.00	0.30	6.60	G	8000
KIRWIN	17.02	3.06	0.56	7.20	E	4000
HILLSDALE	16.80	7.30	1.30	8.80	G	4580
GLEN ELDER	9.40	5.60	0.50	11.70	F	12586
CEDAR BLUFF	9.30	1.30	0.00	4.70	G	6500
WILSON	9.00	0.10	0.00	4.00	E	9040
CHENEY	8.30	5.20	0.50	7.10	G	9550
LOVEWELL	8.00	3.00	0.30	7.00	F	2986
MILFORD	7.30	2.50	1.00	8.30	G	16020
WEBSTER	7.16	2.22	0.26	7.20	G	3500
MARION	7.00	0.75	0.30	6.60	G	6160
CLINTON	5.80	2.75	0.80	8.30	F	7000
COFFEY	3.80	0.30	0.00	3.3	E	5000
MELVERN	2.90	0.30	0.10	4.70	G	7000
POMONA	0.30	0.00	0.00	1.10	P	4000
LAKES						
WYANDOTTE CO. LAKE	24.50	0.00	0.00	1.70	G	407
PRATT CO. LAKE	13.00	13.00	0.00	2.30	E	51
ALMA CITY LAKE	12.00	1.00	0.00	3.00	F	80
HERINGTON CITY LAKE-NEW	11.00	2.00	0.00	4.30	G	555
EMPORIA - LAKE KAHOLA	11.00	0.00	0.00	1.70	G	405
SABETHA - PONY CREEK LAKE	10.50	3.00	0.00	5.00	G	171
LEBO CITY LAKE	9.00	0.00	0.00	1.20	E	70
WOODSON SFL	7.50	0.00	0.00	1.70	G	180
JEFFREY EC-AUX. MAKEUP LAKE	7.00	0.00	0.00	1.90	F	460
JEFFREY EC-MAKE UP LAKE	7.00	0.00	0.00	1.60	F	125
HOLTON - BANNER CREEK LAKE	5.00	1.50	0.00	5.10	F	535
LEAVENWORTH SFL	5.00	1.50	0.00	4.00	F	175
YATES CENTER CITY LAKE-NEW	4.80	0.00	0.00	1.60	E	205
SHAWNEE CO.-LAKE SHAWNEE	4.50	0.00	0.00	2.50	F	416
GRIDLEY CITY LAKE	4.00	0.00	0.00	1.50	G	33
COWLEY SFL	3.00	0.00	0.00	2.50	P	84
SCOTT STATE LAKE	3.00	3.00	0.00	3.90	F	115
BARBER SFL-LOWER	3.00	1.00	0.00	3.80	E	51
CENTRALIA CITY LAKE	3.00	1.50	1.00	7.80	F	400
GARNETT CITY LAKE-NORTH	3.00	3.00	1.00	6.70	F	55
SHAWNEE SFL	2.00	2.00	0.00	6.00	F	135
BOURBON SFL	2.00	2.00	1.00	5.10	F	103

WHITE BASS

IMPOUNDMENT	Density Rating (>9")	Preferred Rating (>12")	Lunker Rating (>15")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
TORONTO	111.00	26.20	16.00	3.50	E	2800
KANOPOLIS	79.30	49.00	2.30	2.50	E	3550
FALL RIVER	64.00	39.10	8.50	2.80	E	2450
GLEN ELDER	49.70	9.40	2.80	2.50	E	12586
KIRWIN	40.64	16.93	0.15	2.30	E	4000
EL DORADO	38.80	15.00	0.30	1.70	G	8000
PERRY	38.30	13.50	0.00	1.40	G	12600
ELK CITY	34.50	25.00	1.50	2.10	E	4450
BIG HILL	28.30	22.70	1.70	1.80	E	1240
CEDAR BLUFF	21.70	17.30	2.30	2.20	E	6500
LA CYGNE	16.00	6.50	0.00	1.10	G	2600
JOHN REDMOND	16.00	11.00	4.00	2.60	F	9400
MILFORD	15.70	10.00	0.50	1.50	G	16020
MELVERN	15.00	4.00	0.10	2.00	G	7000
COFFEY	14.20	9.90	1.10	1.30	G	5000
LOVEWELL	13.80	6.20	0.00	1.40	G	2986
MARION	13.50	9.00	0.30	1.90	G	6160
CLINTON	12.30	10.30	0.80	1.70	F	7000
POMONA	9.80	6.50	0.00	1.20	G	4000
CHENEY	9.20	9.00	1.80	1.70	G	9550
TUTTLE CREEK	8.80	5.00	2.40	2.80	F	15800
HILLSDALE	8.00	3.20	0.00	1.10	P	4580
WILSON	7.90	4.60	1.80	2.10	F	9040
COUNCIL GROVE	5.00	2.20	0.00	1.70	F	3280
WEBSTER	2.90	0.35	0.00	2.80	G	3500
LAKES						
JEFFREY EC-AUX. MAKEUP LAKE	150.00	72.00	29.00	2.40	E	460
HERINGTON CITY LAKE-NEW	80.00	58.00	3.00	1.70	G	555
CLARK SFL	68.00	26.00	0.00	1.50	E	300
HARVEY CO. LAKE-EAST	44.00	19.00	2.00	2.20	G	240
MIDDLE CREEK SFL	13.50	6.49	0.00	1.40	G	280
HERINGTON CITY LAKE-OLD	13.00	10.00	8.00	2.80	G	367
CHASE SFL	9.00	2.00	0.00	0.90	F	109
PAOLA CITY LAKE	8.50	7.00	0.50	1.80	G	220
GARDNER CITY LAKE	7.50	3.50	2.00	3.00	P	100
WYANDOTTE CO. LAKE	3.50	1.00	1.00	2.40	P	407
JEFFREY EC-MAKE UP LAKE	2.00	0.00	0.00	0.60	F	125

WIPER

IMPOUNDMENT	Density Rating (>12")	Preferred Rating (>15")	Lunker Rating (>20")	Biggest Fish (lbs.)	Bio Rating	Acres of Water
RESERVOIR						
MARION	49.70	0.74	0.30	8.70	E	6160
KIRWIN	29.88	19.67	10.27	6.30	E	4000
WEBSTER	28.17	21.13	13.13	14.10	E	3500
SEBELIUS	26.79	7.31	4.24	8.90	G	1500
LA CYGNE	19.00	8.00	4.80	9.10	E	2600
POMONA	11.80	8.30	1.00	5.80	G	4000
CEDAR BLUFF	11.30	11.00	4.00	10.10	E	6500
KANOPOLIS	9.50	2.80	1.30	6.80	F	3550
MILFORD	5.30	3.50	2.70	9.50	F	16020
LOVEWELL	4.70	4.70	0.30	4.90	F	2986
CHENEY	4.00	2.70	0.50	4.30	G	9550
LAKES						
GREAT BEND-STONE PARK LAKE	56.00	55.90	2.00	4.90	E	50
GRAHAM CO.-ANTELOPE LAKE	28.00	0.00	0.00	1.00	F	80
SABETHA - PONY CREEK LAKE	24.50	5.50	0.00	3.00	F	171
PRATT CO. LAKE	22.00	7.00	0.00	1.90	E	51
PLAINVILLE LAKE	18.90	12.10	6.10	9.70	E	100
PLEASANTON EAST LAKE	17.00	16.00	0.00	3.30	E	127
SHAWNEE CO.-LAKE SHAWNEE	16.00	12.51	4.50	7.90	G	416
GARNETT CITY LAKE-SOUTH	15.00	15.00	0.00	3.20	G	25
GRIDLEY CITY LAKE	15.00	12.00	6.00	5.00	E	33
JEFFREY EC-MAKE UP LAKE	14.00	5.00	3.00	12.40	G	125
OLATHE-LAKE OLATHE	12.00	2.50	1.50	4.60	F	172
MIDDLE CREEK SFL	11.00	2.00	1.50	3.90	G	280
PAOLA CITY LAKE	11.00	6.51	4.00	7.40	G	220
LOGAN CITY LAKE	9.30	7.20	4.30	12.70	G	25
LEBO CITY LAKE	8.00	8.00	0.00	4.00	E	70
GARNETT CITY LAKE-NORTH	7.00	7.00	2.00	9.00	G	55
OVERBROOK CITY LAKE	6.00	2.00	0.00	3.60	E	8
YATES CENTER CITY LAKE-NEW	5.50	4.00	0.50	5.60	G	205
EUREKA CITY LAKE	5.00	0.00	0.00	1.00	P	259
JOHNSON CO. SHAWNEE MISSION LK	4.00	4.00	2.00	6.90	G	121
DOUGLAS CO.-LONESTAR LAKE	3.00	1.00	1.00	8.40	F	195
YATES CENTER-SOUTH OWL LAKE	3.00	3.00	3.00	4.90	F	150
LEAVENWORTH SFL	2.50	0.00	0.00	1.40	P	175
COLDWATER LAKE	2.00	0.20	0.00	2.70	G	250
KIOWA SFL	1.00	0.10	1.00	5.80	G	21
HORTON-MISSION LAKE	1.00	0.00	0.00	0.80	P	154

Faces In The Trees

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

Leaf scars, the marks left on twigs when leaves fall, often create interesting, face-like images that are even more fascinating when enlarged.

Among leafy tree limbs where the eyes of men seldom gaze, faces watch the forest. Don't worry — they're not alive. These faces are simply the scars that remain when tree leaves fall from their twigs in autumn.

