KANSAS Wildlife & Parks

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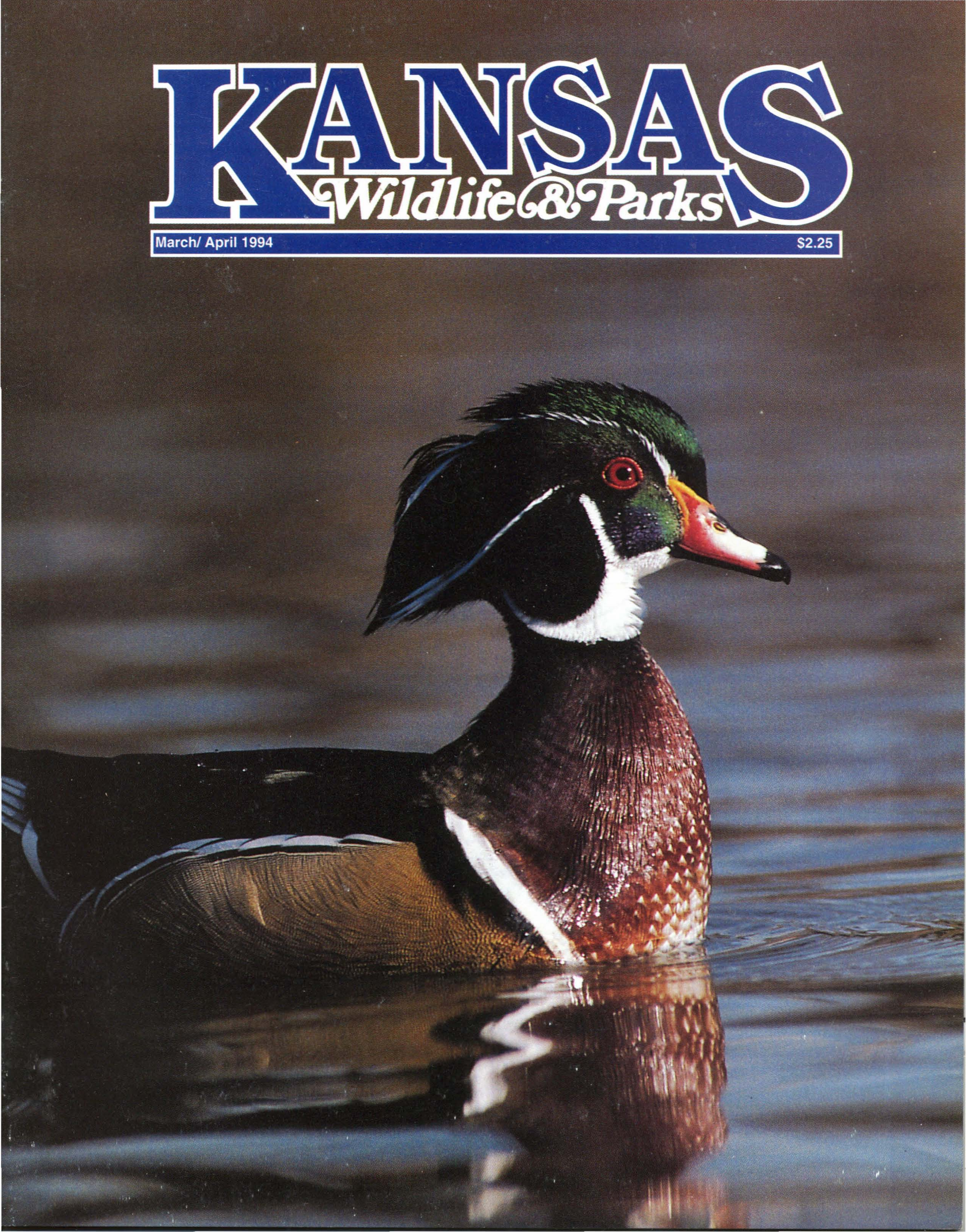

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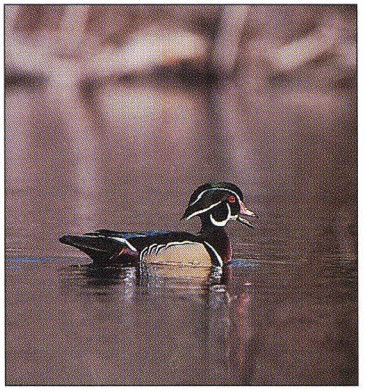

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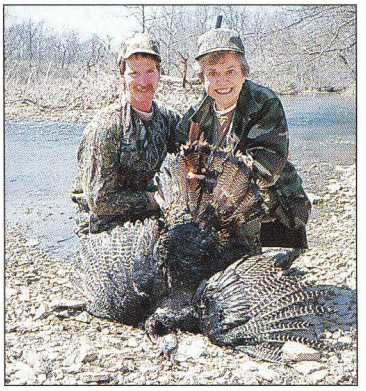

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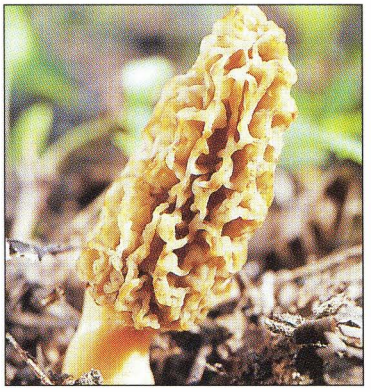

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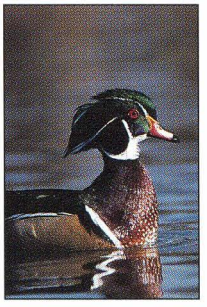
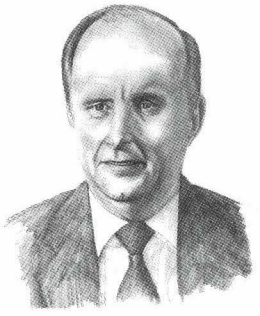


Front cover: Nature's beauty is focused in the plumage of the male wood duck. Mike Blair photographed this drake with a 400mm lens, f/9.5 @ 1/125. **Back cover:** A heavy string of catfish makes you forget the heat and promises many tasty meals. Mike Blair filmed the scene with a 55mm lens, f/16 @ 1/60.

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

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

What Is The Quality Of Life?



Recently, there has been a great deal of attention focused on our state parks and wildlife areas. The flood of 1993 laid waste to thousands of acres of public recreational lands. To the credit of those who use and enjoy those areas, people came forward and let it be known that these areas were important in their lives and should be restored.

It's not that parks and wildlife areas had been totally taken for granted, but this may have been the greatest outpouring of public support on an outdoor recreation issue since the days when federal reservoirs were being built across the state. As a result, it appears that we will be able to at least open all of the flood damaged parks -- but we still have a long way to go before our recreational lands and facilities are up to the level they need to be.

The Governor's budget recommendation to the State Legislature provided enough funding to begin the process of rebuilding our parks and restoring wildlife areas. As you read this, legislative actions are taking place which will determine what the final budget will look like. There is still a need to let the decision makers know what Kansans want in the way of outdoor recreation. The process of reopening our parks cannot begin until the legislature approves funding.

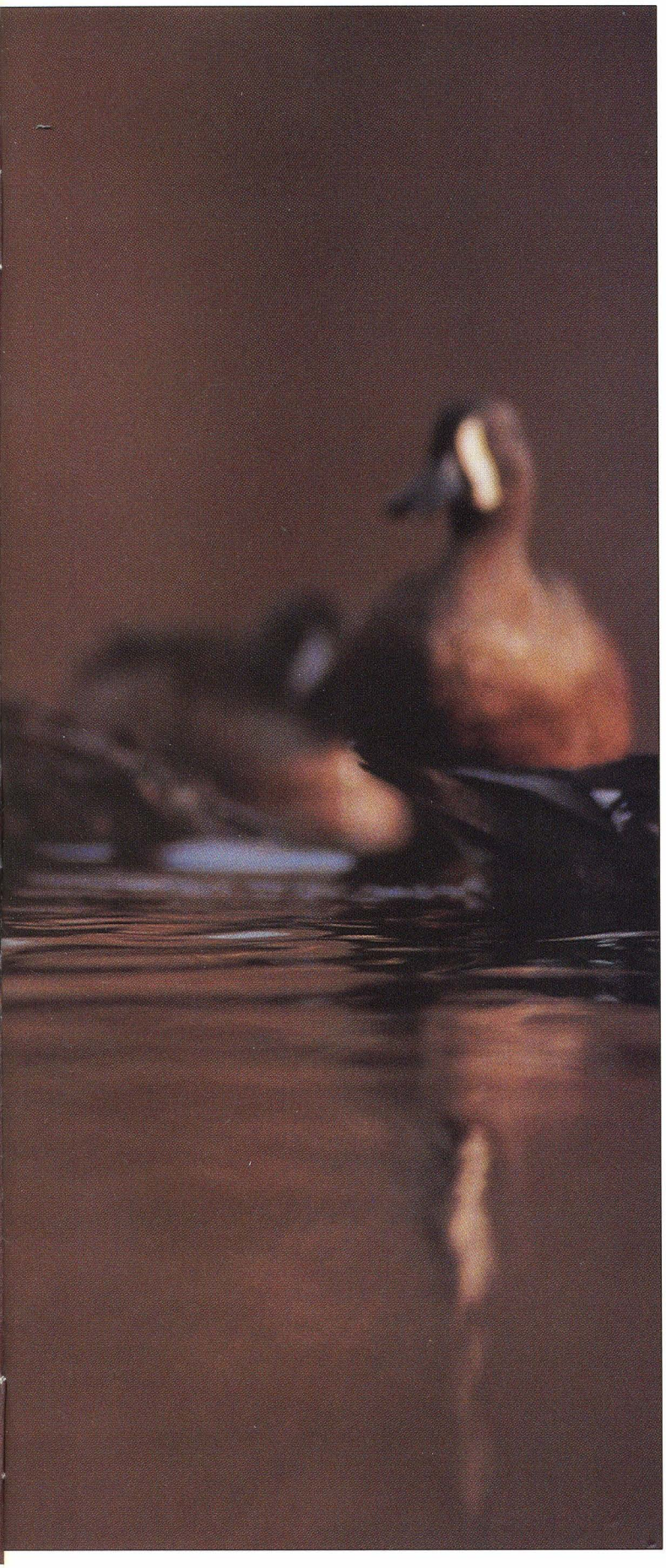
In reality, the condition of our overall finances had more to do with the issue than the floods. In fact, our parks would have been in serious trouble even if there had been no flooding. Most of our parks were built in the 1950s and 1960s. Many of these facilities are at or near the end of their useful life. The situation is made worse by the fact that many parks were under-designed to begin with and lean budgets have led to years of deferred maintenance. The electrical, water and sewer systems, buildings and even roads in many parks are in dire need of repair or replacement.

So what does this mean to you? I firmly believe that our improved outlook in keeping parks open is a result of Kansans saying what things are important to them. We now have an opportunity to say what our state parks and wildlife areas will be in the future. If being able to camp at a quality facility or hunt and view wildlife on public lands enhances the quality of life, we need to express that as well.

Problems can create opportunity. In rebuilding our parks and wildlife areas, we have the ability to provide a greater diversity of recreational opportunities. Our park system is based around large reservoirs and most of these areas offer almost identical facilities. If sufficient emphasis is placed on park renovation, we can increase the range of options to address the needs of hikers, wildlife observers, boaters, wilderness style campers and the physically challenged. Wildlife areas would benefit as well from improved access and habitat development.

Only by clearly demonstrating that outdoor recreational opportunities are a priority will assure their continued availability. I believe these things are important to the people of Kansas and plan to say so. I hope you will join me in this effort.

Ted Ensley



Technicolor Tree Duck

by Marc Murrell
public information officer, Valley Center

photos by Mike Blair

For obvious reasons, the drake wood duck is one of the most recognizable of all waterfowl. Once near the brink of extinction, the woody has made a truly magnificent comeback and today is one of the most common ducks in the Atlantic Flyway.

If you had to pick one type of creature that was more beautiful than any other, the wood duck would surely get a lot of votes. Perhaps the most easily recognized waterfowl species and the most stunning, the wood duck is native to North America.

Its scientific name *Aix sponsa* is duly deserved. *Aix* is Greek meaning a kind of waterfowl and *sponsa* is Latin meaning betrothed, as if in a wedding dress in reference to its magnificent plumage. Its many common names include summer duck, acorn duck, squealer, swamp duck and woody.

Wood ducks are common today, especially along the Eastern and Northwest coasts. In the fall wood ducks migrate early, moving south in September and early October. They migrate as far south as central Mexico, but most of them stay in the U.S. They arrive in summer areas shortly after ice has left the pools and timbered swamps. The northern limits of their summer range barely reaches to Canada. The exact migration routes are difficult to trace since it also breeds over roughly 30 percent of its range.

Wood ducks haven't always been so common. Prior to the turn of the century, the vividly painted duck was the target of man's greed. The meat was sold, but the real value was in the drake's beautiful plumage. So unusual was their color, many specimens were mounted and sold to collectors. Trout fishermen and fly tiers paid $3-$4 for a prime, full-plumed skin of a drake woody. Certain feathers from the breast and sides are prized for making dry flies such as the light and dark Cahills and quill Gordon flies. Feathers from the wings were used for salmon flies.

This demand and the resulting unregulated market hunting caused wood duck numbers to plummet. Additionally, many of the timbered wetlands this wood-loving duck needed were being cut down or drained. By the early 1900s, the wood duck neared extinction.

In 1918, legislation was implemented that closed the season on wood ducks in the U.S. and Canada. The adverse impacts humans were having on North American wildlife populations caused great concern among a few, far-sighted conservationists and organized sportsmen.

Almost unimaginable color and detail adorn the drake wood duck, now common along Kansas waterways. Look for them on streams and woodland marshes.

Although drab by comparison, the hen wood duck has an elegant grace.

At their urging, Congress extended the life of an existing 10 percent tax on ammunition and firearms used for sport hunting and earmarked those funds for distribution to state agencies for wildlife management. The result is called the Federal Aid in Wildlife Restoration Act, or Pittman-Robertson Act, named for its principal sponsors. The measure was signed into law by President Franklin D. Roosevelt on Sept. 2, 1937.

Another beneficial effort was the Migratory Bird Conservation Act, or "Duck Stamp" program that was implemented in 1934. This was funded by a special annual fee paid by active waterfowl hunters and the money was used to acquire refuges and lease wetlands for the primary benefit of migratory birds.

Initial progress was slow. During the height of the program, World War II brought shortages and millions of sportsmen went into the

Prior to the turn of the century, wood ducks were nearly extinct because of unregulated market hunting. So beautiful were the drakes that many were killed and mounted merely for collections. The colorful feathers were also sought by fly tiers.

armed forces, causing receipts from the excise tax to dwindle. Fortunately, conditions improved and by 1987, the programs had generated $1.5 billion for wildlife restoration efforts.

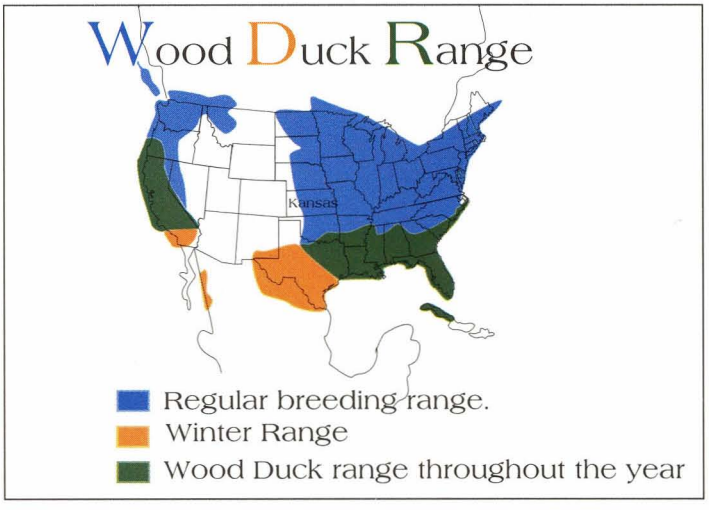
Of the money available to states, 62 percent was used to buy, develop, maintain and operate wildlife management areas. Wetlands targeted for drainage were purchased and kept in tact. Many were vital to ducks and geese for nesting, wintering and stopover feeding and resting during migration.

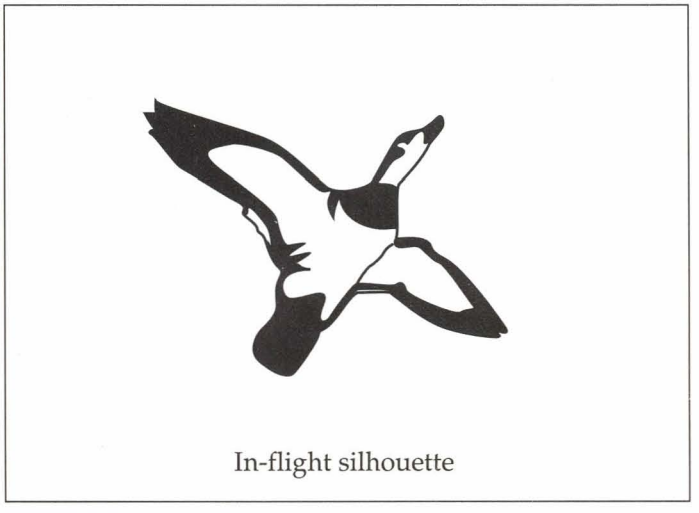
The moratorium on wood duck hunting lasted until 1941. Populations had rebounded and several states allowed a single wood duck in the bag limit. Today the wood duck's is one of the greatest wildlife comeback stories. They are the most common breeding duck in the Atlantic Flyway, and have been restored to most of their original range where suitable habitat exists.

Wood ducks frequent secluded inland pools and streams bordered by woods and forest swamps. They are vocal ducks, especially when feeding, repeating a long series of whistles — *hoo-w-ett, hoo-w-ett*. When startled, a shrieking *hoo-eek, hoo-eek* mixed with a low, barely audible *chick, chick, chick* is heard.

The drake is a vision of striking beauty. Its head is topped with a crest of iridescent green and bronze in front, darkening to iridescent bronze, blue and purple-black at the back. Sides of the head are marked with shimmering purple, green and bronze. Several white streaks cover the head in and around the eye, separating the head into individual works of art. The chin, throat and neck are white and the breast is glossy purple-chestnut and spotted

As one drake preens another, the unusually colored bill is displayed. Woodies are commonly seen in pairs or small family groups. They emit a squealing call.





Habitat is the primary factor in wood duck numbers. They require woodland marshes and streams with mature timber stands that provide nesting cavities. Man-made nesting boxes can help, and many conservation groups build and erect these in suitable areas.

white. The back is rich bronzy green with a dark tint.

A drake's bright orange eye, resembling a college student's after an all-nighter, looks unreal. The upper bill is pink-white in the middle, red at the base with a narrow yellow border extending to the black tip. The lower bill is black.

The hen's coloration is drab by comparison, as with most species of waterfowl. To blend in while incubating the nest, the hen is a gray-brown with a white underbelly. The lone intricate detail is around the brown-black eye, which has a white outline that tapers off as a streak behind it.

The woody's flight is swift and direct with the head held high above the level of the body and the bill pointing downward at a noticeable angle. At a glance, the wood duck's silhouette is recognizable by the long, square tail. They fly in small flocks or family groups, darting gracefully in and out of timbered waterways.

Wood ducks are the only member of the subfamily of river and pond ducks that commonly nest in trees. Mating takes place from February through May. The courtship consists of several drakes swimming around a single hen and displaying their outstanding plumage to win her approval. Once selected, pairs fly together in search of suitable nest sites, generally hollow cavities in tree trunks or branches. Nest trees are generally in wooded areas near streams, ponds and lakes. Weighing about 1 1/4 pounds and measuring 18 inches long, the female can still squeeze into a hole only 4 inches in diameter. Man-made wood duck boxes have been readily used by wood ducks.

Nests are anywhere from 3 to 50 feet above the ground. No outside material is transported into the cavity, but females will use whatever wood chips are present and breast down for the nest. A clutch of 10-15 dull-white eggs is laid, and a 28- to 31-day incubation begins when the clutch is complete. The drake deserts the hen when incubation begins.

The downy young hatchlings are dark brown above with white

patches on the forming wings and side of the rump. The face and belly are yellow-white.

Just a few hours after hatching, the ducklings perform a miraculous feat. With coaxing calls from the mother, the little ducks use sharp claws to climb from the nest, which may be 6 to 8 feet below the opening. Then they simply bale out, falling great distances to dry ground, tiny wings spread and webbed feet out. Observers once watched 11 ducklings jump from a 22-foot high nest to concrete, all bouncing like slightly-burned marshmallows. In less than five minutes, all were following the hen to water. By comparison, a 6-foot-tall man falling a proportionate distance would fall 500 feet!

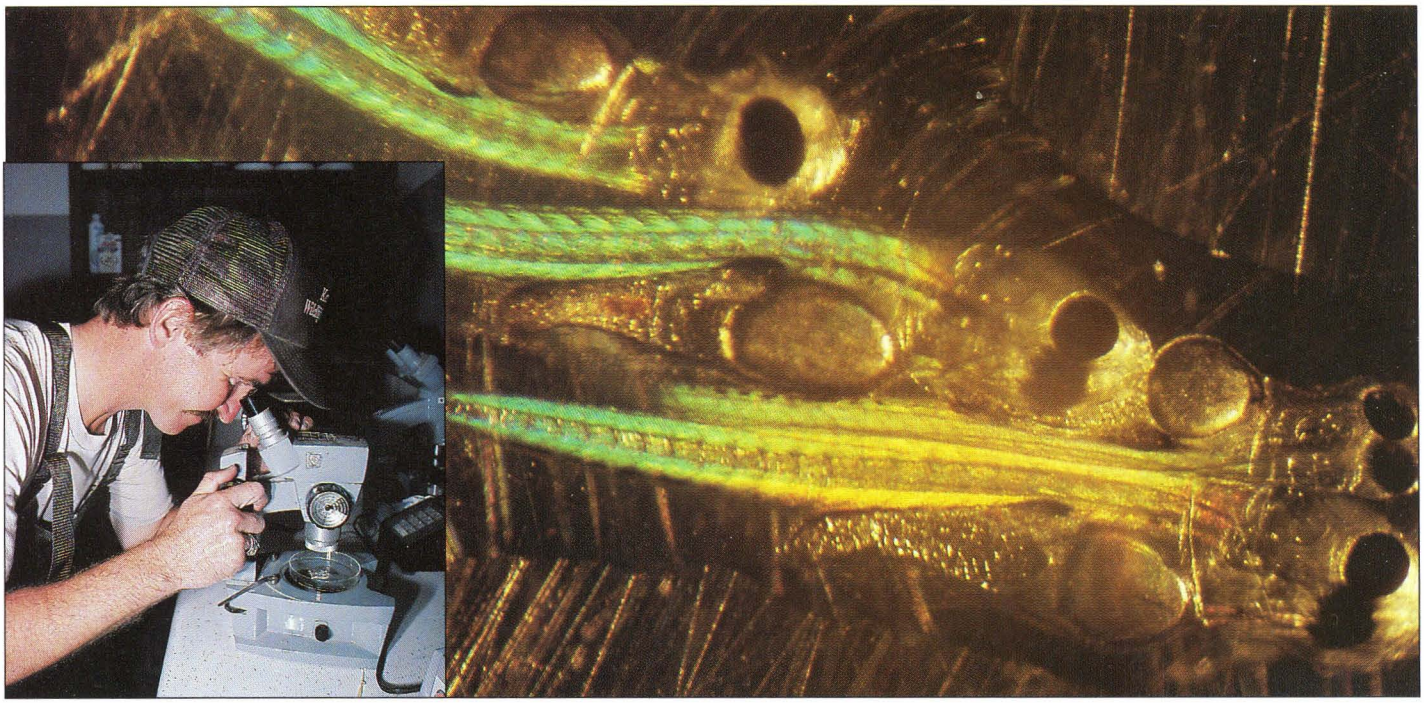
Wood ducks feed along the banks of streams and ponds on the seeds of various trees and shrubs. They are particularly partial to chestnuts, beechnuts and acorns of the burr and pin oak. The large nuts are swallowed whole and ground by the gizzard.

Wood ducks are a unique bird, and the opportunity to view a drake in spring breeding colors is truly a privilege. The history of their tremendous return from the brink of extinction illustrates a species that can adapt, survive and prosper even in difficult situations. And thanks to the efforts of sportsmen, conservation agencies and waterfowl watchers, the wood duck will continue to grace our streams and wooded wetlands.

FISH CULTURE MAGNIFIED

text and photos by Mark Kumberg
fisheries biologist specialist I, Pratt Fish Hatchery

Hatchery biologists unfold the microscopic and fascinating world of tiny aquatic organisms to ensure successful results at the hatcheries.

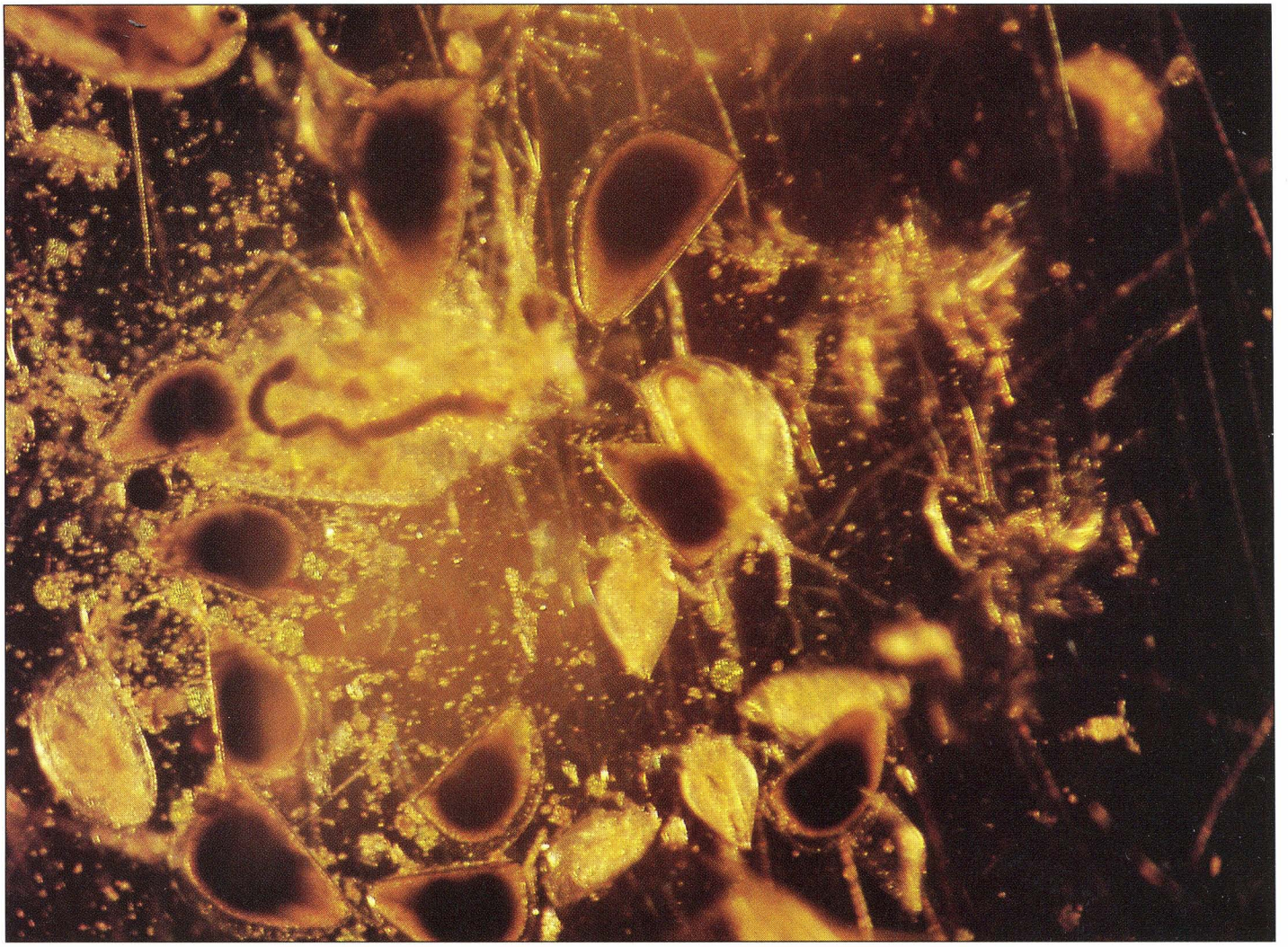


My interest in small insects and aquatic bugs developed when I was a boy growing up on a Barber County ranch. I spent many lazy summer days exploring the river bottoms, ponds and creeks on my family's little oasis. One of my favorite pastimes was collecting whirligig beetles in a jar. I watched them dart around for hours. In college, my knowledge of the aquatic environment expanded through the courses I was required to take to become a fisheries biologist. Now, my job as a biologist at the Pratt Fish Hatchery dictates that I become proficient at identifying many different aquatic organisms, from aquatic insects to microscopic bacteria.

In aquatic systems, larval, or just hatched, fish feed on microscopic crustaceans called zooplankton, which are some of the smallest organisms in the animal world. The zooplankton feed on microscopic plants in the water (planktonic algae) referred to as phytoplankton. This phytoplankton results in the green color often associated with fertile ponds and lakes. This cycle, or food chain, is similar to cattle eating grass, only on a much smaller scale. For fish producing purposes, it is important to have large numbers of zooplankton to ensure the fry grow fast. With some fish species, the variety of food organisms available can also be a factor.

There are three main orders of invertebrates tiny fish feed on. The first and smallest is rotatoria which includes the many different species of rotifers found in fresh water. Approximately 1,800 species have been described with only five percent being restricted to marine (salt) waters. Rotifers were first studied and described by Dutch naturalist Leeuwanhoek in 1703 and since his time, they have become classical objects for study by the amateur microscopist and professional hydrobiologist.

Rotifers were called "wheel animalcules" in some older literature because of the disklike, ciliated mouth which resembles a pair of revolving wheels due to the synchronized beating of the tiny hairs as the organism collects food. This group of plankton is important in the production of striped bass hybrids. These fish are so tiny just after they hatch, that rotifers are just



Hatchery biologists regularly take plankton samples from ponds to identify microscopic populations. Just-hatched fish, or fry, rely on zooplankton for food and the zooplankton must have phytoplankton to survive.

about the only organism they can ingest. Biologists raising hybrids often attempt to exclude other types of larger zooplankton from rearing ponds.

Rotifers are fascinating to study and observe. They move about almost effortlessly in the water, sucking up detritus (small organic particles), bacteria and microscopic plants to satisfy their voracious appetite. They come in many different shapes and sizes.

Under adverse conditions, rotifers are capable of producing a "resting egg" which is resistant to temperature extremes, including freezing, and drying. This explains why ponds can dry up completely for an extended period, then when refilled, they are magically teeming with aquatic life. Sometimes in the late summer or early fall, these small brown resting eggs can be observed floating near the shoreline. Some species of rotifers are capable of secreting a gelatinous material around themselves and surviving dry conditions. One such species was kept for 27 years before being revived by adding water.

Rotifers and other zooplankton can be collected by pulling a very fine-meshed net through the water or by collecting algae masses, placing them in water, then using a pipette or syringe to suck the organisms out of the water.

Cladocera are also very important prey for immature fish. These organisms are often called water fleas because of their jerky, jumpy movements through the water. Large antennae serve as the chief organs of locomotion. Complex movements of the thoracic legs produce a constant current of water between the valves of the organism's shell. Food particles are filtered from the water and collected in a median ventral groove at the base of the legs. This stream of food is carried forward to the mouthparts where the particles are ground by the mandibles before being taken into the mouth. Algae and protozoa have often been assumed to be the chief foods, but it is now known that organic material, as well as bacteria, make up the bulk of food eaten.

Reproduction is parthenogenetic (without fertilization) most of the

time, and only female young are produced. The number of eggs per clutch varies among species but is usually 10 to 20. Production of male eggs seems to be induced mostly by crowding of the females and the subsequent accumulation of excretory wastes and/or a decrease in available food. These conditions, by altering the metabolism, appear to affect the chromosome mechanism in such a way that parthenogenetic male eggs rather than parthenogenetic female eggs are released into the brood chamber. These same conditions can also be responsible for the production of sexual eggs or "resting " eggs, which biologists call ephippia. These eggs are released when the organism is molting, or shedding its shell, and either sink to the bottom or float. Often, rows of ephippia can be seen blown to the shore on a windy day. Ephippia and their contained eggs are capable of withstanding drying and freezing, and their production is clearly an adaptation to adverse environmental conditions. Another interesting adaptation of these tiny organisms, such as the common water flea, is that they do not have special organs to pull oxygen from the water — the gas diffuses through their body surface.