Leaf scars are small and often obscure. In some trees, they don't resemble faces at all, but appear as crescents, slits or circles. In other species though, facial characteristics are remarkable. These leaf scars reveal a tree's identity as surely as the leaves themselves.

The shape of a leaf scar is determined by the foliage. A leaf stalk swells where it fastens to the twig, allowing a firm connection and vascular hookup between twig and leaf. The resulting scar is often face-like, complete with chin, cheeks, and sometimes, ears.

Inside the leaf scar, smaller vascular bundle scars mark the precise locations of xylem and phloem connections. These special valves allow sugar and sap to flow back and forth to the roots. Bundle scars suggest a mouth and eyes within the "face."

Other features may also be present. Buds are found in conjunction with leaf scars, normally along their upper edges. But

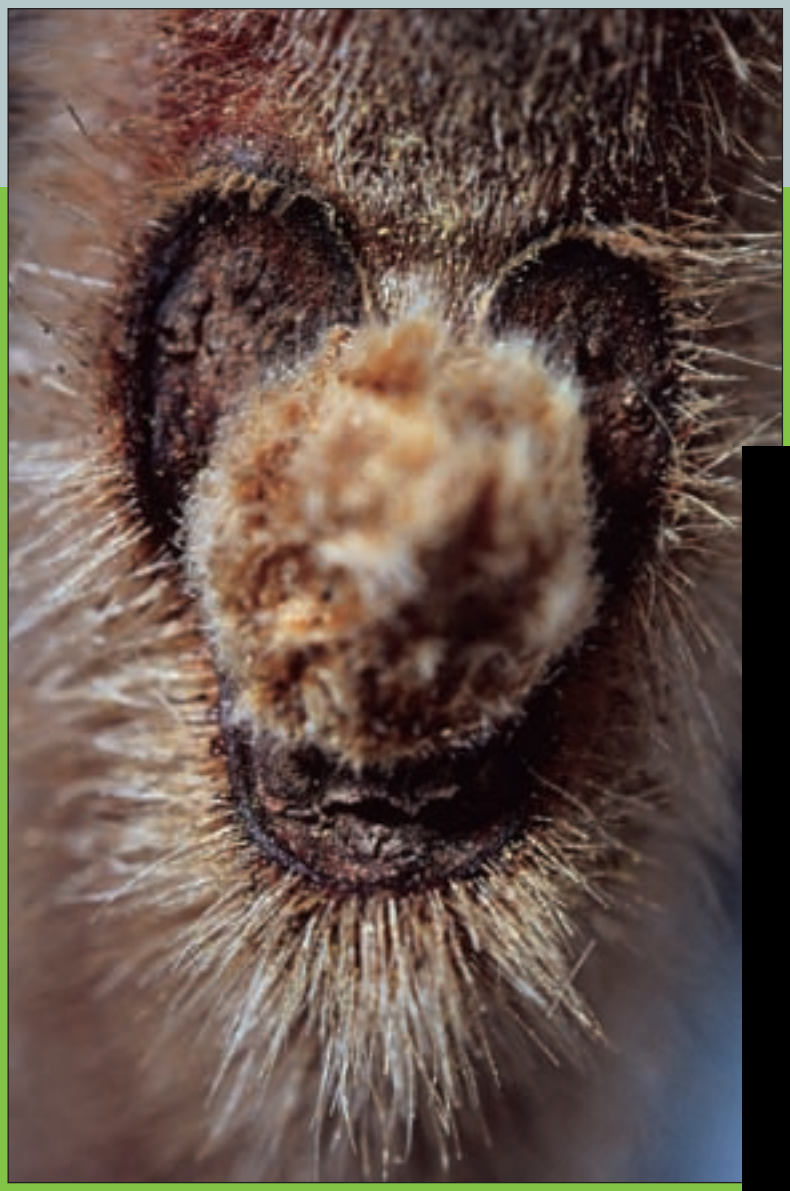
in some types of trees, the leaf stalk completely surrounds the bud, protecting it as it develops. When this occurs, the bud is inside the leaf scar, actually becoming part of it. Sycamore trees exhibit this special arrangement.

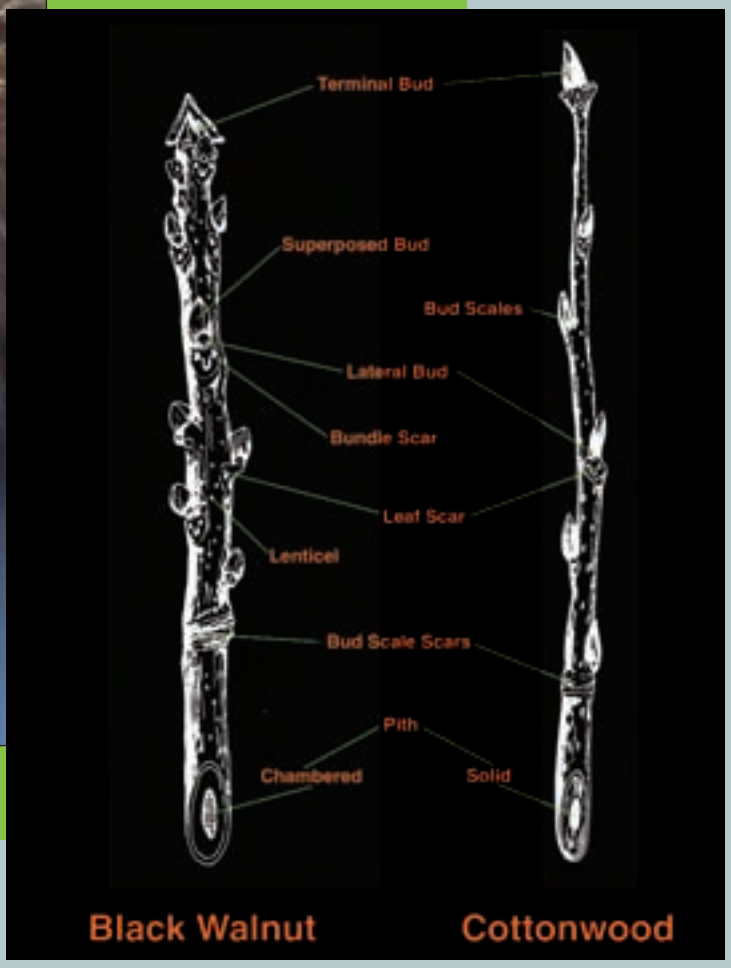
Some trees have small, secondary leaves that hang skirt-like around a twig. These leaves are called stipules. Stipules form their own distinct scars, which are linear and may partially or fully encircle the twig to connect either side of the leaf scar. Often these occur on small leaf scars not resembling faces, but they are commonly diagnostic to a tree's identity and an interesting part of twigs in general.

Spines are another outgrowth sometimes associated with tree leaf scars. In a few woody species, one to several needle-like projections protect the bud from browsing animals. Located laterally or above a leaf scar, spines sometimes connote horns sprouting from wooden faces.

Leaf scars are most evident in winter and early spring, when they are fully formed and leaves are absent. They are best observed at the ends of twigs on current year growth. A small hand lens may be helpful in studying their features.

Close examination of nature often leads to surprising discoveries. On detailed inspection, familiar trees that dwarf and surround us provide fascinating knowledge of how they feed and clothe themselves. Leaf scar patterns provide the clues. Though sizes and shapes vary widely, some leaf scars leave the uncanny impression that they're looking back. See for yourself — discover hidden faces in the trees.