The last but certainly not the least important group of aquatic zooplankton commonly seen are the copepods. Two different suborders of copepods are often seen at the Pratt Hatchery. They are the Calanoids and Cyclopoids. They differ by the length of their antennae and by the number of egg sacs carried by the gravid females. The cyclops has a single eye, either red or black in the center of its head from which its name was derived. They have mouthparts which are modified for seizing and biting and can be predacious on small fish and other organisms. On several occasions I have watched, with the aid of a microscope, cyclops completely devour striped bass hybrid fry. Larger cyclops are also cannibalistic on their smaller family members. In ponds which will be stocked with small fry, management practices must consider the zooplankton populations, and efforts should be made to eliminate the cyclops.

Microscopic surveys can help the hatchery biologist determine not only what zooplankton are present, but also what the conditions of these populations are.

Cyclopoid copepods regularly go into diapause, or a nonencysted dormancy period, during the winter. In spring, these stages resume their active existence when the water becomes warmer. Concentrations of more than a million diapausing copepods per square meter of pond bottom have been observed.

Copepods carry their egg sacs on the posterior part of the abdomen. When the eggs hatch, the larvae don't resemble their parents. These small larval copepods, called nauplii, have fewer limbs and no apparent "tail end" to their body. The nauplii molt 5-10 times, entering a different instar life stage and gaining more adult characteristics with each molt.

Several suborders of copepods are parasitic on fish and other aquatic organisms. Of these, lernaea and the fish louse are the most common. Lernaea metamorphoses into a sticklike structure which attaches to fish by anchors. This parasite can be especially troublesome on goldfish fingerlings because it creates a sore which can then be infected by bacteria. The fish louse is a saucer-shaped organism which can be seen crawling around on fish with the naked eye.

When examining zooplankton samples, biologists identify the organisms and count the numbers of each different order. In managing waters for fish production, we strive for zooplankton populations of 500-1,000 organisms per liter of water.

Fat globules in the body of Cladocera and Copepods give us an idea of the relative fitness of the population. If many fat droplets are seen, the organisms have plenty of food to eat and should maintain good populations. If few droplets are observed, the population may be about to crash, and management efforts such as fertilization can be utilized to increase their phyto-

plankton or bacterial food supply. The number of gravid (egg-bearing) adults is also important as it lets us forecast the future food supply for our hungry fish.

Fish disease diagnoses is another important aspect of microscopic work done at department hatcheries. Fish produced in high-density environments are sometimes stressed, a condition which hinders the immune system's ability to fight bacteria or protozoan parasites. When this happens, tissue samples must be examined to make a diagnoses and suggest what treatment to use to cure the fish.

Two different types of bacteria commonly occur in our area. Since bacteria are so tiny (.5 micrometers wide by 50 micrometers long), it takes a trained eye to see them even at 400X magnification. Bacterial diseases usually occur secondary to parasite outbreaks on fish. The parasites stress the fish and erode the skin and mucous, allowing bacteria to establish.

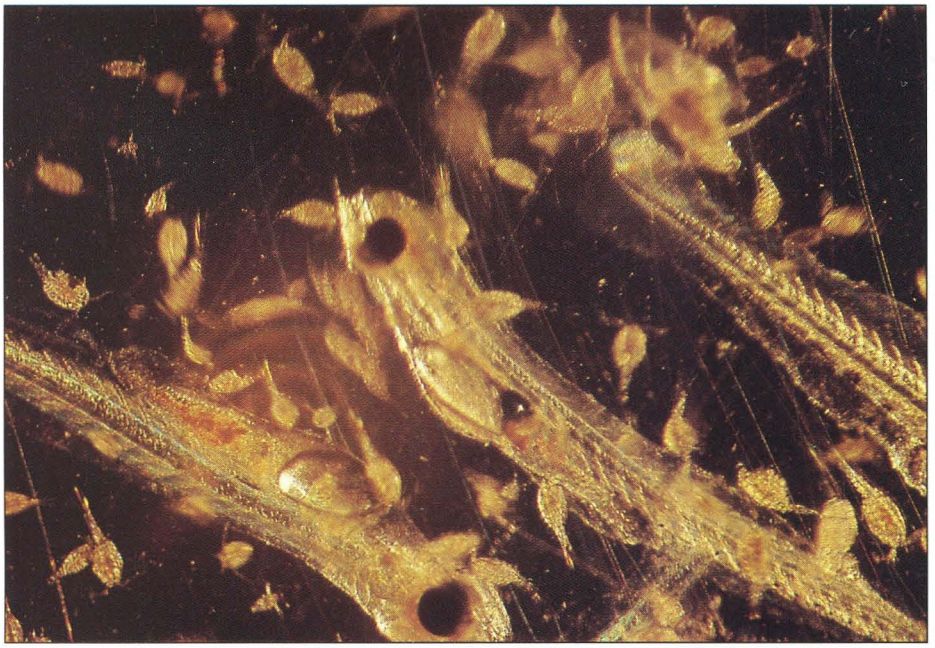
For definite identification, most bacteria must be cultured and serological tests performed. Sensitivity tests tell us which antibiotic is the most effective for a particular bacterial species.

Many different protozoans can infect and cause sickness in fish. Protozoa are animals comprised of a single cell capable of metabolism, reproduction and solitary existence. You might best remember protozoans such as amoeba or paramecium from high school biology class. Protozoa are the most primitive animals on earth and have adapted to every possible ecological existence. The protozoa which cause problems in fish are those which have adjusted to existence in or on other living organisms such as fish. The first observation of protozoa was shortly after the invention of the microscope, approximately 1674 A.D.

Probably the most widely recognized protozoa, especially in the aquarium and fish farming industry is "Ich" or Ichthyophthirius multifilis. Its characteristic white spot disease is common on almost all species of fish. Many people have lost their favorite tropical fish to the parasite. Ich is one of the larger parasites and has an easily seen horseshoe-shaped nucleus. It, along with many other protozoans, can cause fish to "flash," trying to rub the organism off or relive the itch. Other protozoans causing sickness in fish include: trichodina, ambiphyra, trichophrya and many others. Most fish have some protozoans on them at all times. The problem occurs when the fish is stressed and the immune system response can no longer ward off the parasites. When this happens, the protozoans numbers rapidly multiply and breakdown either skin or gill tissue. When gills are attacked, it reduces the ability of the fish to obtain oxygen and excrete metabolic wastes, and the fish becomes sick.

"My fish have worms. Can I still eat them?" is a question fisheries biologists hear frequently. The two most common "worms" found in fish are black spot disease and yellow grub. Both are the result of trematodes (parasitic flatworms) infecting the fish and burrowing into the skin or tissue. Yellow grubs are large, yellow cysts which contain the immature stage of the trematode. Black spot is similar, but the black spot is actually caused by the melanin (pigmentation) deposits secreted by the fish around the tiny grub. The trematode life cycle utilizes fish, snails and birds for hosts. There is no effective means of treating fish with trematodes other than eliminating the pond's snail population, which isn't practical. These parasites rarely cause serious problems in fish populations and are not harmful to humans who eat the fish.

Fish production requires a lot more than "throwing a few fish in the pond and then taking them out three months later." There are many factors to be considered which may not be apparent to the naked eye, so to speak. From food items to tiny animals capable of causing sickness in fish, the fish producer must be able to recognize and deal with the many facets of fish culture. Through the microscope, we see a fascinating world of tiny micro-organisms and how they affect fish. It's all part of our effort to provide Kansas fishermen with a variety of quality fishing opportunities.



If plankton populations aren't monitored, unusual problems can arise. Here cyclops devour tiny wiper fry. If the fry had been stocked, they would have been lost.

Governor's One-Shot Is No Turkey

text and photos by Marc Murrell
public information officer, Valley Center

Governor Finney has carried on former Governor Hayden's tradition of the one-shot turkey hunt. Started in 1987, the hunt now draws enthusiastic participants from all around the world.

Mike Blair photo

Each year, April signals the coming of spring with dogwoods and redbuds blooming. Birds sing and young men's fancy turn to love -- love of turkey hunting that is. Turkey enthusiasts from all over the world will flock to El Dorado for the Governor's One-Shot Turkey Hunt.

The event was started by former Governor Mike Hayden in cooperation with the El Dorado Chamber of Commerce. Hayden grew up hunting and fishing in Kansas and is proud of our natural resources.

"I got the idea from the Governor's Annual One-Shot Antelope Hunt that's held in Lander, Wyo.," Hayden said. "That hunt was started in 1939 and is still going strong."

The first Annual Governor's One-Shot Turkey Hunt was held in 1987.

"We chose Butler County because it had a lot of turkeys and friendly people," Hayden added. "It seemed like the ideal spot."

Goals for the hunt were two-fold. They wanted to promote conservation and also showcase Kansas as a place for business. In order to accomplish these goals, prominent outdoor writers and business leaders from major corporations, as well as celebrities, were invited. A total of 24 shooters participated in the first event.

The number of participants now is limited to 40 shooters. Twenty of these are newcomers to the event and receive accommodations, licenses and tags from the El Dorado Chamber of Commerce. Participants are selected by a group comprised of members from various committees involved in the hunt. Selection is made from a long list generated by past hunters, word-of-

mouth, individual requests and the governor's recommendations.

Twenty, who have participated in the event before, can return to hunt as members of the Past Shooters and Guide Association (PSGA). Lifetime membership in this organization is $100. Return hunters pay their own way.

Money generated through the PSGA provides two $1,000 scholarships to college students pursuing a degree in some form of natural resource management. The PSGA also has provided financial support to the Outdoor Writers of Kansas in their effort to sponsor underprivileged children from the Big Brothers/Big Sisters organization to the Kansas Wildlife Federation's Outdoor Adventure Camp.

Shooters have come from all over the U.S. and five foreign countries. Notable participants include Dr. Red Duke, television personality and past president of the Boone and Crockett Club; Kansas astronaut Joe Engle; B.A.S.S. competitor and well-known television fisherman, Jimmy Houston; Outdoor Life magazine hunting editor Jim Zumbo; outdoor television show host, Bill Saiff III; Bill Koch, skipper and 1992 America's Cup winner; R. Ajva Taulananda, an aircraft industry representative from Thailand; and Rob Keck, vice president of the National Wild Turkey Foundation.

Each celebrity hunter is paired with a guide. Guides have been selected based on several criteria, according to Marv McCown, hunt coordinator and executive vice president of the El Dorado Chamber of Commerce.

The One-Shot has brought much positive publicity to Kansas through magazine articles and television videos. New York T.V. show host Bill Saiff III (right) and guide Robert Landrum pose with Saiff's tom.

"Originally, we contacted people who did a lot of turkey hunting that were good safe sportsmen," McCown said. "Now that people know about it, they're contacting us, wanting to get involved."

The guides meet several times prior to the hunt to discuss expectations and procedures.

"The goal of the event, and especially the guides, is to be hospitable and show the participants a good time. We want these celebrities to remember Kansas in hopes they will do business here someday," stressed McCown. "Getting a turkey is nice but it is secondary and a bonus to the other goals."

The list of guides includes more than 40 names, 25-30 who've been involved from the start. One who has been involved for the last four years is Robert Landrum of Wichita. Landrum, who guided Bill Saiff III to his double-bearded trophy, looks forward to each hunt.

"I enjoy the people I get to meet," Landrum said. " I like being able to call turkeys in and see the expression on some of the people who may not have ever had a chance at a wild turkey. It's a thrill for them."

McCown believes that the event

While emphasis is on hospitality and just enjoying the Kansas outdoors, hunters have been quite successful throughout the hunt's history. Hunters and guides pose with just some of the birds taken last spring midway through the event.

is successful because of similar enthusiasm and support. "When you stop to add up all the volunteers that help, you get to more than 500 people in a hurry."

Product support is provided by The Coleman Company, H.S. Strut, Beretta, Winchester and Oldsmobile. Financial support for the event is also provided by companies like Southwestern Bell and Texaco. Nearly 35 other entities provide additional product and monetary support. McCown also receives support from more than 50 area resident volunteers for the event.

Another group of volunteers that provides critical support, and without who the event would be impossible, are local landowners. The first hunt had 50 landowners in Butler County offering their land as hunting sites. Today, the number of landowners has grown to more than 150 in Butler, Chase, Reno, Sedgwick and Greenwood counties.

Celebrities and guides gather Thursday evening, the day after the opener, to get acquainted and "talk turkey." Breakfast is served at 4:30 a.m. Friday and Saturday mornings. Participants can hunt until 5 p.m. on Friday and until noon on Saturday. The public is invited to attend each day's luncheon at noon in the Community Center. A Big Tom Social is held Friday evening to give sponsors and participants a chance to visit, and the awards banquet and auction is open to the public Saturday evening. The "Big Tom Award" is presented for the biggest turkey taken as well as awards for the top three scoring, three-member teams.

Only two governors have participated in the event, including current Governor Joan Finney. When Gov. Finney was elected, some questioned the future of the hunt named for that office. All questions were quickly answered though, as Gov. Finney eagerly accepted the turkey hunting challenge.

"I think this (the hunt) is one of the most beneficial events for the state in many ways, not only for this area here in the Flint Hills, but it certainly benefits the Kansas economy and is beneficial for the reputation of Kansas throughout the nation," Finney explained.

News of Kansas' growing turkey hunting tradition has spread. In Gov. Finney's travels, she has been approached by the governors in

Mississippi, Florida, New Mexico and Nebraska interested in participating the annual event.

Gov. Finney has been determined to get a turkey since her first hunt in 1991, however, things never quite fell into place during the first two years. She was sure, though, that 1993 would be different. Carrying her special-issue Mossberg 12-gauge and accompanied by two year governor-guiding veteran, Pat Post, the stage was set.

Finney had confidence in her guide and spoke highly of his turkey hunting prowess and knowledge. Post spends a considerable part of each spring scouting for, observing, photographing and hunting wild turkeys and admits that, "If somebody talks about going to the turkey woods, I'm first in line."

The first morning brought several close encounters and a clean miss and Finney returned to the luncheon a bit discouraged, but she didn't give up. "I'm a very determined person. I decided I'd stay with it until I did get one."

She didn't have to stay with it much longer. After lunch, and picking up a little extra baggage (this writer), Finney and Post traveled to Chase County with high hopes. Not wanting to be a burden to either, I assured them that I was nothing more than a giant rabbit's foot for good luck.

We made several stops at likely looking spots, and Post tried to trick a tom into gobbling by sounding an owl hoot or a series of yelps. Finally, a gobbler thundered from the timber.

Governor Finney had a run of bad luck in two previous hunts, but she got her bird last spring. Guide Pat Post and the Governor proudly show her 1993 tom above.

Governor Finney and Post took a position along the edge of a wheat field bordering a pristine Flint Hills stream. Hoping the responding tom was love-sick, Post set out a decoy and began to call. With each series of yelps and soft purrs, immediate response gobbles came from not one but two toms. The two birds moved down the edge of the field at a steady pace, then followed an old, two-rut lane that paralleled the creek. Each bird was in full strut, drumming and spitting as they slowly closed the final yards to shotgun range.

The lead bird came into range, but flew across the creek before Finney could shoot. The second, not so quick to give up the chase for the sweet-talking hen, was still strutting and drumming as it came to the Governor's view. Post whispered some reassuring advice as the bird approached.

The woods echoed with the blast and the bird folded.

"I could hear myself breathing harder and faster, and I was getting very excited . . . Pat was whispering to just relax, wait and take my time," Governor Finney proudly related. "He said to wait for the second one . . . OK . . . now you've got him. Now just squeeze that trigger."

Relieved with her long-awaited success, the Governor couldn't have been more excited about her first turkey. "The good people of Kansas, many of them were stopping me on the street and wishing me luck and saying 'I hope you get your turkey' and all those good wishes certainly paid off," she said beaming.

"It's one of the most thrilling experiences I've ever had. I think turkey hunting is more fun than about anything that I've ever done in my life. Now that I'm a seasoned turkey hunter, I have to keep this up, so, I'll be back here next year with a lot more confidence and hopefully get an even bigger bird!"

Good luck, Governor!

Build Islands and they will come

by Helen Hands, *wildlife biologist*
and Karl Grover, *area manager, Cheyenne Bottoms*

photos by Mike Blair

Islands have been constructed in the old goose pen at Cheyenne Bottoms in an attempt to provide least terns a good place to nest. Through the project, biologists have learned much about shorebird nesting preferences.

Driving through Cheyenne Bottoms Wildlife Area, you'll probably notice quite a few structural changes like the new dike in Pool 1 and the flood control structures that are part of the long-term renovation effort for Cheyenne Bottoms. There has also been some construction that is not as visible. In the fall of 1990, we completed construction of 10 islands in the northwest part of Pool 5, which used to be the former goose pen.

The islands were built to improve nesting habitat for least terns and shorebirds, a special management effort needed for two reasons. First, least terns are listed as an endangered species by the U.S. Fish and Wildlife Service. They were known to nest at the Bottoms as recently as 1978. Since then, no least tern nests have been found and few individuals have been sighted. A second reason for the project is that snowy plovers, which nest in habitat similar to least terns, have been designated as threatened in Kansas, and nesting populations at the Bottoms have declined during the past several years.

When first confronted with these declines, we looked for a cause. We surveyed the alkali flats where least terns and snowy plovers traditionally nested and found that saltgrass was encroaching. Thus, one probable cause of decreases in nesting populations of snowy plovers and least terns at the Bottoms was that their nesting habitat was shrinking. Since these species nest on the ground with little or no vegetation around their nests, nest predation has always been high. We presumed that nest predation had increased because these birds were being forced to nest in smaller and smaller areas. As a result, predators, primarily coyotes, could find their nests easier. In addition, these ground nesting species are subject to periodic flooding. Therefore, we concluded that to re-establish a nesting population of least terns and increase nesting by snowy plovers, we needed to; 1) increase the availability of nesting habitat, 2) decrease nest predation, and 3) reduce flooding potential at nesting areas. We considered two alternatives to address these problems: 1) scraping vegetation off the alkali flats and 2) building islands that would have suitable nesting habitat. We decided to build the islands because only that alternative would address all three criteria for increasing nesting populations of least terns and snowy plovers at Cheyenne Bottoms. The project's chances for success should be good because least terns and snowy plovers currently nest at Quivira National Wildlife Refuge, about 25 miles southeast of the Bottoms.

The nesting islands, pictured under construction at top, were built in Pool 5, an area that used to be the goose pen. Dikes allow water control separate from other pools.

The old goose pen in Pool 5 was chosen as the location for the nesting islands because least terns and snowy plovers traditionally nested on alkali flats there and because it is separated from the rest of Pool 5 by a dike. The existing dike would allow water to be managed in the goose pen independently of Pool 5. Modification of the 96-acre goose pen consisted of dividing the area into four pools with low dikes, installing a new gate to reconnect the inlet canal to the nesting area, providing a more reliable water source, excavating an inlet canal to deliver water independently to each of the four new pools, and building 10 islands. Water levels in the four pools in the new nesting area are controlled with stop-log structures.

The islands are 1-3 acres in size and are surrounded by a moat. Nine of the 10 islands are topped with sand and egg rock from the Arkansas River. The other island was left to become vegetated with grass and other plants to provide nesting habitat for ducks and geese like the 11 existing islands in the goose pen.

The entire project cost $52,000. The U.S. Fish and Wildlife Service's Section 6 (for threatened and endangered species) and Nongame funds each contributed $15,000. Another $15,000 came from Kansas Wildlife and Parks' Chickadee Checkoff program. Kansas Wildlife

and Parks provided the rest of the money, materials, labor and equipment time to complete the project.

To evaluate the effectiveness of these islands, we initiated a study to determine nesting density, nest-site characteristics, and nest success of these species. This study began in spring 1991, the first nesting season the islands were available.

Every week or two, we searched for least tern and shorebird nests on the nine islands by walking slowly around each island in concentric circles approximately 6 feet apart. Searchers must be careful because the eggs blend so well with the sand and gravel substrate. When a nest is found, we record the bird species; number of eggs; distance to nearest plant; vegetation density, height, and species within one yard of the nest; direction and shortest distance to water; and mark the nest location. We also float the eggs to determine the stage of incubation so we can estimate when the eggs will hatch. We revisit each nest on subsequent nest searches to monitor the fate of the nest. After the nesting season, we measure nest height above the water and egg rock density at each nest.

We found 57 shorebird nests in 1991, 45 in 1992, and 39 in 1993. So far, no least tern nests have been found, although we did observe two least terns on one of the islands in July 1992. We found four snowy plover nests in 1991 and one in 1993. Avocets and killdeer comprised the rest of the nests we found on the islands in 1991, 1992 and 1993. Fewer nests were located in 1992 than in 1991, probably because the area was dry until mid-June and many individuals had left Cheyenne Bottoms to nest at sites with water. High water levels throughout Cheyenne Bottoms last spring may have made the area unattractive to shorebirds.

Shorebird nests typically were at sites with less than 25 percent of the ground covered with plants. The ground around nests was predominately covered with sand with a few (3 to 7) stones less than half an inch in diameter. Nests were usually 20 to 50 feet from water and 2-4 feet above the water line.

Shorebirds did not use the nine islands equally. We examined a number of factors that might have affected the number of nests on islands such as vegetation density, egg rock density, island size and distance to nearest road. In 1991, the only factor that seemed to be related to number of nests was distance to nearest road. Islands with the most nests tended to be farther from the road. In 1992, number of nests was not correlated with distance to nearest road, but it was with vegetation density on the islands. Islands with the least vegetation had the most nests.

Least tern and shorebird nests, like this avocet nest above, are found on unvegetated gravel or alkali flats. Encroaching vegetation has eliminated much nesting habitat.

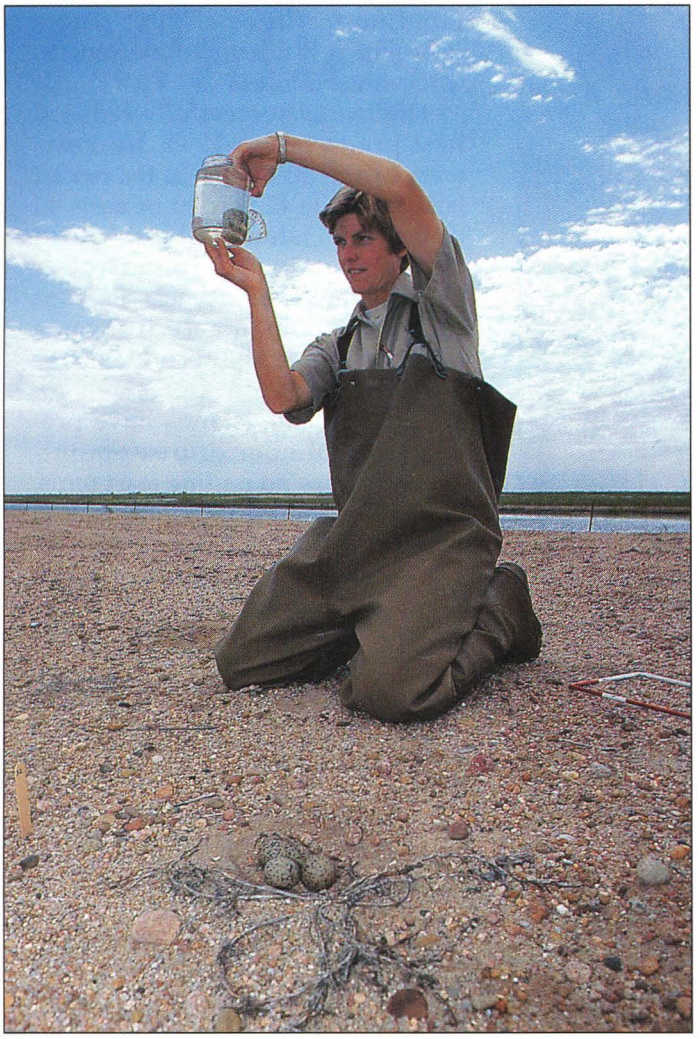
After shorebirds and least terns select a nest site, they make a simple scrape in preparation to laying eggs. Killdeer and snowy plovers just arrange a few small stones and avocets collect a few small twigs or pieces of vegetation. Typical clutch sizes are two to three for least terns and snowy plovers, four for killdeer, and three to four for avocets. Incubation begins after the last egg is laid. Least terns incubate their eggs for 20 to 22 days and shorebirds incubate theirs for 24 to 25 days. Least tern and shorebird chicks are able to leave the nest soon after hatching.

Getting least terns and shorebirds to nest on the islands was just the first objective. We also wanted their nests to be successful. Nest success is defined as the percent of nests in which at least 1 egg hatched. Nest success was 12 percent in 1991 and 13 percent in 1992, which is a lot lower than we expected. In 1992, we were able to positively determine that nest predation was significant because a coyote got onto the 2 most used islands and destroyed all of the active nests. A coyote swam 60 yards through 30 to 34 inches of water to reach these islands.

After studying shorebird nesting on these islands for two years, we have come up with some modifications to increase shorebird nesting and improve the chances of getting least terns to nest on them.

Vegetation was a major problem on the nesting islands in 1991. We believe that the tall dense clumps of vegetation prevented us from seeing any chicks except recently hatched ones at the nest site. In addition, we believe that the vegetation may have discouraged least terns from nesting at the Bottoms and reduced the number of snowy plovers, killdeer, and avocets nesting on the islands.

We tried unsuccessfully to control vegetation on the islands in



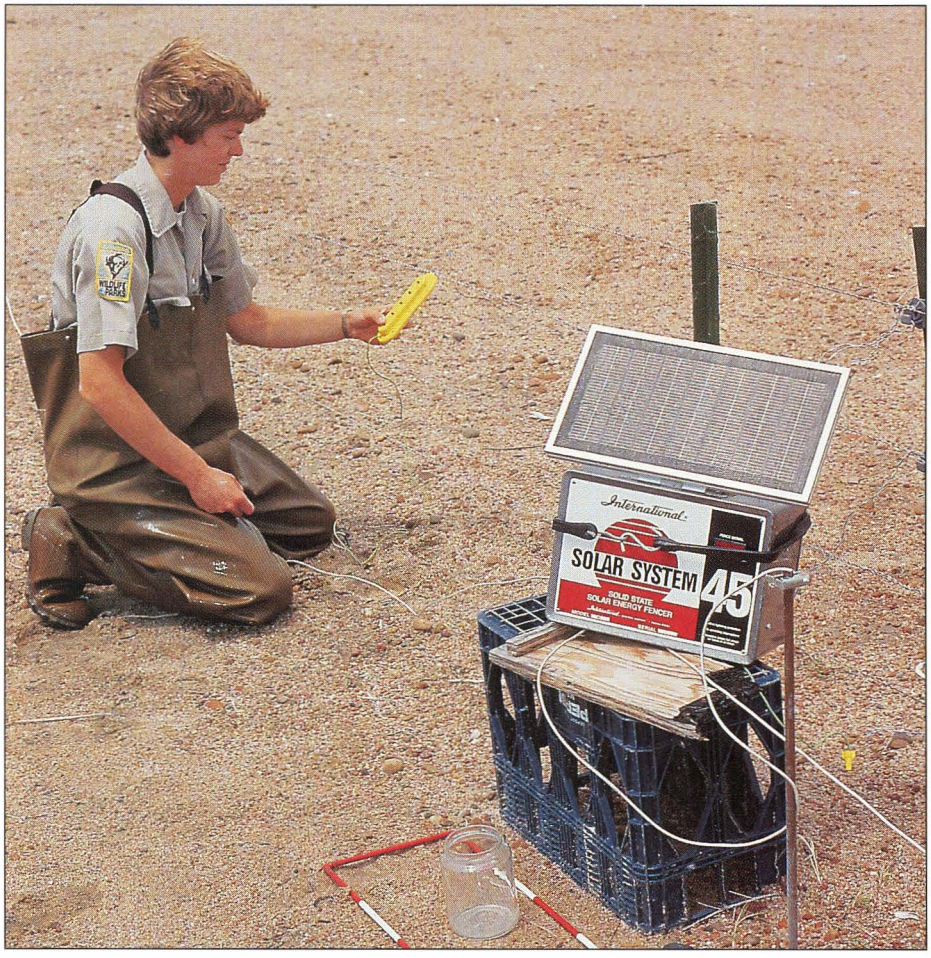
Area wildlife biologist Helen Hands searched the islands for nests to gather information such as species, distance from water and amount of vegetation. Above she floats an egg to determine stage of incubation, so that the nest could be revisited after the eggs hatched, and nesting success could be estimated. The most common nesting shorebird was the American avocet, pictured at right.

1991 by spraying with Roundup from a tractor-mounted sprayer prior to the nesting season. Unfortunately, Roundup only killed the plants that had already germinated and many new plants, primarily kochia, or firebush, emerged during the nesting season. We couldn't re-spray Roundup during the nesting season because we would destroy too many nests. As a result, some kochia reached a height of three feet during the nesting season.

After the nesting season ended in August 1991, the islands were mowed with a sickle mower. In September, the islands were again sprayed with Roundup. The dead stubble was disked up and the ruts from the tractor were smoothed out with a road compactor. These measures can only remove the existing vegetation. So, we needed to find a way to prevent vegetation from growing on the islands. The best idea we have come up with so far is to treat the islands with a pre-emergent herbicide. This prevents seeds from germinating. We do not like to use chemicals to control vegetation at the Bottoms, but we have a dilemma. If we let vegetation overtake the islands, shorebirds will not use them, and we'll never have least terns nesting at the Bottoms.

We have decided to use a pre-emergent herbicide, and monitor the islands closely. If the herbicide adversely affects wildlife including bugs, fish, or birds, we will see it. In March 1992, we sprayed the islands with a mixture of two pre-emergent herbicides, Karmex and Solicam, which control vegetation for about five months. These chemicals were approved for use on these islands by the U.S. Fish and Wildlife Service, the Kansas Board of Agriculture, and the Department of Wildlife and Parks.

Because the pre-emergent herbicides are expensive and because we wanted to ensure the chemicals are doing what we want them to do, we measured the effectiveness of these herbicides. To do this, we surveyed vegetation on the islands in April, before nesting began, and in September, after nesting ended. Surveys were done by counting live plant stems in square-meter (1.1 square feet) rectangular frames,



Predation was devastating to nests in 1992, so, an electric fence was erected on the two most heavily used islands to provide at least one safe sanctuary.

called quadrats. We counted plant stems in 12 to 20 quadrats spaced 30 feet apart on the eight sprayed islands and on the one unsprayed island.

The herbicides worked very well in 1992. Because so many of the quadrats lacked vegetation, we analyzed the vegetation survey data in terms of the percent of quadrats lacking vegetation. In April, vegetation density along sprayed and unsprayed transects was similar with about 70 percent to 90 percent of the quadrats lacking vegetation. Although there was some vegetation growth on the sprayed islands during the nesting season, much more vegetation grew on the unsprayed island. Further evidence of the effectiveness of the pre-emergent herbicides was the change in vegetation at nest sites from 1991 to 1992. In 1991, when we did not use the pre-emergent herbicides, shorebird nests were usually about three inches from the nearest plant and 90 percent of nests had up to 25 percent of the ground within one yard of the nest covered with vegetation. In 1992, most nests were over 40 inches from the nearest plant and 78 percent of nests did not have any vegetation within a yard of the scrape. Vegetation was successfully controlled with pre-emergent herbicides again in 1993. Chickadee Checkoff contributed $450 toward this effort.

Another way to improve the islands' value to least terns and shorebirds is to erect electric fences around them to reduce nest predation. Normally, we would not use electric fences to protect nests of common shorebirds like killdeer and avocets. However, to make the islands as secure as possible for endangered least terns, we fenced the two most used islands in 1993. Funding for these electric fences came from Wildtrust donations to Cheyenne Bottoms.

The fences successfully reduced nest predation in 1993. No nests were lost to predators on the fenced islands, while 42 percent of nests on unfenced islands were lost. Unfortunately, we found fewer nests on the fenced islands. Perhaps increased human activity was a factor. In 1994, I will spend less time on these islands.

Although the islands have presented a number of disappointments such as no nesting least terns, vegetation control requiring annual spraying of herbicide, and coyotes that swim to the islands, we believe they are a success.

Before the islands were built, the goose pen was usually dry because water could only enter by precipitation or over the dikes. Now water can be put in the area from the inlet canal and depths can be controlled in the four individual pools with the stop-log structures. As a result, waterbird use of the area has increased dramatically. We've seen numerous ducks, geese, herons, egrets, white-faced ibis and many other waterbirds in the nest area. Shorebirds also forage along the shoreline of the islands and along the dikes. We found two duck nests on the islands in 1992 and 14 in 1993. We saw at least three different duck broods in 1991 and one brood in 1992, two very poor nesting years at the Bottoms. So far we believe renovating the old goose pen has been a worthwhile project and it will be even more so when least terns start nesting on the islands.