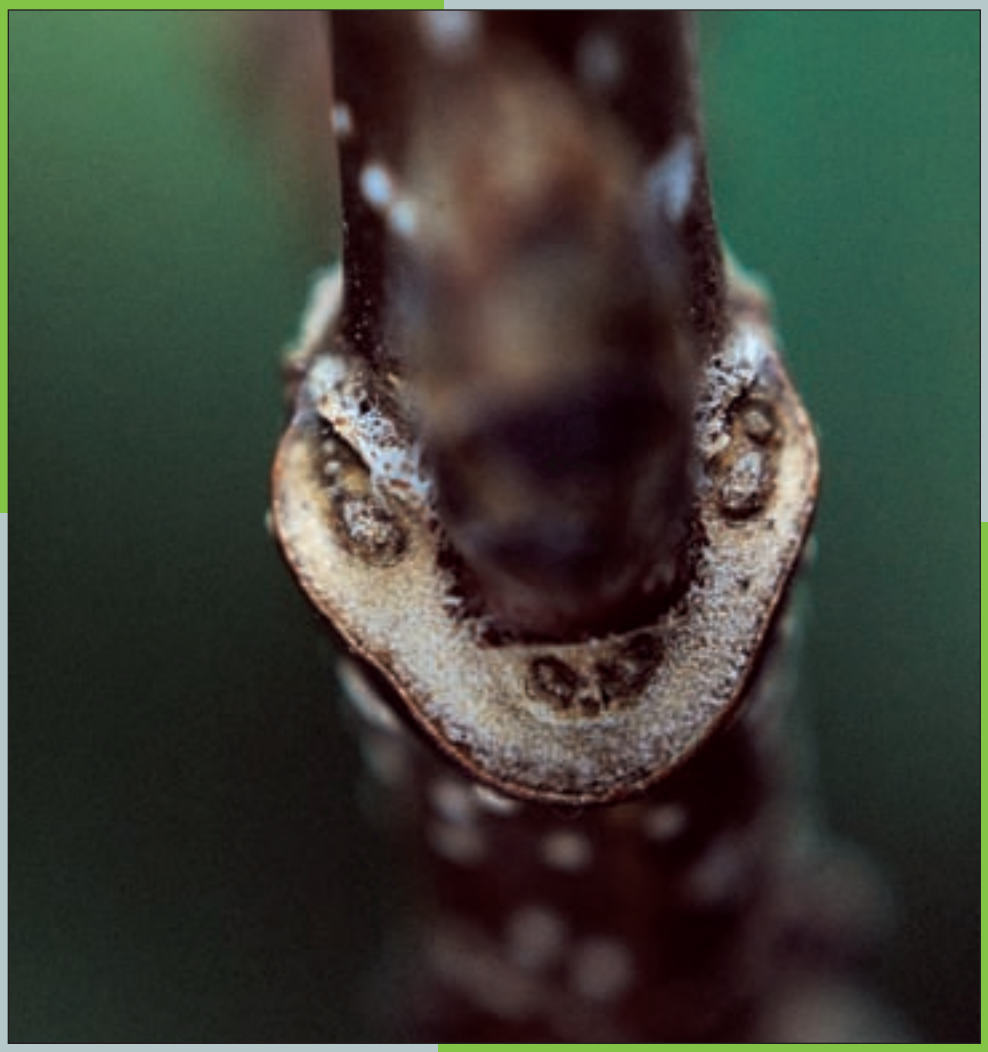
Anatomy of a Twig

Besides serving as the external framework upon which trees grow, twigs have complex function and are characteristic by species. Twigs are important clues to tree identification when leaves are absent. Features such as stoutness, color, buds, leaf scars and pith are easily observed by eye or through the magnification of a hand lens. Detailed observation leads to an increased understanding of how trees grow.

Some twigs are strong and robust, measuring 1/2 inch or more in diameter. Among common Kansas examples are Kentucky coffeetree and tree-of-heaven. Other twigs, such as those of willows, have fine or even wispy features. These characteristics are obvious and helpful in identification even at a distance.

Most twigs are gray or brown, but some are distinctly colored throughout the year. Boxelder maple has shiny green twigs. Some dogwood species have deep red twigs. These colors are most noticeable on current-year growth at the terminal ends of branches. Some twigs have a smooth waxy shine, others are dull and woody, while still others, such as staghorn sumac, are pubescent or densely hairy.

All twigs have buds which produce new leaves and twigs. Buds vary widely in color and appearance. Most have overlapping scales, though some are hairy, some



appear smooth, and some are naked. Some buds are very large, while others are inconspicuous. They always develop at the base of a leaf stalk, and are thus associated with leaf scars. Large buds at the ends of twigs are called terminal buds, and are responsible for the continuing elongation of a twig. Buds along the sides of a twig are termed lateral buds.

The arrangement of buds and leaves is an important detail that helps to identify a tree. Most Kansas species have an alternate arrangement of parts, meaning that only one leaf emerges at a particular point on a twig. However, three common Kansas trees have opposite arrangements, where leaves and buds are found in opposing pairs along the twig. These can be remembered by the acronym MAD — maple, ash and dogwood. Even more unusual is a whorled arrangement, where three or more sets of buds arise at a particular point of a twig. Catalpa is an example.

Leaf scars remain after autumn leaf drop. Size and shape of leaf scars are often helpful in identifying a tree. Features of leaf scars are discussed in the preceding text.

Lenticels are small breathing pores located on a twig. They may be raised and wart-like, or simply appear as random dots along the twig. For the most part, they are of little value in identification.

Pith is a final twig characteristic that may provide clues to a tree's identity. Pith is found at the center of a twig's interior, and is visible when the twig is cut longitudinally. Pith usually differs in color from the surrounding wood, and often forms diagnostic patterns. Viewed end-on, the pith of oaks and cottonwoods is star-shaped, while that of ashes and elms is circular. Most species have continuous, spongy pith, but some, such as black walnut, have chambered pith.

Rate of growth can often be estimated by looking at terminal twigs. Healthy trees may produce a foot or more of new growth each year, though some species may produce less than an inch of twig elongation. New growth is determined by tracing backward along the twig to a series of encircling slits called bud scale scars. New growth is also usually evident by well-defined twig features that tend to fade after a year or so. Current-year growth is shinier and more colorful than old growth.

Edited by Mark Shoup

TRADITION PASSED ON

Editor:

I have been hunting the same folks' land near Smith Center since I was carrying a BB gun with my grandfather and uncle. I've never missed a year since about 1974, regardless of distance, bird populations, whatever.

My grandparents were both from Smith Center and farmed in that area until the Dirty Thirties. Grandpa began hunting with another young farmer in that area; then his sons (my uncles) hunted there with that farmer's boys, and it has been a family tradition for many decades. I am the third generation, and my sons the fourth, to continue this tradition. Now my grandfather has passed away, as has the farmer who owned the ground, and "the boys" of the other farmer are in their late sixties.

Interesting how things continue to work full circle: one of the grandsons of the original farmer is now farming the ground, and he – and now his young sons – also hunt with us, so the tradition continues.

I wouldn't trade that hunt and the memories that have been logged for anything.

Mike Read
Houston, Texas

SNOW SNAKE

Editor:

About four years ago just north of Greensburg, I was teasing my sons about snow snakes. We were hunting one afternoon, and even though there was some snow on the ground on the north sides of some of the sand hills, it had warmed up quite a bit. My oldest said, "Dad, there is your snow snake."

I thought he was joking, but there in the snow was a rather large black snake. We call them chicken snakes at home because they like to eat eggs and small chickens. I thought it was dead, but when I touched it with my gun barrel, I discovered that it could barely move its head. It moved in extremely slow motion.

We moved it off the snow and back to the mouth of its den, about 3 or 4 feet away. We watched it for a little while, and it gradually crawled into the den out of sight. I would not have believed it if we hadn't observed the incident. We guessed it had warmed up enough for it to crawl out, and when it got on snow, it got too cold.

Johnny Nichols
Pryor, Oklahoma

MORE THAN HATS

Editor:

I was hunting last Sept. 25 at Cheyenne bottoms when a vehicle with two guys wearing KDWP shirts flagged us down. They reached into the back of the vehicle and pulled out three hats with the "Pass It On" logo. I just wanted to send a letter saying "thank you" for the hats and for everyone working for KDWP. Thank you for the conservation work you do day in and day out.

As we drove away, the only words that I could think of after I was given the hat was that hunting is for a lifetime. Thank you for everything the KDWP staff does.

Lane Peterson
Galva

THROW THE BOOK

Editor:

After reading the July/August issue of ***Kansas Wildlife and Parks*** magazine, I went from frustration, to flat out anger. In the "Law" section ["Jump To Federal Court," Page 35], CO Dan Melson of Eureka relates the incident of three men shooting 29 Canada geese. They were charged in federal court and fined a total of $3,725. How is this possible? It does not seem the punishment fit the crime. They faced the federal charges, but it seems to me that the men should have had the book thrown at them.

These idiots should have received 30 days in jail, the fines, indefinite suspension of their hunting privileges, surrender of their firearms, and a swift kick.

Whether or not I hunt in any given year, I always purchase my state hunting/fishing combo license, HIP stamp, and state and federal duck stamps. It is not a waste of money to do this because I know where the funds are going. Few times have I ever bagged a limit of game, mostly because I want to leave some for others to enjoy and for reproduction. I follow the game laws, period.

Thank you for your time and for all of the good the Kansas Department of Wildlife and Parks does for this state, and especially for our hunting and fishing heritage.

James P. Dewell, II
Topeka

ALBINO TURKEY

Editor:

Here is a digital picture that I took of an albino turkey this November. I saw it in Chautauqua County near the Quivira Scout Ranch while bow hunting for deer with a friend. I decided to capture it on film rather than on the end of my arrow. I took this picture from about 6 yards away before they noticed me. There were actually two albinos among this small group of birds.

I doubt that they will make it through the winter because they are so easy to spot, and being young birds, they are not overly cautious. We look forward to each issue of your magazine. Keep up the good work.

Glen Andrews
Olathe

WHY YEAR-ROUND COYOTES?

Editor:

I recently ran across your web site while looking for information on coyote hunting. I live in northern Wisconsin. I am also a student at University of Wisconsin-Stevens Point. I am in a class and have to write a research paper on the social and biological reasons for a Wisconsin game law. I chose the year-round coyote season.

One would think with a year-round season, coyote populations would become depleted, but this does not seem to be the case. I was wondering if you had any information on possible social or biological factors that would make a year-round coyote hunt possible or desirable in any state, even if it does not necessarily pertain to Wisconsin.

Don Crass
Stevens Point, Wisconsin

Dear Mr. Crass:

There are both sociological and biological reasons for the coyote's persistence despite a year-round season. Biologically, the coyote's reproductive potential increases with increasing resources (food, shelter, etc.). When harvest pressures reduce coyote populations, the remaining animals have more than sufficient resources and have high reproductive rates (sometimes litter sizes in the teens). When there is plenty of food to go around, pup survival is high. Populations can increase quickly.

Sociologically, harvest is high when populations are high because the likelihood of success is high. When the population is low, opportunity for success is lower.

Sociologically, somewhere between lots of coyotes and no coyotes is the point of diminishing returns (regardless of pelt value) – where it takes more effort to kill a coyote than killing a coyote is worth (i.e. for the pelt value or for depredation control). This is why coyotes were not eradicated back when coyotes were poisoned during intense eradication efforts or when coyotes were very valuable. Also, when pelt value is the driving factor, pelts are only high quality from about November through February, so there is an effective "season" of only four months for those harvesting for the pelt, regardless of what the regulations allow.