As wetlands continue to disappear throughout North America, the remaining sites become more valuable. Many shorebirds migrate several thousand miles each year and visit such far away locations as South America and Siberia. The actions we take at Cheyenne Bottoms to maintain at least some nesting and migrational habitat will help ensure that future generations will have the opportunity to enjoy this amazing wildlife resource.

Walleye For The Future

by Randy Schultz
district fisheries biologist, Valley Center

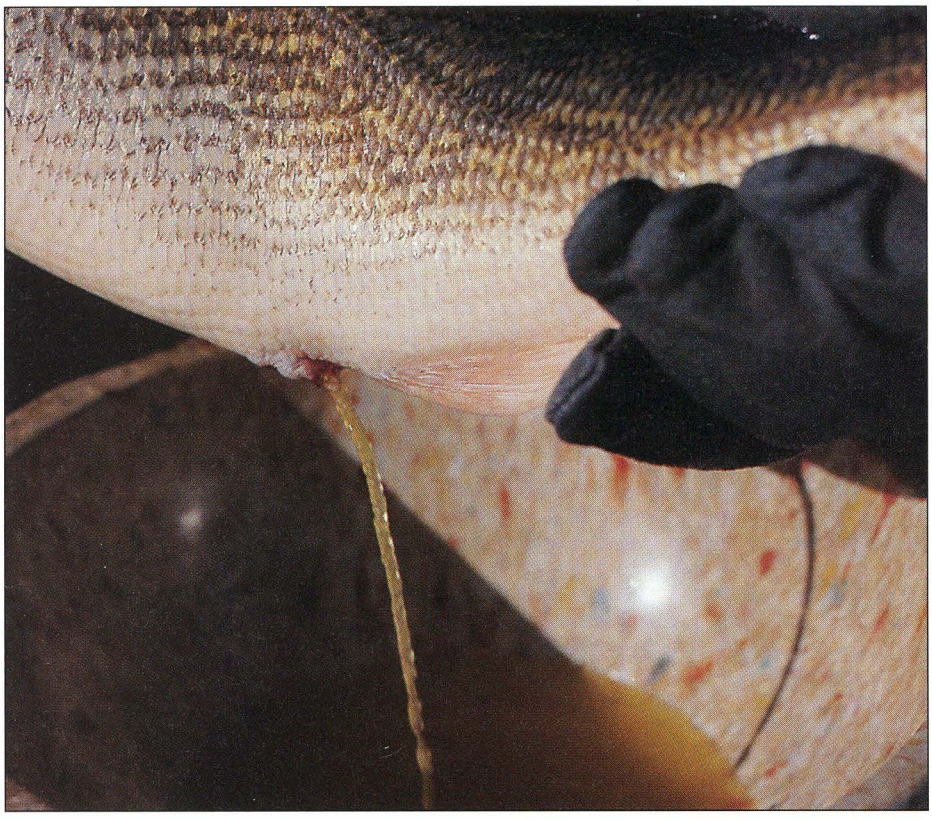
photos by Mike Blair

Each spring, biologists work diligently, braving cold, wind and waves to harvest a valuable crop. Their take of millions of walleye eggs ensures the future of this popular sportfish in reservoirs across the state.

If you've ever seen walleye stocked into your favorite lake, you might have wondered where those fish came from. While the walleye has quickly become one of Kansas anglers' favorites, the species hasn't gained its widespread popularity on its own. There's a good chance the last walleye you caught wasn't the result of natural reproduction.

Although fisheries biologists around the state try to satisfy a growing public demand for walleye, the species is not native to, nor suitable for all bodies of water. In lakes and reservoirs where walleye survive but don't reproduce because of lack of spawning habitat, the fishery is sustained through stocking programs. To meet the demands of walleye requests, the department trades with other states for walleye eggs, fry and fingerlings and produces a large number of fish in our hatcheries.

The whole process begins in March, when warming water temperatures initiate the walleye spawn, and biologists begin setting trap nets in preselected reservoirs — reservoirs chosen because of their quality walleye population. The nets are set along traditional spawning areas in late afternoon and checked the following morning,



The shore crew milks eggs from ripe females. A large fish might provide up to 300,000 eggs! Target reservoirs are those with quality walleye populations.

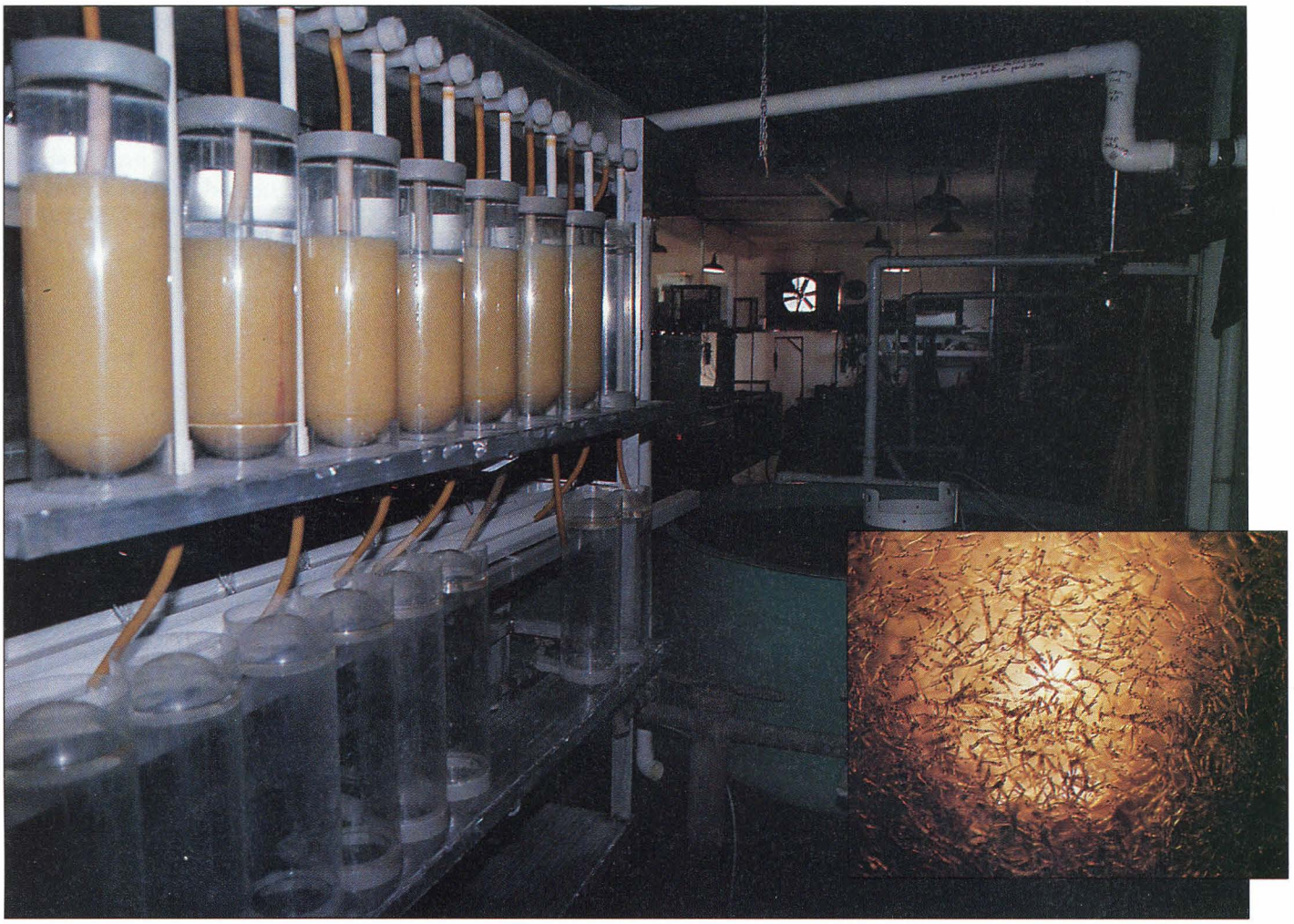
Milt (or sperm) is added to the eggs and stirred gently with a feather to ensure efficient fertilization. A clay mixture is added to prevent clumping of the eggs.

since most of the spawning activity takes place at night. The nets don't harm the fish, and walleye easily make up the majority of the catch because other species aren't as active in the cool, early spring water.

Working from 18-foot jon boats, crews of biologists pull the nets each morning. The cylindrical-shaped nets are wrestled on board, and the catch is examined. Walleye are separated by sex and placed in on-board holding tanks. Telling the sex is easy this time of year as milt flows from the males and eggs flow from the females when their abdomens are stroked. The females are generally larger since they don't become sexually mature until 4 years while the males will spawn at age 2 or 3. The fish are also examined to determine whether they're green (not yet ready to spawn), ripe (ready) or spent. Green and spent fish are released to the lake, ripe fish are held in the tanks.

Once the fish are sorted, nets are put back out and the fish hauled to shore. There, a waiting crew milks the fish of eggs and milt. A female walleye will produce approximately 26,000 eggs per pound of body weight -- a large fish may produce 300,000 eggs. By volume, a quart contains roughly 120,000 eggs. With eggs and milt in a small bowl, fertilization is aided by delicately stirring with a feather. The fertilized eggs are then mixed with a solution of clay and water to prevent them from sticking together in clumps. When spawned naturally, the eggs' adhesiveness attaches them to the rocky lake bottom, while waves continually circulate water over them. In a container, many eggs would suffocate if clumps were allowed to form. After the eggs are mixed with the clay solution, they are placed in a screened container in the reservoir to wash away excess clay.

When the morning's fish have been stripped and released, the eggs are transported to the department's Pratt or Milford hatcheries. There the eggs are placed in hatching jars where continually cir-



At the Milford and Pratt hatcheries, eggs are kept in jars with circulating water. As fry hatch (7-10 days) they are siphoned off the top and transferred to holding tanks. Within four days their mouth parts are fully formed, and they can then be stocked back into lakes.

culating water keeps the eggs oxygenated and alive. Dead eggs are siphoned off. Depending on the water temperature, the eggs will hatch in seven to 10 days. In the hatchery, 60 percent to 70 percent of the eggs will hatch -- much better than naturally spawned eggs. The fry swim to the top of the jars and are siphoned into holding tanks. Mouth parts become well developed in about four days, and the fry can feed on their own. Many of the fry are then stocked into reservoirs. To accommodate biologists' requests for fingerling-sized walleye (2-3 inches) some fry will be kept and grown in hatchery rearing ponds for two months.

In 1993, nearly 17 million walleye eggs were collected, mainly from Lovewell and El Dorado reservoirs. Approximately 10 million walleye fry and fingerlings were stocked into Kansas lakes from these eggs. In addition, nearly 21 million walleye eggs and 400,000 fingerlings were received in trades with other states. Any walleye in excess of stocking requests were retraded to Virginia for striped bass and wipers (striped bass/white bass hybrids) and to Texas and Oklahoma for wipers.

Additionally, almost 340,000 sauger eggs were collected from Melvern Reservoir and fertilized with walleye milt to create the saugeye hybrid. Added to the saugeye fry and fingerlings received in trades, the saugeye stocking totaled 700,000. A small number of sauger fry were raised and stocked back into Melvern to maintain that population, which is the state's main source of sauger brood fish. The hybrid saugeye is exciting to many biologists because it may fill a niche in reservoirs too murky and flood-prone for walleye. The saugeye will grow fast and be less susceptible to flushing during high water.

One of the finest eating fish and a challenge to catch consistently, the walleye's popularity is growing. The walleye program continues to bolster sustaining populations and maintain walleye fisheries in older reservoirs that don't provide adequate habitat for a sustainable population. Who knows? The next walleye you catch may be better traveled than you think. It could have started its life in a lake half way across the state or half way across the nation.

Do Solunar Tables Work?

text and photos by Mike Blair
staff photographer, Pratt

Much is written about the effects of the moon phase on fishing success, but can it really help you catch more fish? Follow the author's journal and interpretations of fishing by the moon.

The July sun breathed fire out of a blue sky, sending midday temperatures above 100 degrees. With words carefully chosen, I conned my two daughters into helping fish for channel cats, to determine the validity of a Solunar forecast for excellent afternoon catfishing.

Aside from heat, fishing conditions were ideal. The moon was full, meaning it was directly "underfoot" at 2 p.m. The barometer was steady at 30.01 inches of mercury. Winds were calm. Everything was just right — except for the exposed, treeless banks of the Barber County pond and a swimming pool full of friends back in town. I admit I was skeptical about catfishing during the hottest and brightest part of the day. The girls were even more so.

To be scientific, we set out lines 2 1/2 hours before the major Solunar peak was scheduled. The pond was known for good catfishing, and if we caught fish immediately, we could then logically assume that feeding was random and uninfluenced by the projected peak. But our four lines, baited with stinkbait and nightcrawlers, sat dormant as minute after sweltering minute ticked by.

A boring hour passed, and the girls were done with scientific

experiments. Complaining of the heat and dreaming of high dives into clear, turtle-free water, mutiny was barely averted by the discovery of a bluegill bed. The stunted, late-spawning fish provided action every cast as they guarded their nests in the shallow water. A competition blossomed: for nearly an hour, the girls cast flies at the largest fish, temporarily forgetting the heat.

But even that grew old. This time, when they disassembled their tackle, they were ready to go. Looking across the pond at the static lines, I agreed. It was now just 10 minutes before the catfish peak, but the slouching lines — dead for two hours — held no promise.

As we rounded the pond to pick up our gear, a rod tip twitched. Momentarily, the line began to pull away, and promptly a 4-pound channel cat churned the water as it fought against the hook. Before it was landed, a second line sparked to life. For the next hour, I could hardly bait lines fast enough to satisfy the feeding catfish.

That episode, along with others experienced during several years of fishing by Solunar tables, yielded convincing evidence that the sun and moon do, at times, affect fishing success. The forecasts aren't foolproof; sometimes paper promises yielded disappointing results. But for the most part, Solunar data proved useful for pond, creek and reservoir fishing.

Solunar tables aren't new, originally appearing in the 1930s. Perhaps the most familiar usage is in the Farmer's Almanac, where they advise the year's best times to plant, weed or de-horn livestock, among others. For fishing applications though, they are published in many sportsmen's magazines and newspaper outdoor sections. One company even produces a wristwatch with Solunar data, programmable to specific latitudes and longitudes.

Solunar tables are based on relative positions of the moon and sun, and their gravitations' influence on the earth and its water. Major feeding periods of fish and wildlife are expected twice each day; once when the moon is directly overhead and again when it is on the back side of the earth, or directly underfoot. Scaled fish, such as bass, walleye and crappie, are said to bite best when the moon is overhead. Catfish supposedly bite best when the moon is on the back side of the earth, where it "pulls" on the bottom of a lake or stream to stir these bottom-dwellers to action.

Both daily major peaks are considered to last about two hours each. Additionally, a pair of one-hour, minor peaks are said to take place when the moon is on either horizon.

Besides major and minor peaks that occur every day, moon phase also affects the formula. Full and new moons are widely believed to yield the best fishing, in four-day windows surrounding both phases. Half-moons are thought to trigger increased success for shorter periods. The times between these designated phases supposedly have little effect on fishing.

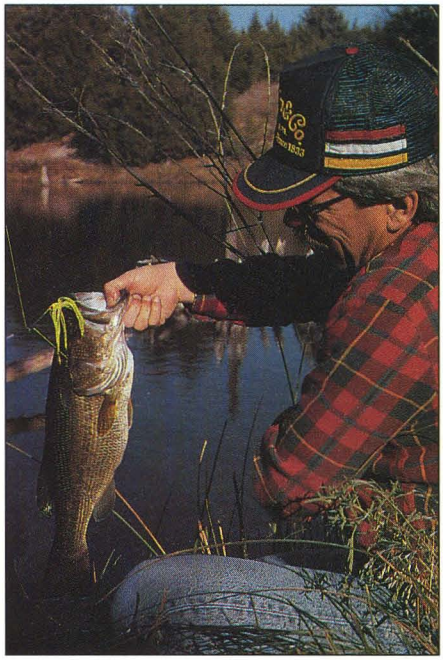
The author's daughter strains to hold up a nice stringer caught on a sweltering summer day during the predicted peak feeding period according to the Solunar tables.

Therefore, a Solunar fishing forecast can range from poor to excellent, depending on moon phase and the timing of daily peaks. Time of the month and time of day are both important.

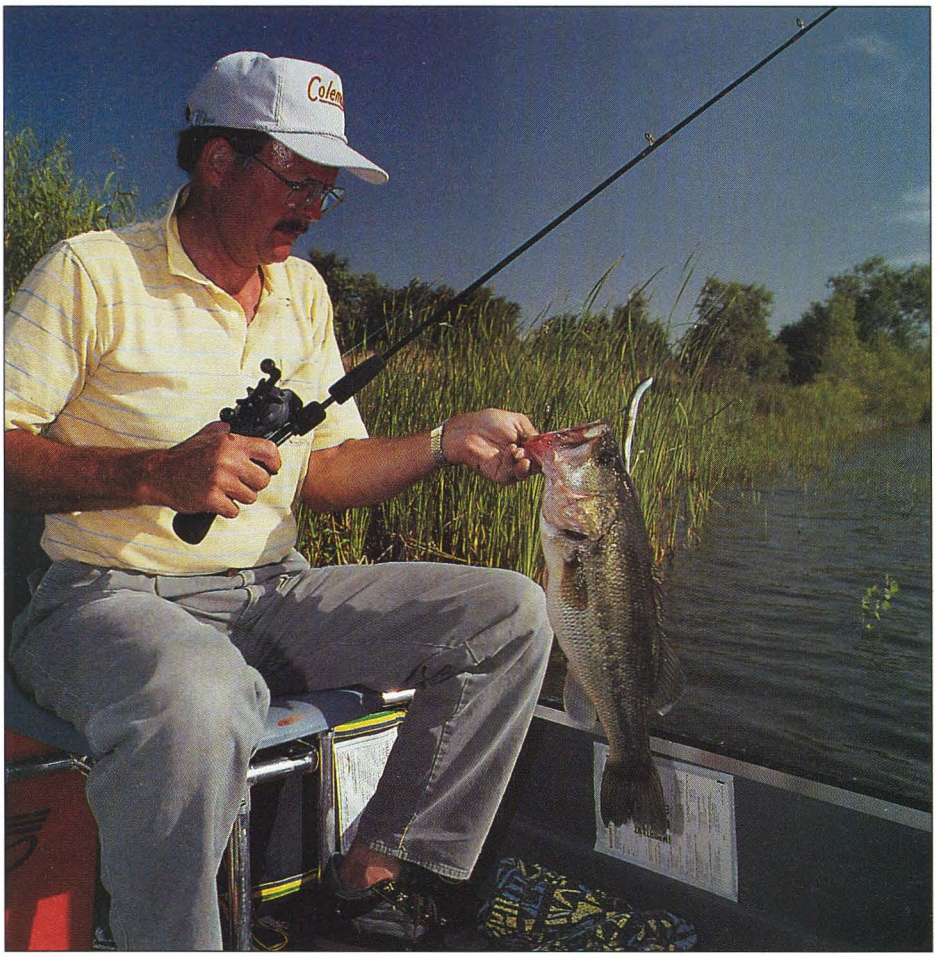
Debate over the accuracy of Solunar tables has long continued. Few scientific studies exist, but recent Texas research seems to add validity to Solunar impact on fishing for lunker bass. During the five-year period from 1987-1991, largemouths bigger than 13 pounds

were saved alive by Texas anglers for use in the Texas Department of Parks and Wildlife hatchery production. Catch times were recorded for each fish and plotted against the major Solunar feeding periods to determine correlation. Eighty-seven bass were included in the study. A chi-square statistical analysis determined that in a completely random feeding pattern, only 17 lunkers should have been taken during hours designated as major Solunar peaks. However, the actual number was 26 — not a tremendous numerical difference but, nonetheless, an important statistical one. These data suggest that fishermen should take Solunar peaks seriously.

As with the catfish mentioned earlier, Solunar predictions sometimes have uncanny accuracy for scaled fish. This was evident in a fishing trip I took last spring, when an entire day was spent fly fishing from a float tube on a community lake.



Scaled fish such as largemouth bass react differently to Solunar tabels.



Records from other states indicate that more lunker bass are caught around major Solunar periods. Many large bass are caught on either side of a new moon.

It was during the new moon, and the fishing forecast was excellent. However, weather conditions were less than ideal. A front had passed through the day before, and though skies were clearing, temperatures were below normal. The major overhead peak was scheduled to begin at 12:50 p.m. I put in the water at sunrise, measured the water temperature at 70 degrees and began to fish in flooded timber. In five hours, I caught only four fish — three small bass and a bluegill.

But as the Solunar peak arrived, minnows began to skip across the water surface and fish began to feed. During the next 1 1/2 hours, I caught more than 50 large bluegills and redears, my primary targets, using the same flies in the same water that had been unproductive all morning. After that, fishing slowed back down and was poor until sundown.

Again, the Solunar peak had proven dramatically correct. And in less impressive ways, it did so again and again in reservoirs and ponds. Good trips for bass, crappie and sunfish often correlated with the major overhead peaks, and catfish were strung at all hours of the day when backside peaks occurred. In one case, a 10-pound channel cat was taken on a spinner bait during the major backside peak, and it wasn't unusual to catch channels on fly tackle when they were actively feeding during these periods. All provided evidence that Solunar tables work.

But there were other times when solunar forecasts seemed worthless. To be objective, I fished many days during favorable moon phases and between peak periods, when fishing was rated "poor." Some of these poor predictions were accurate, yielding few or no fish even in decent weather. But during other such predictions, I experienced good fishing. One such day occurred mid-afternoon on a pond

in late June. A thick cloud layer broke up, sending temperatures into the low 90s. The humidity was high, and strong south winds rippled the water surface. It was hours before the overhead peak, and the outlook was bad.

After trying an assortment of lures with no luck, I cast a floating Rapala into the choppy water. During the next 30 minutes, I caught four bass weighing from 3-5 pounds. Unfortunately, I had to leave then, but not before experiencing excellent fishing in spite of the poor forecast.

Conversely, I was skunked several times fishing the best Solunar peaks in good waters where I usually caught fish. One evening in particular, the weather was perfect, the rating was "good," and I fished a lake that consistently yields baskets full of bluegills at sundown. But on this particular night, I fished 90 minutes, catching only five small fish. The calm water, normally alive with activity at dusk, remained lifeless. There was no apparent reason.

The author concluded that lunar movements probably do affect fish, but many other forces are also at work. Fish whenever you can get away, and fish or no fish, have fun!

Similarly, Mike Miller, editor of this magazine and serious Kansas reservoir fisherman, joined several companions for crappie fishing at Cheney last summer on a day rated by Solunar tables as excellent for scaled fish fishing. Though they fished all day under favorable weather, they caught only six crappie.

Why the variation in forecast success? Many anglers believe that Solunar influences are secondary to weather conditions. Factors such as passing fronts, temperature, barometric pressure and humidity — all known to affect fish activity of themselves — confuse the Solunar issue. Without question, these factors can affect fishing forecasts.

In spite of this, Solunar believers include an impressive list of fishing guides and tournament anglers who spend most of each year in search of large fish. One such angler is Doug Hannon, well-known Florida big-bass guide and fisherman. Hannon, who claims to have charted thousands of big bass catches against Solunar tables, notes that more than 90 percent of his 10-pound-plus bass were taken within three days either side of a full or new moon. According to his calculations, an angler's chances of catching big bass are 500 percent better during a major Solunar feeding period than during non-peak hours, and 300 percent better during minor peaks.

Personally, after carefully charting two year's worth of Kansas fishing experiences, I concluded that Solunar forecasts are generally accurate, especially for catfish. But enough discrepancies exist to keep the mystery of fishing intact. I try to time my trips to include the peak hours of the day, but I don't miss any opportunities based solely on a poor Solunar forecast. And many times, this has paid off in fish.

There is more to fishing than coldly comparing pounds of fish caught with hours of time trying. Hours on the water provide a relaxing getaway, and regardless of conditions, there is always the chance of hooking a big one.

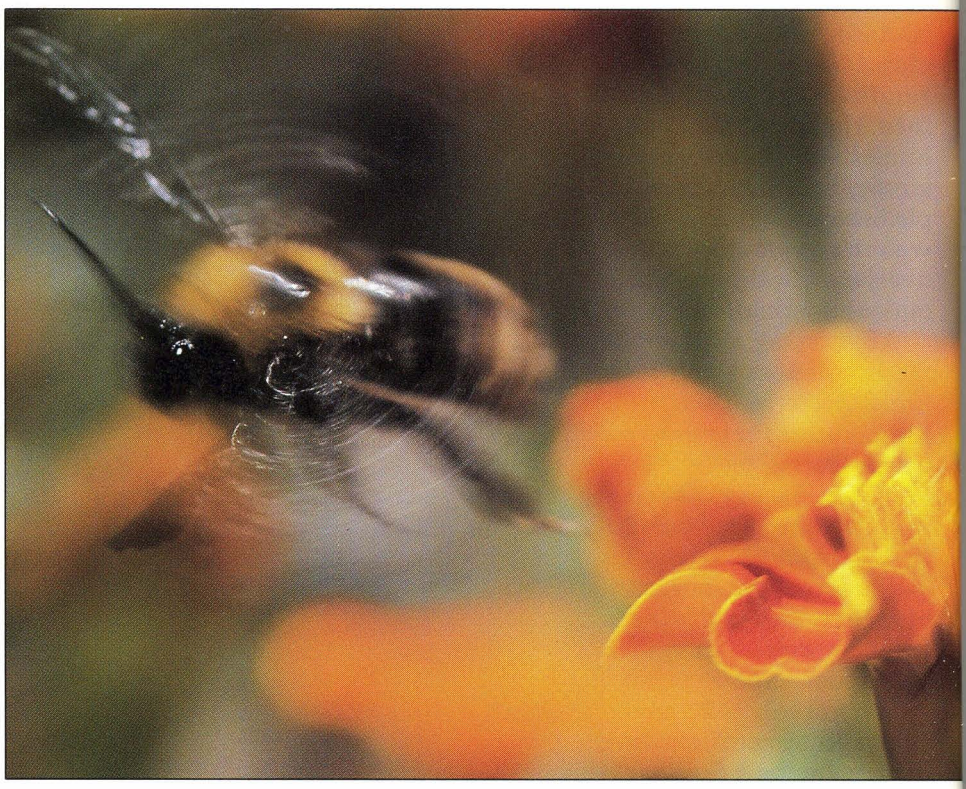
That's why I like the philosophy of tournament angler Jimmy Houston's grandpa. According to him, the two best times to fish are, "when it's rainin', and when it ain't."

That's when to go; any time you can. But keep an eye on the Solunar tables, and you may up your chances for a wall-hanger or a stringer full of tasty fillets.

Gallery

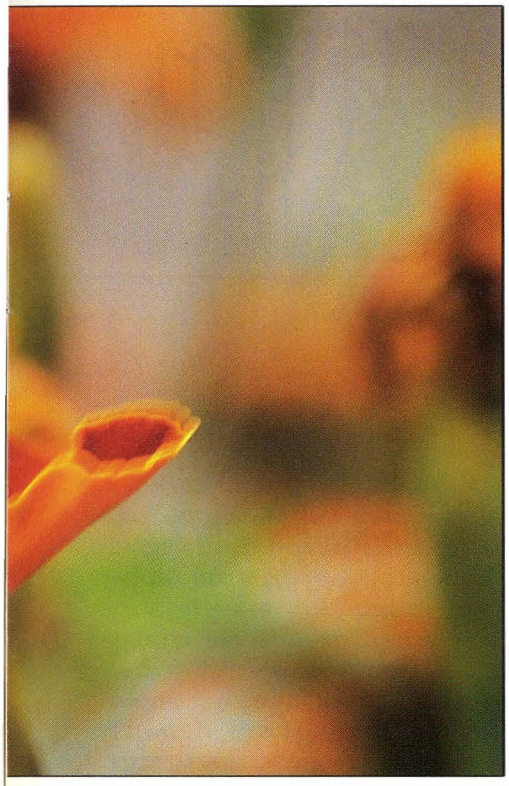
by Mike Blair

Moving Stills



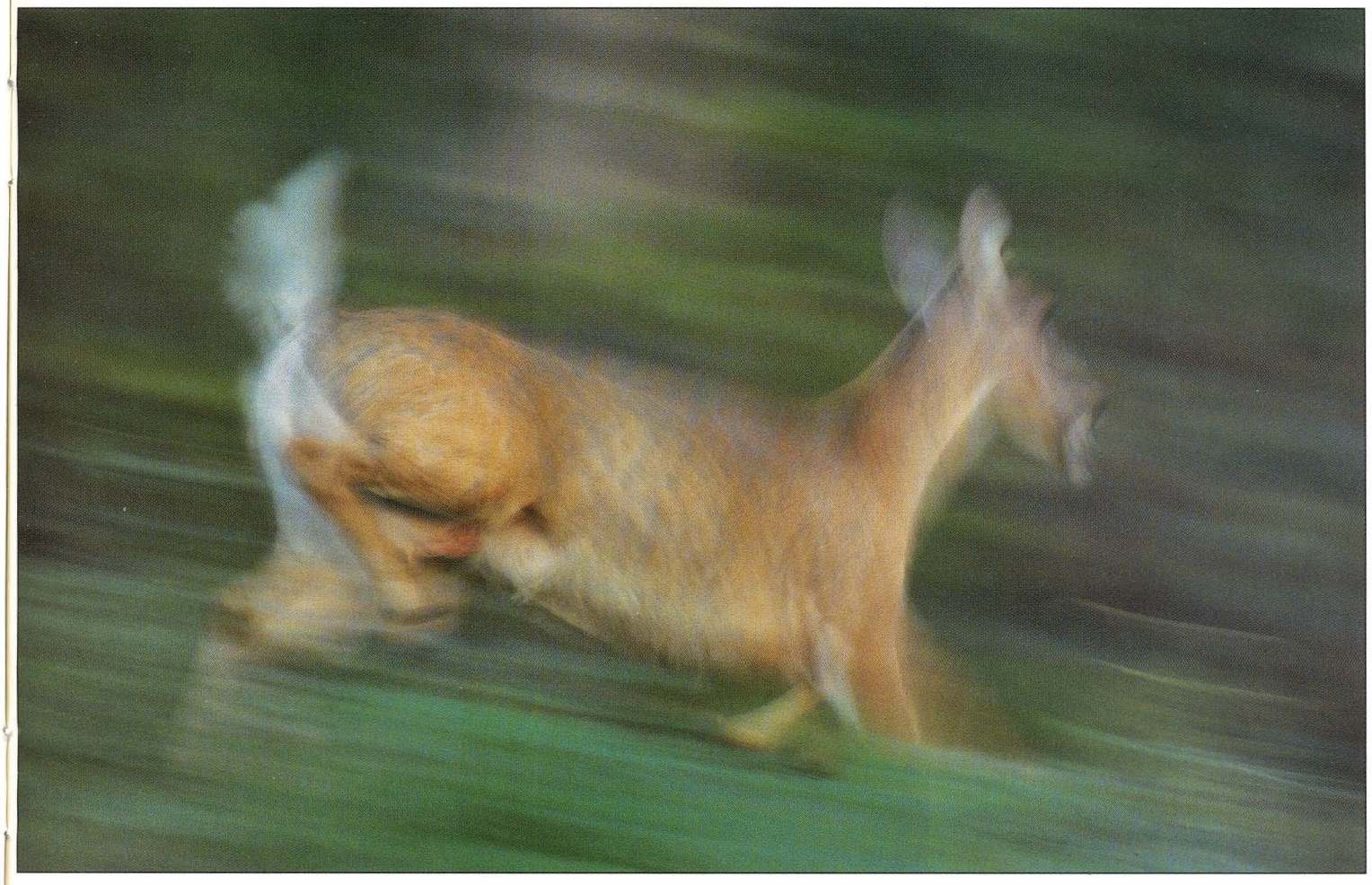
105 mm lens, f/16 @ 1/60

600mm lens, f/11 @ 1/15



600mm lens, f/4 @ 1/30

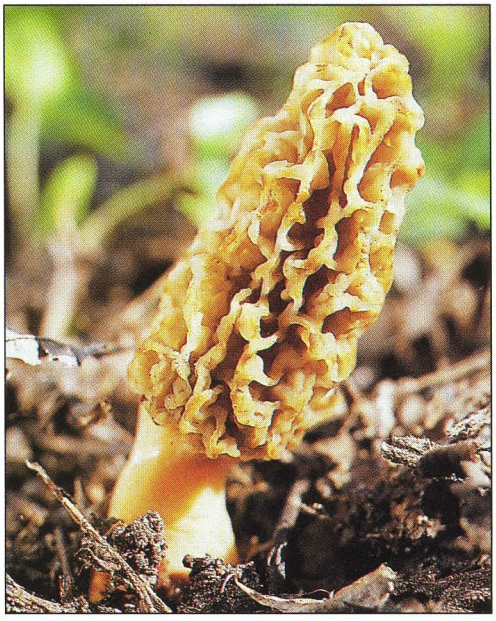
600mm lens, f/4 @ 1/30



There's 'Shrooms In Them There Hills

text and photos by Mike Blair
staff photographer, Pratt

Each spring, the Kansas hills come alive with treasure hunters seeking the golden palatable treasure of the morel mushroom. The hunt is on when temperature and moisture are just right, but hurry, within just a few days the tastey delights will shrivel up.