As for why a year-round season is desirable, Kansas is an agricultural state. The coyote has a long tradition of being viewed negatively by many agricultural producers because sometimes they prey on domestic livestock. Some landowners have had an interest in shooting coyotes on their property to keep their numbers down (regardless of how effective or ineffective this is).

I don't believe this is as widespread as it once was, and this has no impact on the population as a whole. From a management perspective, the coyote sees very little additional harvest pressure from a year-round season, and its populations are not harmed by the season, so there is really no reason to disallow it. Nor would there be support from many constituent groups.

– Matt Peek, wildlife research biologist, Emporia

EEL QUESTION

Editor:

Back in the 1940s, I lived on a farm and did a lot of trotline fishing because the dam for Coffeyville backed the water up to the west edge of our farm.

We caught eels in this river pretty regularly. Not a lot of them but every year that I can remember. I can't see how they would get to the ocean and back there because of the numerous dams on the different rivers. Can you explain how they would still be there and how they got there if your story is right ["Eel-Aborate Life Cycle," ***Kansas Wildlife and Parks*** magazine, Nov./Dec. 2002, Page 43].

I know that the dams on the Verdigris were there in the 1940s and that the Verdigris runs into the Neosho River and it into the Grand Lake in Oklahoma. And that dam was in place in the 1940s. So how did the eel get by those dams? In fact, Coffeyville has two dams they would have to get over, so unless they can swim upstream during the floods, I see no way for them to get there.

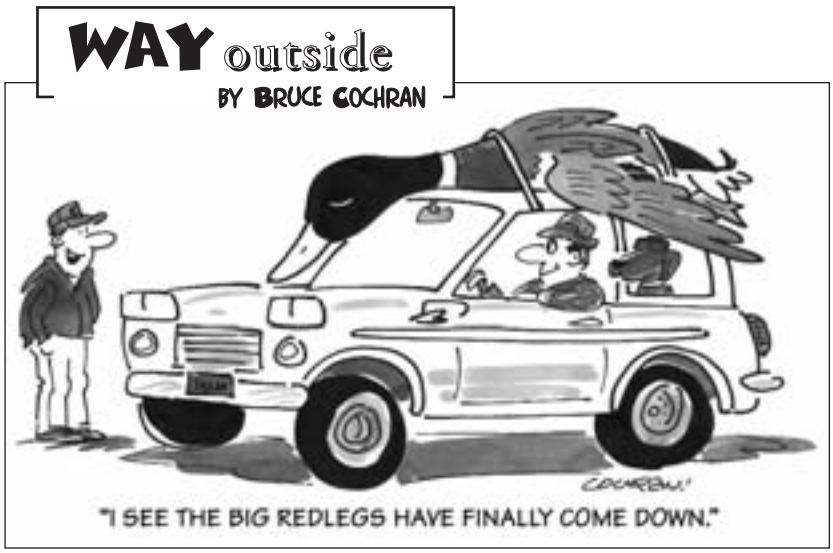
Floyd F. Rogers
Great Bend

Dear Mr. Rogers,

Eels can navigate relatively low dams by swimming/crawling along areas with seep water. On rainy days, and nights with especially heavy dew, they can crawl over land from one body of water to the next. As a kid, I would occasionally find them in drainage ditches. While in college, I found some in a pond several hundred yards from the nearest stream.

I've talked with people at Coffeyville and Toronto, and they told me there were many eels in the Verdigris when Toronto Dam was built.

– Tom Mosher, fisheries research coordinator, Emporia



Water Rescue

On Dec., 2002, the U.S. Army Corps of Engineers and the Kansas Department Wildlife and Parks recognized three members of the Peterman family of Little River with the Corps of Engineers Heartland Award for Heroism.

Sheila Peterman, her son Sean, and her grandson Shayne are honored for heroism by Greg Salisbury, KDWP conservation officer, and Dan Hays, Corps of Engineer park manager.

On Aug. 11, 2002, Sheila Peterman, her grown son Sean, and her small grandson Shayne had been boating on a windy day at Kanopolis Reservoir and observed a family of five from Great Bend on a sinking boat. The Great Bend woman was caught on the console of the sinking boat, and Sean donned a life jacket and rescued the drowning woman. The Peterman's then used a cell phone to call for help while pulling the Great Bend man, his wife, and three young children to safety.

The Ellsworth County Sheriff's Office, the Corps of Engineers, and KDWP responded by calling an ambulance and towing the sunken boat to shore. The heroic and unselfish actions taken by the Peterman's prevented a possible tragic day for a Great Bend family enjoying a day at the lake.

The Great Bend boat had swamped when the operator was changing fuel tanks. Strong wind had turned the boat, and water rushed over the boat stern, quickly sinking the boat. All three children were wearing life jackets as required by law.

For questions regarding boating safety or to enroll in a boater education class, contact your local Wildlife and Parks or Corps of Engineer office.

— Greg Salisbury, conservation officer, Salina

WANTED: Everywhere!

On the opening day of the 2002 spring turkey season, I was patrolling along the Arkansas River in Hamilton County when I discovered a pickup about 3 miles east of Coolidge. When I approached the pickup, I was unable to see any sign of hunting equipment. The vehicle operator moved out of the roadway and went to the back side of the truck, never making eye contact with me. As I drove by, I noticed that the truck had Oklahoma plates.

About 45 minutes, later, I saw the same pickup 3 miles east of Syracuse. I decided to stop and make contact with the driver. The driver seemed quite nervous. He said he wasn't hunting but was looking for hay that he might be able to buy and haul to Oklahoma.

I felt something wasn't right about him, so when he left the area, I ran a registration check on the vehicle plates. It came back as current to an individual in Oklahoma.

As I continued to patrol, I noticed that the pickup went north of Kendall. Very little hay in that area would be for sale, so I began to wonder if he might be someone picking up snakes and turtles. I decided to follow the pickup.

When he neared the junction of Kearny, Wichita, and Greeley counties, I called back to the Hamilton County dispatcher to see if she had run a check for a stolen vehicle on the pickup. The dispatcher confirmed the tag number and told me the vehicle was, indeed, stolen.

I was now behind a stolen pickup 25 miles from the nearest backup, so I had the Hamilton County dispatcher call both Greeley and Wichita county sheriffs' offices that the stolen pickup was north-bound on the county line moving toward Highway 96.

Through radio contact, I could finally tell that both counties had patrol units on the way. Wichita County officers were just two miles away and closing. It was decided to try to stop the vehicle before it reached Highway 96, so I turned on my red lights, and the vehicle pulled right over and stopped. Wichita County officers arrived and took the driver into custody. He had no identification; we found nothing at all in the pickup.

When we arrived at the Wichita County Sheriff's Office, the driver finally gave officers a name and date of birth.

I was in the radio dispatch room when the dispatcher ran the record check. We had a career criminal. He had 27 different names and used two different dates of birth. The Teletype machine printed 16 pages of his criminal record. He had been arrested in Alabama, Arkansas, California, Colorado, Georgia, Idaho, Kansas, Maine, Montana, New Mexico, North Dakota, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Utah, and Washington. He was a car thief and hot-check writer with criminal offenses dating back to 1943. He had spent much of his 79 years of life in jail.

Kansas authorities soon contacted Oklahoma, and several days later he was returned to Oklahoma to face charges of car theft.

— Bruce Peters, conservation officer, Lakin

– National Rifle Association WOMEN ON TARGET

The National Rifle Association's Women On Target program is designed to create more hunting and shooting opportunities for women. There are currently about two million American women who hunt and an additional four million who enjoy target shooting. These numbers are steadily increasing.

Fulfilling its mission to "create opportunities and encourage, educate, and mentor women's responsible participation in the recreational shooting and hunting sports," Women On Target is helping women learn shooting and hunting skills in a safe and supportive women-only atmosphere. In addition to exciting women-only hunts, Women On Target is also sponsoring a series of charity and instructional shoots.

What People are Saying About Women On Target:

"The Women On Target program encourages women to participate in shooting sports, educates them on how to do so safely and successfully, then provides them with arenas in which to enjoy their new-found skills." – Doug Pike, outdoor columnist, the Houston Chronicle

"NRA's Women On Target sponsors women's and couple's shooting events, but it has gone one step further, becoming the first national organization to offer women-only hunts." – Diana Rupp, editor, Petersen's Outdoors for Women

"...an excellent and meaningful program that is not only good for the ladies who want to get into hunting, but probably even more important for the future of hunting." – Bob Gooch, syndicated columnist

All levels of experience are welcome in this program. For more information about women's hunts or shoots, phone (800) 861-1166 or email WomenOnTarget@nrahq.org.

SEBELIUS APPOINTS HAYDEN

On Jan. 7, Gov. Kathleen Sebelius announced the reappointment of Kansas Department of Wildlife and Parks Secretary Mike Hayden. Hayden was hired to head the agency by former Gov. Bill Graves on Jan. 2, 2002, and was confirmed by the Kansas Senate on Feb. 20, 2002.

"I would like to thank Gov. Sebelius for giving me this tremendous opportunity," said Hayden. "I am excited to continue to serve the people of Kansas and look forward to working on behalf of our state's excellent natural resources."

As a cabinet-level agency, the Department of Wildlife and Parks is administered by a secretary and is advised by a seven-member commission. Comprised of nearly 400 employees across the state, the department's mission is to conserve and enhance the natural resources of Kansas.

Hayden served as speaker of Kansas' House of Representatives from 1983 until 1987 and as the 41st governor of Kansas from 1987 until 1991. Soon thereafter, President George H. W. Bush appointed him assistant secretary of Interior for Fish, Wildlife, and Parks. In 1993, Hayden became the president of the American Sportfishing Association, a non-profit trade association working to benefit America's fishing resources and the sportfishing industry.

Hayden graduated from Kansas State University with a bachelor's degree in wildlife conservation and received a master's degree in biology from Fort Hays State University.

– Chad Luce, public information officer, Topeka

WILDLIFE AND PARKS AWARDED KDOT FUNDS

On Jan. 3, then-Gov. Bill Graves and Sec. of Transportation E. Dean Carlson announced the approval of a Transportation Enhancement Project to the Kansas Department of Wildlife and Parks (KDWP). The nearly $2 million dollar grant will fund a visitors center, with amenities to include interpretive displays and an observation tower, at the Cheyenne Bottoms Wildlife Area near Great Bend.

The city of Great Bend will also be a partner in the project, assisting in the operation of the facility and providing future enhancements to the site. The Kansas Wildscape Foundation, a non-profit organization focused on providing outdoor recreational opportunities in Kansas, has begun private fund-raising efforts on behalf of the project as well.

"Our department is excited about the opportunity to further showcase one of the world's premier wetlands," said KDWP Secretary Mike Hayden. "On behalf of the department and the sportsmen and women of Kansas, I would like to thank the governor, Secretary Carlson, Wildscape, and the city of Great Bend for making this project possible."

"The Department of Transportation [KDOT] was pleased to cooperate with the governor and Secretary Hayden on allocating funding for this project because of Cheyenne Bottoms' significance and its potential to attract tourists," said Carlson. He added that he believes the project would improve safety and convenience for the traveling public on K-156.

Review of the project application was accelerated at the request of Gov. Graves, who had shown a commitment to improving Cheyenne Bottoms after taking office in 1995.

Cheyenne Bottoms is a 41,000-acre lowlands seven miles northeast of Great Bend. The KDWP operates 19,857 acres as the Cheyenne Bottoms Wildlife Area. The Nature Conservancy manages an additional 7,200 acres of the area.

Designated a Wetland of International Importance, Cheyenne Bottoms provides a crucial migration stopover area for nearly 40 species of shorebirds, sandhill cranes, and waterfowl. Annual visitors include hunters and wildlife watchers from across the United States and the world.

The Transportation Enhancement (TE) Program was initiated under the Intermodal Surface Transportation Efficiency Act (ISTEA) and continued under Transportation Equity Act for the 21st Century (TEA-21), the last two federal transportation congressional acts totalling 12 years of funding. The only types of improvements that can be funded under this program are historic restorations, scenic improvements, and construction of pedestrian and bicycle facilities that serve as part of a transportation system.

KDOT has received two national awards for its management of the TE Program. For more information on the Kansas Department of Transportation TE Program, contact Marty Matthews at (785) 296-3585.

— Chad Luce, public information officer, Topeka

11 ON FORTUNE 500

The Congressional Sportsmen's Foundation (CSF) and the National Shooting Sports Foundation (NSSF) have released a report on the economic impact of hunters and anglers in America. The report, entitled *The American Sportsmen: Take A Closer Look*, uses the results from the U.S. Fish and Wildlife Service's 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation and compares hunters and anglers impact on the economy with other industries.

There are more than 38 million sportsmen in America who spend more than $70 billion a year in pursuit of their pastime. That is twice as many people as belong to labor unions, and sportsmen support 1.2 million jobs, well more than Wal-Mart, the country's largest employer.

NSSF has distributed 50 separate and individualized news releases for each state's spending, detailing specifics tailored to the local media's interest. In Kansas, the report reveals, one of every five Kansas residents hunts or fishes, and annual expenditures by Kansas sportsmen equals 50 percent of the cash receipts from the state's wheat crop. (In Florida, it is greater than the orange crop.) *The American Sportsmen: Take A Closer Look*, with national statistics and an interactive map of state-specific information, is available on the internet at www.sportsmenslink.org

— Bullet Points

LIGHTS BACK ON AT MOTEL 6

According to a letter to U.S. Sportsmen's Alliance staff from Accor Economy Lodging, the relationship between it and the Humane Society of the United States (HSUS) came to an end on Dec. 31, 2002, and will not be renewed for 2003.

In May, the U.S. Sportsmen's Alliance, a national sportsmen advocacy organization, discovered the relationship between Accor Economy Lodging and HSUS, the country's largest anti-hunting organization. Accor, whose properties include Motel 6, Red Roof Inns, and Studio 6, are affordable motels used by many sportsmen while on hunting and fishing trips.

The Alliance encouraged sportsmen to contact Accor to express their displeasure with the partnership and educate the company about HSUS's real agenda – to end all hunting, trapping, and other forms of animal use.

"Accor's decision to end its partnership with HSUS proves that the sportsmen's voice carries weight," said Alliance Vice President Rick Story. "Hunters, trappers, and anglers from across the country made a point to contact Accor to help its administrators better understand where a promotion of the Humane Society of the United States could lead. It will not lead to the salvation of millions of homeless dogs and cats, but it could easily lead to the downfall of outdoor traditions enjoyed by millions of sportsmen."

Sportsmen and sportswomen can thank Accor Economy Lodging for its decision by contacting George Le Mener, President and CEO, Accor Economy Lodging, P. O. Box 809092, Dallas, TX 75380-9092 or send him an e-mail c/o Kelley Johnson at kjohnson@accorel.com.

The U.S. Sportsmen's Alliance protects the rights of hunters, anglers, and trappers nationally in the courts, legislatures, at the ballot, in Congress, and through public education programs. For more information about the U.S. Sportsmen's Alliance and its work, phone (614) 888-4868 or visit its website, www.ussportsmen.org.

— USSA Newsletter

Through a Youngster's Eyes

The job description of a Kansas state park ranger is as diverse as it is challenging. One minute a ranger might be arresting the bad guy and the next minute he might be completing a trail grant that must be in by noon, both of which seem to take place within the same hour. Then, out of the blue, a project comes up that turns out to be one of the most challenging and rewarding in the ranger's career – hosting a youth turkey hunt.

It is a ranger's job to keep the peace, but it's also a ranger's responsibility to mentor our younger generation and instill proper outdoor ethics. In the spring of 2002, I had the opportunity to do this and see the outdoors through a younger set of eyes at a special event at Tuttle Creek State Park and Wildlife Area.

Happy volunteers and proud youth hunter with turkey taken during Tuttle Creek Youth Turkey Hunt in the 2002 youth season.

Drew Ricketts (seasonal biologist), Corey Alderson (wildlife biologist), John Hawkinson (local hunting enthusiast), Larry Larson (local hunting outfitter), and I developed an idea to hold a youth turkey hunt during the new youth turkey season. We selected six young hunters from a local hunter education class to guide over two days. This wasn't a free trip though; they had to produce the top six scores in the class on their final exam. A donation was given to the hunt by the local Three Rivers Chapter of the National Wild Turkey Foundation to purchase essential equipment. The Riley County Fish and Game Association purchased the licenses for the young hunters, so there was no cost to the participants.

After a safety orientation and gun patterning session, the first day of hunting yielded three nice toms. One weighed 24 pounds and had a 10-inch beard with 1-inch spurs. The second day produced two toms. One of these birds weighed 23 pounds and had a 1-inch beard. Our young hunters filled five of six tags in this successful weekend, and it was the first time hunting for each of them. For some, it was only the first or second time in their life that they had fired a shotgun.

Those of us who guided the young hunters discovered something that weekend: it is much more exciting to go hunting with a first-time hunter, and see what they see for the first time, than it is to actually hunt. It's almost like experiencing the outdoors again for the first time.

The entire time spent with the young hunters was memorable. From the youngster starting to catch turkey fever to the look that they get in their eyes after they have made the perfect shot, it's something that we will never forget.

Some of the hunters we guided caught severe cases of turkey fever after harvesting their first turkey. Turkey fever was so bad that they had a hard time walking and talking at the same time. Once the turkeys were tagged, the hunters could not stop talking about the hunt.

If you haven't had the chance to experience the outdoors with a young person, my advice is to get out and do it. It will be time well spent. The benefits of enjoying the outdoors with today's youth are three-fold. First, you introduce the outdoors to a new generation that might help protect our limited supply of public hunting and fishing areas. Second, you help younger generations learn to appreciate the outdoors and the responsibilities that comes with it. Third, hunting and fishing with today's youth is just plain fun and an experience the guiding adult will not soon forget. So remember the slogan: Pass It On!

– Luke Nihart, Tuttle Creek State Park ranger

Rio Versus Eastern

Rio Grande and eastern turkeys are closely related subspecies. A visual difference between the two is the color of the tips of the feathers – the long tail feathers but especially those shorter feathers at the base of the tail, which comprise the base of the fan. Rio Grandes have buff- to very light buff-colored tips while eastern turkeys have copper- or bronze colored tips to these feathers.

Another difference between the two subspecies is habitat. Easterns prefer densely wooded areas while Rios are at home in open prairie habitats. On average, eastern gobblers weigh more than Rio Grande gobblers. And the final difference is geographic. In Kansas, Rio Grandes are the predominant subspecies, ranging from the western border throughout the entire western three quarters of the state. Eastern turkeys inhabit the hardwood timber areas of the northeast and far southeast corners of the state. In the central portion of Kansas, there are areas with both subspecies, as well as hybrids between the two.

– Miller

The Sandpit Legends

by Mark Shoup

My first friend in kindergarten was Nolan Eakin. Our mothers had sewn shards of soft pile carpet together for afternoon nap time, and we made sure ours lay close together on the floor, so we could whisper loudly enough to hear each other and still fool our teacher, Miss Andre, into believing we were asleep. We weren't; she probably knew it.