April brings golden treasure to the Kansas woodlands. It's difficult to see, standing peg-like in moist litter and emergent greenery, but it's there. And for those lucky enough to find it, it provides some of the most delicious and sought-after fare of American wild edibles: the morel mushroom.

While many Kansans steer clear of wild mushrooms to avoid the risk of poisonous varieties, morels are distinctive enough to be safely harvested by anyone. They are part of the "foolproof four", a small group of eminently edible mushrooms that are considered unmistakable.

Morels are free for the taking, and what's more, a mushroom trip often leads a hiker into some of the outdoor's finest conditions — spring beauty and comfortable weather. The thrill of the search is part of the fun. Morel hunting has been likened to "an easter egg hunt for adults."

Morels are unique because of their conical shapes and deeply pitted heads — they are sometimes called sponge mushrooms. There are several species of various colors, but all have the same, trademark appearance. The stalk is smooth and hollow and widest at the base. Morels are usually from 3-5 inches tall but occasionally grow much larger.

Most favored in Kansas is the yellow morel, *Morchella esculenta*. This beautiful fungus grows on various sites throughout the state.

It has a strong, mushroomy odor and sweetish flavor. It is usually found in scattered groups along rivers or in forest and orchard situations. Because of its popularity, numerous attempts have been made to raise this species commercially. However, only recently has a patented process been successful. Wild harvest remains the best source for these tasty morels.

Other Kansas morels include the delicious morel, *M. deliciosa*, the black morel, *M. angusticeps*, and the half-free morel, *M. semilibera*. Generally, these species are darker in color than yellow morels, ranging from tan to black. These morels, while not usually as flavorful as *esculenta*, are still worthwhile targets on a mushroom hunt.

The life cycle of morel mushrooms is complex and fascinating. Though the fungus appears to sprout and grow overnight, the fruiting cap, or edible portion of a morel, is only a brief reproductive phase of a larger organism.

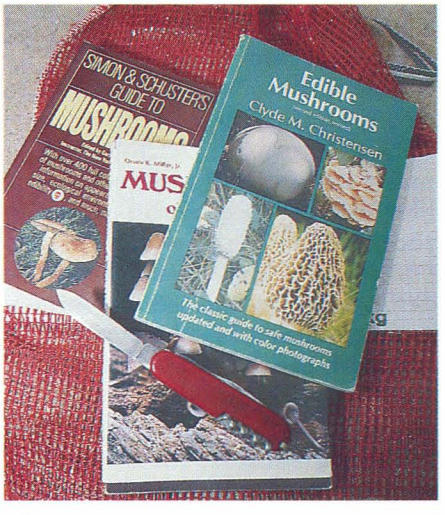
The fungus begins as a spore just 1/2,500 of an inch long, windblown to bare, moist soil. There it absorbs water, swells and forms a protuberance that grows into a long filament, or hypha. Beneath the forest litter, the hypha grows and branches, eventually forming a dense mat of branched mycelium. This hidden network feeds on decaying vegetable matter and grows constantly during warm weather. During winter months, it is dormant.

As spring resumes, moisture and soil temperature reactivate the mycelium. When conditions are favorable, one or more fruiting caps (morels) emerge to reseed the area with spores. New hyphal mats grow, and the fungus spreads.

It also negates a widely held notion about the proper way to harvest morels. Some mushroom hunters believe that stalks of morels should be cut cleanly above the ground line, to avoid "uprooting" a potential morel for the following year. But since the stalk is a minuscule outgrowth of a large fungal mat beneath the forest litter, removal of the stalk base from the earth has no effect on next year's crop.

It takes a practiced eye to consistantly find morel mushrooms. Under trees and heavy leaf litter are ideal spots. They generally begin coming up in April or May.

Finding morels is easier said than done, since they grow in haphazard fashion on a number of sites and tend to blend very well with their surroundings. The first-time hunter is fortunate if he can accompany an experienced mushroomer who knows an area and where to look, for it's easy to walk right past the fungus without knowing it. A trained eye is a must for successful mushroom hunting. But be warned: most morel hunters keep their hotspots to themselves. Invitations to tag along are usually reserved for the most trusted friends.



Necessary equipment is simple and includes a knife and good I.D. guide.

One of the difficulties of morel hunting lies in the short period the mushrooms stay in edible condition. A fresh morel pops up overnight and begins drying almost immediately, depending on exposure to wind and sun. Within a day or two, the mushroom shrivels to a dry relic. Meanwhile, insects and

Identifying mushrooms is critical to avoid any that might be dangerous but can also help you find other, less known, edible varieties. Shown here is the common morel (top) and a 1/2 free morel, also edible. A good I.D. book will include good color photographs and cautions about edibility.

rodents feast on the fungi, speeding the decay process. The best morels are moist and rubbery to the touch, with firm flesh. These are usually less than one day old.

Seasons vary from year to year, but generally, morels emerge from mid-April to early May. Look for them when redbud trees are blooming, or, for a more colloquial twist, "when hedge tree leaves are the size of squirrels' ears." Best times are mornings following rain showers, when daytime temperatures climb into the 80s. Look for morels near streams and sloughs, in forest stands and on hilltops. They often grow near dead logs, and around recently cut tree stumps. Morels are often associated with dead elm trees. Due to the protected environment, morels may be found in dense sumac or poison-ivy thickets, especially early in the season.

Once a morel is found, carefully search the surrounding area for more. Though they may grow alone, morels often grow in groups. When large, these clusters can be spotted from some distance away. Such a discovery is a true delight to any mushroom hunter.

Necessary equipment is simple. Since large areas of field and forest are often searched, comfortable clothing and good hiking boots are helpful. A pocketknife is useful for cutting mushroom stems cleanly, to avoid contaminating the morels with dirt or sand. A cloth bag or mesh sack with good aeration is best for carrying a crop of mushrooms, as it allows them to "breathe." Plastic sacks hasten the deterioration of delicate mushroom tissues and should not be used.

Morels are cleaned by thoroughly washing and soaking them in salt water prior to cooking. This removes both dirt and insects that may be present in the pitted caps. The morels are then sliced into two or three pieces lengthwise, and dipped in egg and cracker crumbs (or flour), before cooking. Alternately, they may be dipped in batter. Morels are typically pan- or deep-fried, though they may be stuffed and baked.

A good field guide is recommended when hunting mushrooms. Many other fungal species may be encountered, and a good photo book often helps satisfy curiosities that typically arise at some new discovery. As well, it may help the hunter identify other safe edible mushrooms for the table.

A word of warning is in order when hunting morels: be careful when dealing with mushrooms that belong to the "false morel" group. The appearance of these fungi is substantially different from true morels, and most are harmless. But a few may cause sickness.

Notable among these is an eagerly sought and commonly eaten eastern Kansas species, the "beefsteak" mushroom (Gyromitra caroliniana.) These large specimens, with rusty red, convoluted caps and white stalks, emerge earlier in the year than true morels (late March to early April). They are actually quite delicious, and many hunters eat them routinely without problems. But they contain blood and nerve toxins that may be life-threatening to some people. Complete cooking is thought to neutralize the toxicity, but most mushroom books advise caution with this species.

Hunting morels is an enjoyable and profitable springtime activity. Remember to ask permission when seeking to hunt on private land, and keep your eyes sharp. With the pleasure of an April outing and a little luck, you'll learn firsthand the goodness of Kansas' golden treasure.

Edited by Mark Shoup

TEXAS VISITOR

Editor:

Last fall, your office sent me information I requested. It was invaluable in planning my first hunt in Kansas, which I enjoyed for two days. Three long-time hunting friends and I hunted pheasant and quail in the Great Bend area. We harvested eight quail and no pheasant. We had the excitement of seeing turkey and deer in the areas we hunted and walked the beautiful farmland of your state.

It was a privilege to hunt in your state where game and land management are given such high priority. Be assured that my friends and I respected the game and land laws as we enjoyed the beauty and thrill of hunting the fields and woods near Great Bend.

Last year, I obtained a used copy of your magazine, which sparked my interest to arrange a hunting trip to Kansas. Now I want a subscription to KANSAS WILDLIFE AND PARKS to enjoy in each issue the outdoor news from your beautiful state.

Jack J. Rousso
Dallas

CRAPPIE LENGTH LIMITS

Editor:

My wife and I love to fish at Big Hill Reservoir, but we can't catch many 10-inch crappie. Could you make a limit of 20 any-size crappie? This would make it so we could have a few fish.

George Mozingo
Altamont

Dear Mr. Mozingo,

I contacted our fisheries people about this, and they gave me some good information that I think will interest you.

Obviously, the crappie length limit has been applied to Big Hill to give anglers the opportunity to catch more big fish, but it will require some sacrifice for it to work. Benefits will not be seen the first year because the fish are still growing. However, we are monitoring the project through test netting and creel surveys. In fact, creel surveys show improvement already. In the spring of 1993, one of every 20 crappie caught was 10 inches or longer. In the fall of 1993, three out of every 20 crappie were 10 inches or longer, and we expect this trend to continue. If it does continue, 1994 should be a good year and 1995 even better.

The department's regional biologist reports that the vast majority of comments from fishermen on this limit have been positive. Keep in mind that a 10-inch crappie weighs twice as much as an 8-inch crappie. This is a benefit of the length limit that most anglers can support.

Of course, if it turns out that most fish aren't growing over 10 inches before they die of natural causes, the program will be reevaluated, but right now things look quite promising. – ***Shoup***

COYOTES AND DEER

Editor:

On Nov. 12, 1993, I arrived at my treestand at about 4:30 p.m. At about 5:15, I heard a commotion to the west of me by some active scrapes about 45 yards away. I originally thought it might be a buck working the scrape, but the deer was jumping up and down. In a few seconds, the deer – a mature doe – came running towards me with two coyotes in pursuit. She stopped at about 35 yards when the two coyotes hit her in the rear flanks, like they were trying to get her hamstrings.

She hit the ground and instantly got up and began stomping on them with her front feet. She then ran toward me with them in pursuit. When they got below my treestand, they hit her again. I could then see that the fronts of the coyotes were covered with blood, as were the deer's hindquarters.

They hit her three more times while running around my treestand. I have to say, it was a heck of a fight. I then shot one of the coyotes at about five yards. It had mange so bad that it had no hair from the front legs back. The other coyote then took off. The doe slowly walked off to the west. I watched her for about a quarter of a mile, and she seemed to be okay but moved very slowly.

It was an experience that I will probably never witness again. The ground was covered with blood around my treestand and the approach to it. I couldn't believe what I had seen. I had heard of coyotes killing fawns or sick deer but never a healthy mature deer.

Duane Fischer
Pratt

OKLAHOMA READER

Editor:

First, I would like to say that I enjoy your outdoor magazine very much. I've subscribed to it for about a year and have found it educational, informative and entertaining.

Lately, I've noticed several articles condemning Oklahoma hunters, especially those who hunt deer. The article in the Nov./Dec. 1993 issue by Dennis Brewer ("Deer Take Work," Page 34) caught my attention. I agree that Mr. Brewer should take action by calling his conservation officer rather than instructing Oklahoma hunters. Also, what credentials does he have to say whether or not Oklahoma sets its deer

season properly? Oklahoma has had several record deer harvests in recent years, and we are expecting a record harvest for 1993.

I think Mr. Brewer is upset because Oklahoma no longer allows Kansas residents to hunt deer. (We are just returning the favor to Kansas.) Maybe by doing this, Oklahomans will have more of those trophy deer like Kansas does.

In closing, I would like to say that your state has done a fine job in turkey management. I enjoy the opportunity to hunt your state for several species, and your landowners that I know are some of the finest people I've met while hunting other states. Keep up the good work.

Craig Meget
Norman, Oklahoma

Dear Mr. Meget:

Your comments are well taken. I would only point out that the "articles" you refer to was a single letter to the editor and in no way represents the position of this editorial staff or our agency. –*Shoup*

TOT TOPICS

Editor:

Just want to let you know how much our family enjoys KANSAS WILDLIFE AND PARKS magazine, from our 18-month-old grandson on up.

The little guy has been looking at the pictures and learning the wildlife from them. He even had to take Grandpa's last magazine home, so he could look at the deer and ducks and goose pictures.

Mrs. Edward Burgess
Kansas City, Kansas

DANGEROUS RECLUSE

Editor:

I am a new resident here in Kansas; my family and I just recently moved here from Texas. We really enjoy reading KANSAS WILDLIFE AND PARKS magazine and find it very informative on Kansas and its outdoor activities.

What I am writing you about is the infamous brown recluse spider. Since we have moved here, we have found this little critter to be in our trees, garden, garage and house. I am very familiar with this little fiddleback because I was once bitten in Texas and still show the scar. Most people I speak with are unfamiliar with its appearance and reclusive existence. I was hoping you could write something to help make the public more aware.

Barry Hill
Independence

Dear Mr. Hill:

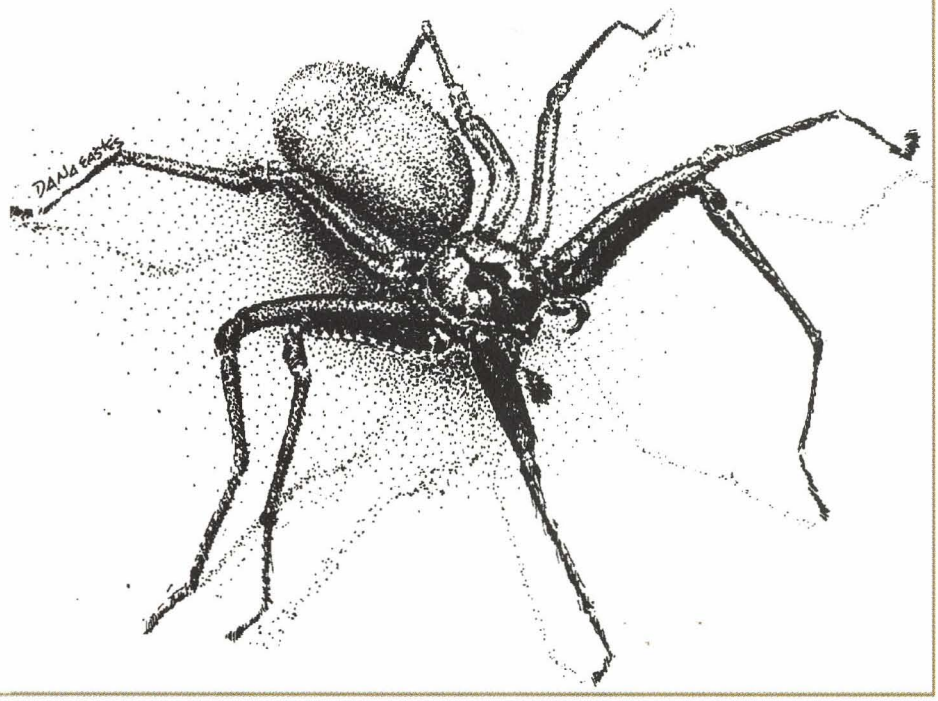
Good idea. I, too, am familiar with this common but highly-venomous spider, as are most people who live in the Pratt area. Our attic is filled with their carcasses, and they occasionally show up in the bathtub or behind a long-stored box in the basement or elsewhere in the house.

At the Pratt Operations Office, they frequently appear under stairwells or in the bathroom sink. (That's taking the term "wildlife agency" a bit too far, don't you think?)

As common as they are, you seldom hear of anyone being bitten by them. Thus, the term "recluse" is most appropriate. Still, they are nothing to be taken lightly. A bite can cause severe tissue damage, illness and, in children or very old people, even death.

But like so many of the things we live with every day, there is little cause for concern if we understand them. Short of covering one's house with a plastic envelope and gassing every square inch, there is really nothing you can do to rid your home entirely of brown recluses. In many cases, the poisons we use on them may pose a greater danger than the spiders.

Picking up clutter and keeping your home clean are the best approaches. Of course, one should also know what they look like. The accompanying illustration should help. –*Shoup*



TRUTH OR CONSEQUENCES

Remember growing up and your mother reminding you to always tell the truth? Two Sedgwick County men should have listened to their mothers.

On Oct. 26, at 3 a.m., the Kansas Highway Patrol notified Kansas Wildlife and Parks conservation officer Alan Hulbert of two men being detained by Sedgwick County Sheriff's deputies.