But there were important secrets to discuss, information that could be dangerous in the wrong hands. During blackboard exercises, Nolan had sketched a rough drawing of a secret, hand-dug underground room he had discovered on his dad's property, outside town. During nap time, we plotted to explore this den, where a mysterious hobo reportedly lived.

After school the next day, Nolan and I slipped into the shelterbelt where the cave lay hidden. We crept quietly through the leafy debris, hiding behind trees and trying to avoid snapping twigs beneath our feet. We must have sneaked a mile before Nolan stopped me.

"There it is!" he whispered.

"Where?" I mouthed, seeing nothing ahead but more trees and fallen limbs. Nolan led the way, creeping to a manhole-sized opening in the ground.

"Look," he whispered, pointing into the hole. Keeping my distance, I bent over and peered into the darkness. All I could see were the edges of wood planks, covered with leaves, around the gaping entrance. My heart was racing, and I was just about to back away when something slammed me forward. I tumbled headlong into a void that would surely mean sudden death.

As I tumbled and rolled against the cave wall, someone was hot on my heels. "Ahhhhh!" I screamed.

"Gotcha!" Nolan shouted smugly. My eyes slowly adjusted to the dim light filtering through the entrance. "Yoooooo!" I shouted, and charged, tackling my friend. We rolled and grunted on the dirt floor for a few minutes, neither of us gaining particular advantage, until I caught Nolan's infectious laughter, and we tumbled apart, propped against the cave wall, panting through our giggles.

As it turned out, the shelter had been abandoned for some time. Nolan had failed to inform me of this minor detail.

Nolan and I would embark on many such outdoor adventures in grade school. His dad had five pits on the property from which he pumped the sand for his ready-mixed concrete plant. In those days, the plant was located behind my dad's hardware store in town, and after school, we often played behind the hardware store or near the plant until our parents closed shop for the day.

One day, Nolan and I were engaged in a friendly rock fight at the ready-mix when I bent down to pick up an effective-looking weapon. Just as I grasped the war-winning missile, Nolan zinged me upside the head with a chunk of concrete the size of a shotput. Needless to say, I bled like a stuck hog. Nolan thought he had killed me. His mom cleaned me up as best she could, and I survived.

Out at the sand pits where the Eakins lived, Nolan led a life that other kids dream about. By second grade, he had access to his own army-surplus jeep in which we rammed around the matrix of roads that criss-crossed the land surrounding the pits. He also had mowed a go-cart track in the woodlot behind his house, where we had great fun playing Barney Oldfield.

And at Nolan's place, even a kid could fly. At times, sand pumped from the pits to breathtaking heights. We climbed these mountains and leapt off, like Superman, safe in the knowledge that our exhilarating freefalls would be broken by the soft sand below.

Of course, the Eakin sand pits provided one attraction no kid can resist – fishing and camping. One afternoon, Nolan and I pitched camp at the oldest pit, no longer in use but an ideal swimming and fishing hole. Little did we know that this night would yield an experience more chilling than the hobo's cave.

Toward dark, I noticed my fishing rod bouncing wildly. Convinced that we had snagged the Lock Ness monster, we took turns reeling and hauling the line. Whatever it was, we knew it was big. After a battle that would have made Hemingway's Santiago proud, we finally landed a huge snapping turtle.

We were at once elated and confused. What do grade school kids do with big snappers? Ignorant of its culinary value and reluctant to release this fishing-gobbling predator, we determined to cut its head off. Easier said than done. While Nolan held the line at a safe distance, I cautiously approached the prehistoric monster and quickly discovered how the reptile came by its name. It's popping jaws were no trifling matter. It's tail, however, was tentatively safe to grasp, as long as Nolan held a death grip on the line hooked in its mouth.

At this point, the details become a bit gruesome, but we managed to disencumber the gnarly critter of its sardonic noodle which, to our sheer horror, refused to cease snapping! This same tenacious fury had apparently imbued itself in the creature's body, as well. This would not do. As darkness fell, we buried the two appendages far apart, fearful that they might somehow find themselves in the night and seek revenge.

I don't recall when we fell asleep that night – wrapped in our sleeping bags a safe distance away. We had agreed to see the sunrise, but slumber bushwhacked us. When we awoke the next morning, the snapper's body had clawed its way out of the grave and made it halfway to our tent before giving up the ghost.

A grisly encounter that any boy would envy, this tale made us legends of the second grade.

WHITE PERCH MENACE!

At the January meeting of the Kansas Wildlife and Parks Commission, fisheries biologist Gordon Schneider, Haven, presented an overview of the impact an inadvertent white perch introduction has had on Cheney Reservoir and the need to take immediate action.

In a striking reversal of fortune for a lake that in recent years has boasted a blue-ribbon walleye fishery, as well as numerous years of solid wiper and crappie populations, white perch – a non-indigenous species – now comprise the majority of fish sampled at the lake. Survival of stocked walleyes and wipers has dropped off for the last three years, and what was once one of the state's finest walleye fisheries is now in serious jeopardy.

To address the problem, Schneider and other staff biologists recommended restrictive creel and length limits on walleye and wipers. Doug Nygren, Fisheries Section chief for KDWP, discussed approaches the department might take in an attempt to manage white perch at Cheney and Wilson reservoirs, the two impoundments where populations have been established. He recommended that the fish be listed as a nonsport fish and that cast nets and seines be legal methods of take for them.

In addition, he recommended that anglers be excluded from wanton waste prosecution if they kill a white perch and don't use it as food or bait. "We need anglers to help control white perch," Nygren explained, "and these changes are needed to allow anglers to legally assist in this effort."

Signs have been placed at Cheney and Wilson reservoirs warning anglers not to remove live white perch from those waters for release elsewhere. Signs at other waters inform anglers that unauthorized stockings are illegal and specifically warn of releasing white perch into other waters.

Non-native species such as the white perch may have been introduced to Kansas waters when anglers dumped bait fish from sources other than the lake in which they were fishing. Such activity is illegal and potentially damaging to the lake because white perch are capable of out competing native fishes for food and space. In addition, it is against both state and federal law to release any non-native species into Kansas waters.

(At the time of this writing, the commission had not taken action on all of these issues. Contact Cheney state park, (316) 542-3664 for details.)

– Shoup

F.I.S.H. CREEL, LENGTH LIMITS

The Fishing Impoundments and Stream Habitat (FISH) program has gained unexpected popularity, with landowners and anglers alike. Now in its fifth year, the program enrolled more than 1,300 acres of ponds and more than 80 miles of streams on private land for public fishing access.

The program features more than 130 sites in 48 counties, including ponds and lakes ranging in size from five acres to more than 100 acres, as well as access to stream reaches formerly unavailable to the public. The FISH sites are open to public access from March 1 through Oct. 31. (Some are open year-round.)

To maintain high-quality fishing opportunities, some special regulations have been established. There is a creel limit of two channel catfish and two black bass on all FISH waters. In addition, a black bass length limit of 18 inches is in effect on FISH waters in regions 1 and 3. Other length and creel limits may apply on these waters, as posted. Otherwise, all Kansas fishing regulations and statewide creel limits apply.

It's especially important for anglers using the sites to respect and follow the rules that apply on FISH properties. You do not need to contact the landowner for permission on FISH waters.

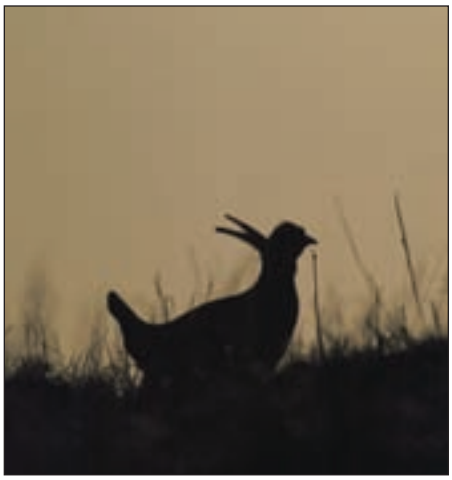
Anglers who want more information should contact the nearest regional KDWP office or the department's Pratt Operations Office at (620) 672-5911 for a printed guide to FISH properties. That information is also available on the KDWP website, www.kdwp.state.ks.us.

Landowners who are interested in enrolling waters in the program should also phone the nearest regional Wildlife and Parks office or the Pratt Operations Office.

– Shoup

Conservancy Chickens

– The Plains Keeper



Prairie chickens gather each spring on traditional communal display grounds called “leks” or “booming grounds.” Males perform spectacular courtship displays in an attempt to gain favor with nearby females. A curious booming sound pervades the scene as the males deflate a striking orange air sac. Elongated neck feathers, called pinnae, raise when the birds are dancing and bowing, giving the impression of horns.

Prairie chicken populations in the Flint Hills have declined within the past two decades. In western Kansas, both lesser and greater chickens have expanded their ranges over the past decade. [See “Note.”] It is important for the prairie chicken that the Flint Hills, one of the last strongholds for the species, be maintained and managed in a way that enhances the species’ chances for long-term survival.

Extensive grasslands and open horizons are essential components of greater prairie chicken habitat. Replacement of native grass pasture with cool season fescues threatens the habitat needs of this species. [See “Out With Fescue, In With Tallgrass,” ***Kansas Wildlife and Parks*** magazine, May/June 2002, Page 41.] Fragmentation by residential and commercial development and encroachment of trees have also contributed.

According to Rob Penner, land steward for the Kansas Chapter of The Nature Conservancy (TNC), “Prairie chickens require a patchwork of different vegetation types. The ideal habitat would include weedy sites for feeding on both insects and seeds, hilltops with sparse vegetation for leks, areas with shortgrass and sparse vegetation for loafing, and taller grasses and forbs for nesting."

One place meeting these habitat needs is The Nature Conservancy's Flint Hills Tallgrass Prairie Preserve, near Cassoday.

"The exact number of prairie chickens on the 2,188-acre preserve is unknown," says Penner, "but there seems to be a trend of increasing numbers of birds over the last three years, since a new management plan was implemented. Management includes traditional burning and grazing by cattle, as well as protecting some areas from being burned or grazed.”

The TNC Flint Hills Chapter is working with a number of Flint Hills ranchers interested in implementing management practices to improve prairie chicken habitat while at the same time maintaining livestock profitability and performance.

Witnesses to the spring mating ritual say that there is nothing in the world like sitting in a blind at sunrise as the first males arrive at the lek. Their booming call and territorial dance must be seen in person to be fully appreciated. Several public lek sites are operated by the Kansas Department of Wildlife & Parks, usually in early to mid-April. Reservations are required because lek locations may change from year to year. To check the availability and locations, call the Emporia Research and Survey Office, (620) 342-0658.

In April, Konza Prairie also offers tours to observe the prairie chicken mating ritual. The observation blind is limited to nine people. Early reservations are recommended. Phone the Konza office at (785) 587-0441 for details.

Note: Greater prairie chickens were expanding in northwest Kansas prior to the Conservation Reserve Program but have increased remarkably in westcentral Kansas since CRP. Lessers were not expanding until CRP came into play. I am certain that the expansion of both species in westcentral Kansas was due to CRP.

For example, research conducted this past summer in Gove County showed that the only places lesser chickens successfully hatched was in CRP, and the only place that broods survived (in fact thrived) was CRP that had been successfully interseeded with alfalfa. These results may have been influenced by the fact that last year was a record-setter for drought.

– Randy Rodgers
research biologist, Hays

NATURAL KANSAS ON WEB

The Sunflower State's nature has just entered the worldwide web at www.naturalkansas.org. This site has been developed through support from Wildlife and Parks' Chickadee Checkoff program. It is linked to KDWP and many private conservation groups and is a result of the Kansas Nature-based Tourism Alliance. The mission of the alliance is to conserve, enhance, and promote natural resources and experiences in Kansas.

The site is now enjoying nearly 12,000 page reads per-month after only a few months' presence.

– Jim Mason, webmaster, NaturalKansas

ENVIRONMENTAL EDUCATION CONFERENCE

Sec. Mike Hayden was a featured speaker at the fourth annual Kansas Environmental Education Conference, sponsored by the Kansas Association for Conservation and Environmental Education (KACEE). Hayden addressed the audience regarding public lands issues and noted that Kansas is second-to-last in the country in acres of available public land.

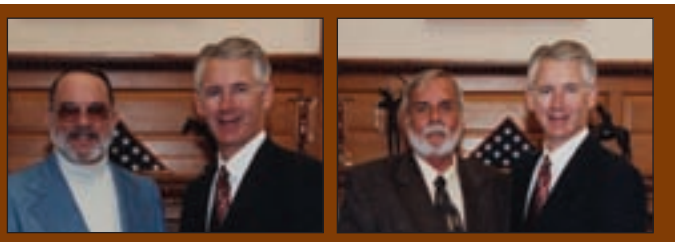
At the conference, KACEE presented two annual awards for excellence in conservation and environmental education. The John K. Strickler Award, presented to an individual, was received by Clark Duffy, acting director of the Kansas Water Office and longtime KACEE board member. The KACEE Award, given to an organization, was received by the Butler County Conservation District and Butler County Community College.

– Shari L. Wilson, KACEE

LASER SHOT

Ed Augustine, Junction City Hunter Education Section program specialist, has compiled data on the department's Laser-Shot Hunting Simulator for 2002. The department has four of these systems in the capable hands of four dedicated part-time employees, including Ed.

Laser-Shot systems are used throughout the state for hunter education classes and Hunter Recruitment & Retention program events.



Former Gov. Bill Graves held a 40-year pin ceremony, sponsored by Division of Personnel Services, on Oct. 9, 2002. KDWP's own Fred Badders and Larry Mull received their 40-year pins. Mull began work with the department on Sept. 24, 1961, and retired on Dec. 6, 2002. Badders started on Feb. 21, 1962, and is still with the department as an engineering technician specialist. Mull spent the majority of his career as a conservation worker.

Funding is provided from the Hunter Education Section and the Pass It On Program. The popularity of these systems with the public are reflected in the following data:

- Hunter Education classes – 65 classes, 2,862 students, (approximately 25 percent of all of hunter education students last year);
- Hunter Recruitment & Retention events – 72 events, 20,493 participants; and
- Law Enforcement Division training – 2 events, 80 officers.

This totals 139 events and 23,435 participants. However, the figure of 139 events does not reflect the actual number of days spent by employees because many of the Recruitment and Retention events were multi-day, including county fairs, boat shows, and other events. These figures represent an increase of 48 events and 6,131 participants over CY 2001.

This program could not operate without the "Gang of Four" who make it happen: Ed Augustine, Dennis Vincent, Ted Billingsley, and Lem Marsh are dedicated, knowledgeable, and professional. They represent this department and hunters in a most commendable way, and there is a steady stream of compliments from the public about them. The volume of requests for the system from folks who have seen them in action is further indication of their superb performance.

– Wayne Doyle, Hunter Education Program coordinator, Pratt

TURKEY SEMINAR MARCH 22

On March 22, the Flint Hills Gobblers Chapter of the National Wild Turkey Federation and the Kansas Department of Wildlife and Parks' Hunter Education section will co-sponsor a turkey hunting seminar. Although geared toward young hunters, the seminar is open to anyone interested in becoming a better turkey hunter. The event will take place from 9 a.m. to 2 p.m. at Camp Alexander, located east of Emporia near Thorndale.

Participants will be given calling tips and other expert turkey hunting advice provided by Hunter Specialties pro-staffer Martin Eichelberger. (Eichelberger will be at Bluestem Farm and Ranch Supply later in the afternoon to provide more turkey hunting advice.)

The seminar will consist of several other education sections dealing with all aspects of successful turkey hunting, including the following:

- turkey calling and locator calling;
- scouting/roosting;
- wild turkey biology;
- shotgun hunting for turkeys;
- bowhunting for turkeys;
- turkey hunting equipment; and
- turkey safety equipment.

Lunch and free T-shirts will be provided. Anyone interesting in this seminar should contact Jared McJunkin, (620) 340-3219, as soon as possible.

– Shoup

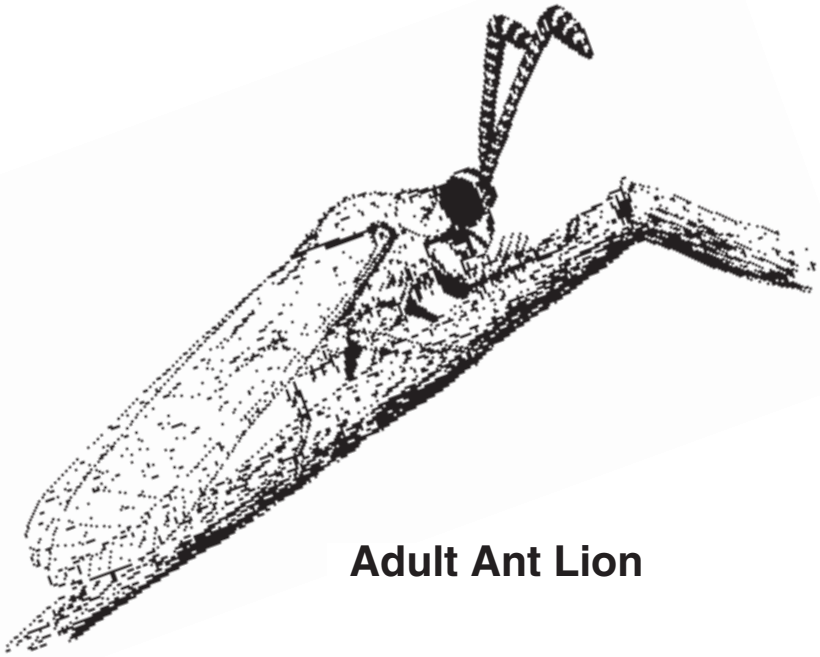
by Mark Shoup

Lions In Kansas!

Yes, indeed, there are lions in Kansas. No, I'm not referring to those large-maned critters you find in Africa, or even the mysterious cougars that have been reported so often in Kansas. What I'm referring to is much more common — and creepy! It's the ant lion.

Even if you haven't heard of the ant lion, chances are you've seen their homes, sometimes called "death pits." Have you ever been in an old barn or garage with a soft dirt floor and noticed cone-shaped pits in the dust? These are ant lion traps, or death pits. These may also be found in sandy areas along rivers or streams.

Sometimes called a doodlebug, the ant lion is a larval-stage insect that burrows itself into soft earth, waiting just below the surface for some unsuspecting prey to slip into it's pit - and jaws. This is one fascinating creature to watch. Easy to catch, you can keep them or set them free and marvel at their digging.



Adult Ant Lion

The ant lion — always moving backwards — is active day and night. It is usually light gray or brown and has a fat, hairy, segmented body and short legs. Although its head is tiny, its jaws are huge in comparison. Some species are very small, but others can be as big as a dime.

The ant lion's stiff hairs point forward, helping anchor it in the sand when wrestling with prey. As fearsome as it is, the ant lion will not bite large animals or humans. In fact, it often lies very still when caught, as if playing dead.

As an adult, the ant lion is a weak flyer and is seldom seen because it usually only comes out at night.

It is the pit, however, that makes the ant lion so fascinating. After mating, the female ant lion

lays eggs in soft dry sand or dirt. Once the larva hatches, it builds pits in spots protected from rain and animal disturbance. Often, this is in places you don't see — under dead leaves and other debris. But sheltered places next to or under buildings are good spots, as well.

Most insects are much faster than the ant lion, and this is why it must build its death pit. Usually a trap for ants, the pit is a dangerous place for any wayward critter the ant lion can capture. Like most predators, it is an opportunist and will eat anything it can catch.

The ant lion builds this snare by digging in a spiral, around and around from the surface of the soft dirt or sand, until it has formed a funnel about an inch or two deep. Hidden beneath the deepest point of the funnel, this predator waits, body covered — perhaps entirely except for its jaws — for the unsuspecting prey to slip in.

This may sound simple, even boring, but the ant lion must be vigilant — and clean. Pebbles, bark, sticks, and other debris must be kept out of the pit because they can give prey something to grasp while falling in. Rain can ruin a pit, forcing the ant lion to rebuild. If one pit is ineffective after a time, the lion will abandon it and rebuild.

While some prey may slip right down into the treacherous jaws of the ant lion, others may struggle. At this point, the ant lion will flip sand or dirt up the pit, causing the prey to continue its slide toward doom.

When prey is captured in its jaws, the lion injects a paralyzing toxin that liquifies the internal body parts of the ant or other prey. Then the ant lion may dine at its leisure, sucking the liquid meal through its jaws.

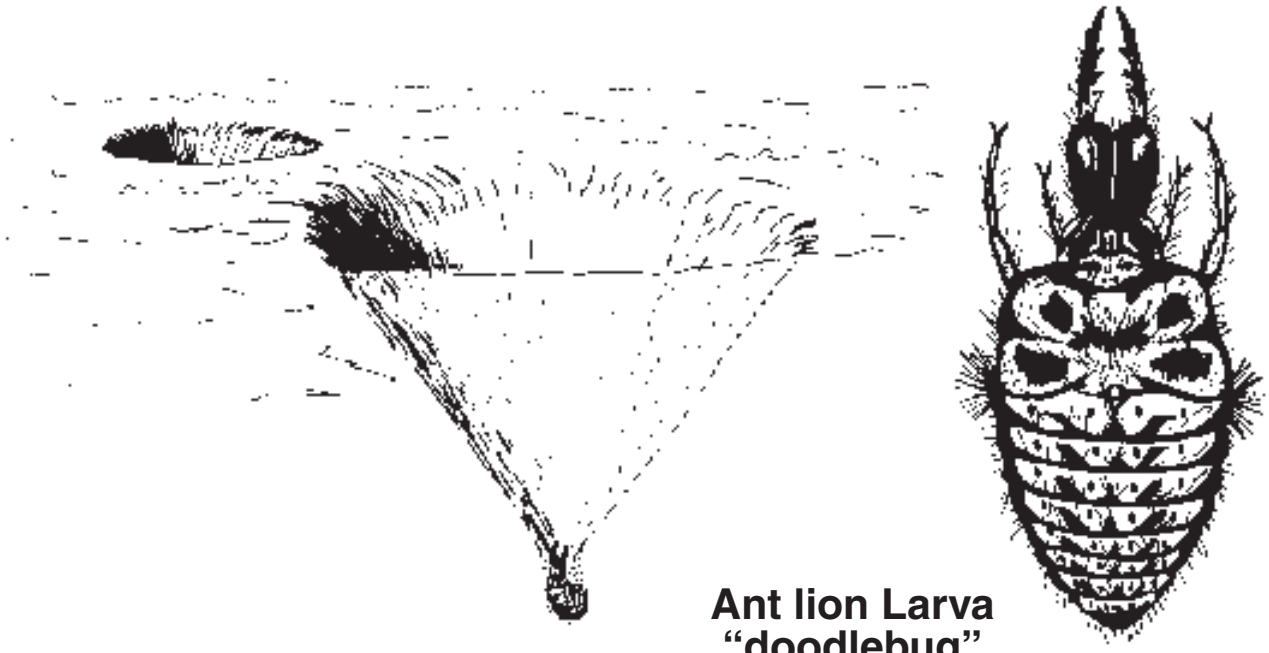
When the ant lion larva matures, it forms a pupae that you might find. This will be a small ball of earth and silk under the bottom of the pit. The pupa is very well camouflaged and difficult to find.

The term "doodle" is used to describe how an ant lion moves across the surface of the ground, wiggling backward from one place to another. When they do this, there is an easily-recognizable trail left in the dust. Follow these trails to find the latest ant lion pit.

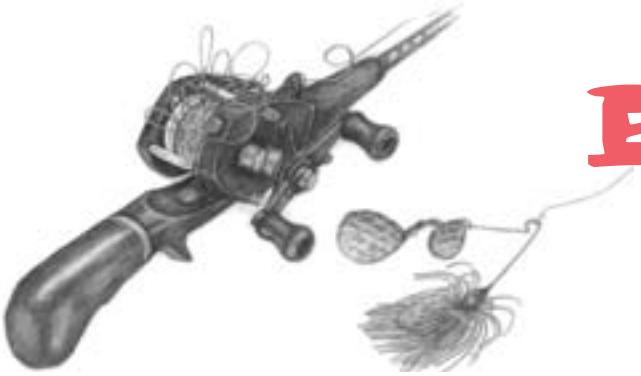
If you find a good spot for ant lions, there may be many pits. This will provide an opportunity to catch them. With a cup, spoon, or your fingers, quickly scoop out the pit from the sides and well underneath. Then carefully sift through the dirt or sand, letting only small grains fall away until you find the critter beneath. If there are a lot of pits, many could be dead ends, but don't give up.

Let one go and watch how quickly it makes another pit. If you want to take it home, make sure you have a container large enough to allow it to make several pits. An old aquarium will work well. Make sure it has ants or other small insects daily and a drop of water every three days. If you line the top of your container with vaseline, the ants won't be able to escape.

This spring and summer, take time to go lion hunting in Kansas. It may be one of most fascinating "safaris" you've ever been on.



Ant lion Larva "doodlebug"



Backlash

by Mike Miller

Way Awesome Ain't Cool

"Man, what an awesome hunt! This is an awesome buck. These Bulldog broadheads do an awesome job, and this new A-1 Hunter is the most awesome bow I've ever shot."

If you have watched the rash of new outdoor television shows on cable, you've heard the above quotes more than once. In fact, you've probably heard them dozens of times, even if you've only watched two or three shows. Television outdoor personalities have ruined the word awesome. I know, we all overused the word during the 1990s, but the outdoor media has absolutely run it into the ground. But they can't take all the blame. If you watch any college basketball on ESPN, you've heard Dick Vitale scream "Awesome, babyeee!" too many times. (Once is too many.)

We need a new word.

I remember when I was in grade school, we used the word "neat" until it didn't mean anything, or at least we got tired of it. So, we hybridized it to bring back some of its former effect — "neato," or "neatness." In high school, we said the word "cool" so much it became "uncool" to say "cool." I'm embarrassed to admit I remember actually saying "coolness." A later generation coined "way cool," which was cool for awhile.

Now, it's becoming not cool to say "awesome." *Webster's* defines awe as a mixed feeling of reverence, fear and wonder. Awesome is defined as inspiring or showing awe. In some instances, I think that's what those who use the word are trying to convey. Perhaps for lack of a larger vocabulary, though, outdoor media personalities have used the word so much it has nearly lost its meaning. How can the way your new bow (provided by one of your show sponsors) shoots and the sound of a huge bull elk bugling both be described as "awesome."

The few bull elk bugles I've heard in the mountains did inspire feelings of wonder and awe, which makes awesome a perfect word to describe them. At least it used to be. And although I love to shoot a bow, it has never been an awe-inspiring experience.

Let's find a new word. Unfortunately, my copy of *The Merriam-Webster Thesaurus* doesn't list the word awesome. I guess we'll just have to use our imagination and our limited vocabulary to come up with some new adjectives.

How about "awesomeness?" Nah, that only worked in junior high. You know, if we want a new word to catch on, we might have to find one that people are somewhat familiar with. And since vernacular is recycled every few years, we could look to the past. "Cool" has made a comeback in recent years, as have a variety of other adjectives we never thought we'd hear again — "groovy?"

We could go way back and rejuvenate some old slang. How about "blue blazes," or "gadzooks," "far out," maybe "outta sight?" No?

We have to find some alternatives or this word won't mean anything. I can't think of anything less inspiring than to hear that the way some goober's new fishing sunglasses look is "awesome."

If we can't find any suitable alternatives, we must use awesome with more discretion. And it's really an awes-, I mean wonderfully descriptive word. In the mean time, let's set up some ground rules. Here's a quick-reference guide: A spectacular sunrise can be awesome; your buddy's new 4X4 pickup with oversized wheels and lift kit — not awesome; the sight of a huge non-typical buck in the early-morning mist — awesome; the sound of your new duck call — not awesome; 300 mallards spiraling down into your decoy spread — awesome; the way you shoot your new 3 1/2-inch-chambered semi-automatic shotgun — not awesome; a 4-pound largemouth exploding on your topwater plug — awesome; the top speed of your $30,000 bass boat — not awesome. Get the picture? Use awesome only when you mean *awesome*.

A perfectly descriptive word is a terrible thing to waste. Conserve it now before it's too late.