Deputies Terry Litton and Gregory Lathrop had stopped the men on suspicion of spotlighting deer in rural Sedgwick County. During questioning by Hulbert, the suspects denied trying to kill deer with the aid of an artificial light, but they did say they were after a bobcat. Whoops! Bobcat season didn't open until November 17.

The two were booked into Sedgwick County Jail on four counts including no furharvester's license, no furharvester's education card, hunting furbearers during a closed season and illegal use of an artificial light. Each was found guilty on all four charges and ordered to pay $20 for each violation and $40 court costs. Rifle, scope, gun case, shells and spotlight were also forfeited. *–Murrell*

OFFICER OF THE YEAR

Conservation officer Ray Beisel, Oskaloosa, has been awarded the Shikar-Safari International Award for 1993. The award is presented to one wildlife law enforcement officer in each state each year and recognizes exemplary performance in the protection of wildlife, enforcement of game laws and implementation of conservation programs.

Beisel has been a conservation officer since 1973, first working as a water patrol officer and then transferring in 1978 to conservation officer for Jefferson County. Spending long hours patrolling one of the state's largest and busiest lakes, Perry Reservoir, he has always been ready and willing to respond to the needs of the resource, day or night.

"Through his dedicated efforts in law enforcement, the conservation and protection of our parks and wildlife resources have been enhanced," says former Region 2 supervisor Glen Hurst. "Ray has been responsible for the hunter education program in his area and has worked hard on the promotion of boating safety. For the last several years, he has also taught Wildlife and Parks boating laws at the Topeka Police Department Academy."

Recipients of the Shakir-Safari International Award are nominated by fellow conservation officers within the state. Beisel received his award at the January Kansas Wildlife and Parks Commission meeting in Topeka. *–Shoup*

LICENSE FRAUD

In January, 1993, conservation officer Steve Field, Junction City, was notified by an anonymous caller that a South Dakota man was applying for Kansas big game firearms deer permits as a resident. The caller also said the individual had received a permit for 1992 and had killed a buck in Dickinson County.

Field contacted conservation officer Jim Bussone, Abilene, and told him of the incident. Field checked with the Region 2 office to see if the information was correct for 1992. The regional office provided information that the individual had applied and received a big game firearms permit and had used an Abilene, Kan., address.

Field and Bussone investigated the South Dakota man for a year. The investigation turned up information that the man had applied for resident big game firearms deer permits and received them for the last three years. He had also bought Kansas resident hunting licenses for two of the three years. The address and other information used by the South Dakota man turned out to be for a local man in Abilene.

On Dec. 4, 1993, the South Dakota man was arrested on warrants in Pratt and Dickinson counties. In Pratt County, the man was charged with three counts of making false writing to secure Kansas resident big game firearms deer permits. In Dickinson County, the man was charged with one count of making a false writing to secure a Kansas resident hunting license and one count of misrepresentation as a Kansas resident to secure a resident hunting license.

In December, Pratt County District Court found the man guilty of the three counts of making a false writing. He was fined $250 on each count, plus $128 in court costs. He was also ordered to serve one year unsupervised probation and 30 days in jail, which was suspended. In Dickinson County District Court, the man was found guilty on one count of making a false writing and was fined $250 plus $37 court costs. He was also ordered to serve one year unsupervised probation. *–Jim Bussone, conservation officer, Abilene, and Rob Ladner, Region 2 Law Enforcement supervisor, Topeka*

ALL ON (HIS OWN) TAPE

Wildlife officers of the Arkansas Game and Fish Commission, obtaining videos from a man's home with a search warrant, viewed the film for hours, listing more than 40 hunting violations appearing in the videos. Unfortunately for the errant film maker, each video included dates and times in the corner of pictures of him posing with deer he had killed.

The man pleaded guilty to a variety of charges, including hunting out of season and taking over the limit of deer.

In addition to a $4,000 fine, the man lost his four-wheel drive pickup, two rifles, two pistols, a shotgun, a crossbow and a video camera. He also lost hunting and fishing privileges for three years. *– Arkansas Outdoors*

WETLANDS GRANTS

The Congressional Migratory Bird Conservation Commission has approved grants for the continued restoration of Cheyenne Bottoms and the McPherson Wetlands.

Now in its third grant-funded phase of renovation, Cheyenne Bottoms will receive another $1.2 million in federal fiscal year 1994. The McPherson project has been ongoing for three years as well; the $267,000 awarded last fall is the second federal grant allotment for the area.

The Cheyenne Bottoms grant money will be matched by funds from Wildlife and Parks, Ducks Unlimited, The Nature Conservancy, and the Coleman Company. Efforts funded by this partnership focus primarily on providing deep-water storage at the Bottoms. This is considered an important component of water management, because it reduces evaporative losses.Water held in a deeper pool can be used during drought periods to partially flood the surrounding marshes.

The McPherson Wetlands, located just west of the City of McPherson, once comprised one of the greatest marsh complexes in the state. The area was drained for development and agricultural purposes decades ago, however. As planned, the current project will restore 4,400 acres at McPherson. To date, more than 1,700 acres have benefitted from the partnership effort there.

Preliminary survey results indicate that the restoration effort has yielded a 25 percent increase in bird species diversity in the area.

The McPherson federal grant moneys will be matched by funds from Wildlife and Parks, Ducks Unlimited, the Kansas Audubon Council, Western Resources, the Quail Unlimited Ark Valley Chapter, and the Kansas Chapter of the Sierra Club. *–Shoup*

TREE STRIPS

The potential yield benefits from crop field windbreaks first became apparent to Steve Burr, a farmer west of Salina, following a dry summer in the 1970s. A grain sorghum field that had no harvestable grain on the portion of the field unprotected from the summer's south winds yielded 40 bushel per acre on the part of the same field adjacent to the windbreak. This experience, coupled with a desire to improve wildlife habitat, led Burr to eventually plant six different field shelterbelts on his farm.

With the cooperation of the Soil Conservation Service, fifty different plant species were tested on the Burr farm. Parallel tree shelterbelts were planted 400 feet apart. If only a windbreak was wanted, Burr found that two redcedar rows planted twenty feet apart with 10 feet between individual trees worked very well. He adds that more diversity in these strips will improve wildlife habitat.

"I feel comfortable with the crop yields I've received," says Burr. "We've had 100-bushel milo crops on more than one occasion."

Scientific research confirms Burr's observations. Since the early twentieth century, studies have shown that field shelterbelts can benefit crops. Higher crop yields and quality can be attributed to improved microclimates, reduced wind damage, and higher levels of soil moisture due to trapped snow.

Tree windbreaks benefit vegetative growth even more than grain yields. Therefore, a forage crop such as alfalfa is able to avoid soil moisture competition with windbreaks due to its deep taproots. The improved microclimate provided by a shelterbelt can increase the number of pollinating insects important to alfalfa and orchards. *–Jerry Jost, Kansas Rural Center*

TRANSFORMATION

The Crawford Wildlife Area is like no other in Kansas and is one of only a few in the U.S. The 70-acre area northeast of Pittsburg is a unique cooperative effort by the Department of Wildlife and Parks, Crawford County, the Southeast Chapter of Quail Unlimited, the Department of Health and Environment and physical assistance from Deffenbaugh Industries. Through this coalition, the old Crawford County Landfill was closed in 1991 and converted into a public wildlife area in 1993.

After enduring surface mining for coal and use as a landfill, these acres have begun transformation back to a natural state, where wildlife will thrive among replanted native grasses and forbs.

To meet Environmental Protection Agency guidelines, Deffenbaugh Industries graded the area to ensure proper amounts of earthen fill above solid waste, and then lime was applied to restore soil quality. Once these steps were completed, Wildlife and Parks planted a mixture of native grasses and forbs.

The Quail Unlimited chapter provided $2,600 for the purchase of seed, as well as manpower and equipment to clear the area of large rocks and to plant seed. Milo was also included to provide an initial cover crop. As luck would have it, all the grass species grew well the first year and produced seed heads, which is unusual in first-year plantings.

An extension of the agreement is in final stages of approval, which would expand the area to include an additional 440 acres and include land that has not been used as a landfill but was previously surface mined. Also included would be a few small surface-mined lakes. Fishing may be allowed if water quality is acceptable.

Currently, public hunting is allowed with regulations similar to other state wildlife areas. No vehicles will be allowed on the area. Target shooting will not be allowed. Other wildlife recreation is encouraged, including hiking, birdwatching, observation of other wildlife, primitive camping and plant identification.

For more information, contact the Department of Wildlife and Parks, 507 E. 560th Ave., Pittsburg, KS 66762, (316) 231-3173. *–Stan Harter, wildlife area manager, Pittsburg*

OLD STANDARD

Perhaps the best thing the Reagan Administration did for wildlife and natural resources came in the form of a book called *Restoring America's Wildlife: The First 50 Years of the Federal Aid in Wildlife Restoration (Pittman-Robertson) Act.* Produced by the U.S. Fish and Wildlife Service in 1986, this thorough volume is a must for anyone interested in conservation efforts in the United States.

The book not only outlines the history and accomplishments of this landmark conservation legislation, it details research on specific species and ecosystems and provides an overview of the Act's impact on each individual state. The efforts of private individuals and organizations, state agencies and the federal government toward restoration and conservation of the nation's once severely-depleted wildlife populations is described in detail.

For numbers people, money spent, acres preserved or restored, and populations recovered are laid out in detail.

Wildlife management strategies and techniques are described, as are the economic benefits of wildlife – from the white-tailed deer and the sea otter to bald eagles and upland sandpipers.

This is an excellent reference book for anyone who wants the facts on wildlife management in the U.S. or for anyone who just wants to understand how state and federal governments manage our natural resources.

Restoring America's Wildlife can be ordered by sending $20 to the Superintendent of Documents, P.O. Box 371954, Pittsburg, PA 15250-7954. (Use ISBN # 024-010-00671-4.) Mastercard or Visa orders can be made by phone, (202) 783-3238. *–Shoup*

A BROADER VIEW

Readers who are interested in a broader, worldwide natural resources conservation overview might want to check out *Gaia: An Atlas of Planet Management.* This is another mid-1980s production, but *Gaia* comes from the private sector. More than 100 experts from around the world contributed, including William D. Clark (president, International Institute for Environment and Development and former vice-president of the World Bank), Erik Eckholm (editor of *Natural History*), Paul Ehrlich (*The Population Bomb*), and Alvin Toffler (*Future Shock*), and edited by Norman Myers.

In his introduction, Meyers observes that "life, by its very presence, is apparently creating and maintaining the special conditions necessary for its own survival." The term "Gaia," was first coined by scientists searching for life on other planets when they hit upon the concept of a self-sustaining biosphere.

Appropriately, *Gaia* outlines all the forces related to life on Earth in chapters entitled "Land," "Ocean," "Elements," "Evolution," "Humankind," "Civilization," and "Management."

But this is not simply a natural history book. It is a portrait of a planet in crisis. If the age of the Universe were 24 hours, Meyers notes that "the Industrial Revolution, and all our modern age, occupy less than the last thousandth of a second. Yet in this fraction of time, the face of this planet has changed almost as much as in all the aeons before."

Still, this is not another gloom and doom depressive read. It is a richly illustrated blueprint for hope. (In fact, paintings, illustrations and photographs may outweigh the text.) The authors' stated purpose is not only to draw attention to threats to the planet created by man, but to offer solutions and alternatives, whether the subject be overpopulation (at the present growth rate, "Africa's population alone will rise from one-half billion to 9.5 billion in 100 years"), air and water pollution or energy production.

The Earth's problems are often more political than technological, but we have the ways and means to a safer planet. If there's a budding environmentalist in your household, *Gaia* will provide a useful educational tool. Available at bookstores from Anchor Press/Doubleday & Company. *–Shoup*

FOR THE RECORD

The Boone and Crockett Club has published the *10th Edition of Records of North American Big Game,* featuring 4,000 new big-game entries that are added to the 9,000 in the 9th edition.

Trophies taken from the 1800s to the present are included in 35 big-game categories from bear to sheep. Each listing in each category contains the final score, world ranking, name of owner and hunter, key skull or rack measurements, and place and year of kill.

Eight new world's records for Roosevelt's elk, non-typical Coues' whitetail, Central Canada barren ground caribou, non-typical American elk, grizzly bear, Sitka black-tailed deer, barren ground caribou and muskox are listed.

Chapters include the actual hunting stories of the hunters who took the eight new world's records and detailed information about how to care for trophies in the field and at home. Other chapters discuss the calibers of rifles used to take trophy big game and the number of trophies that were taken by bow and arrow. The conservation movement from its beginnings with the Boone and Crockett Club and the future of wildlife management are detailed, as well as the history of the Boone and Crockett Club.

The newly-revised and updated score charts for all big-game categories are reproduced using actual measurements of world-record trophies.

The cost per book is $49.95 plus $3 for shipping in the U.S. and $4 for shipping to foreign destinations. All money collected from the sale of the book goes to pay for Boone and Crockett Club programs that support ethical hunting, fair chase and wildlife management research. For more information, contact Boone and Crockett, Old Milwaukee Depot, 250 Station Drive, Missoula, MT 59801-2753, (406) 542-1888. *–Boone and Crockett Club*

FULL RESERVOIRS

What do you get when you pour heavy spring rainfall over four months of record winter snow? Full reservoirs and bulging streams, for one thing, and an uncertain fishing forecast, for another.

The wet winter of 1992-93 and the following spring was good for most wildlife, and of course, fish have an obvious fondness for moisture. Much of the high water remains, but what will this mean for the angler? For stream fishermen, high water will generally be good news. New holes will be cut in river bottoms, and trees and brush will be dislodged and deposited in the channels, creating fresh habitat for channel catfish and flatheads. (Most anglers believe that fishing is best during those periods when rivers are on the rise.) More importantly, high water in spring ensures some degree of consistent stream flow through the summer.

For reservoir fishermen, the outlook may be a bit murkier. White bass and crappie are usually harder to catch when the water is muddy. Some anglers and fisheries biologists also fear that high water will coax fish to spawn in areas that could be left high and dry if lakes recede before eggs have a chance to hatch. On the other hand, more water means more space for fish. Space triggers the urge to spawn, and flooded vegetation provides cover for young to survive.

Nutrients are also washed into the reservoir, providing food for prey species such as gizzard shad. In turn, shad are fed upon by bass, walleye and other predators. It's kind of like creating a new lake. Of course, it's going to be two years before you see the benefit.

High water could be hard on the walleye spawn if reservoirs release a lot of water in late April, but it should be a positive factor in the rivers above and below many reservoirs. In the spillways, increased flow means high levels of nutrients and oxygen. Prey species are attracted to this, and predators naturally follow. High water flow also triggers the spawning urge in many species of game fish, which then move upstream into the spillways.

Above many reservoirs – such as Cheney, El Dorado, Elk City, Fall River, Glen Elder, John Redmond, Kanopolis, Marion, Milford, Tuttle Creek and Wilson – white bass move into the rivers to spawn in April and early May. These spawning runs provide some of the most exciting fishing in the state, and heavy stream flow is good news, especially in reservoirs like Kanopolis and Wilson, where the rivers have been too low in recent years to provide a good run.

In a nutshell, heavy precipitation last year should mean good fishing in Kansas, especially in the long term. Fishing for some species in some locations may be impaired temporarily, but increased habitat and spawning opportunity should mean good fishing for other species this year and for most in the years to come.–*Shoup*

WALLEYE TIME

Walleye are active throughout the year and can be caught using almost every method and bait. Reservoir fishing for walleye is usually best from late April through mid-June. During this time, walleye feed actively to regain energy lost through their late-March spawning activities.

The greatest number of fish are caught by fishermen in boats drifting over flats in late May and early June. Night crawlers are used for bait. Walleye feed most actively in low light conditions. Early mornings, late evenings, or days of heavy overcast usually yield the best results although good results have been obtained on sunny days with good wave action. Wave action allows less light to penetrate the depths, in effect, simulating an overcast day. –*Gene Brehm, videographer, Pratt*

BASS SEMINAR AIDS KIDS

A free bass fishing seminar was conducted at the El Dorado Senior Citizens Center on Nov. 21,1993, courtesy of the Outdoor Writers of Kansas (OWK). The seminar featured Tracker Pro Team member Stacey King. King has qualified to fish in four BASS Masters Classics and competed in the Red Man All-American in 1985, 1986 and 1987.

King discussed bass fishing techniques, his profession and fall fishing tips and then opened the seminar to questions.

Following the seminar, OWK hosted a raffle and auction of outdoor sporting equipment donated by manufacturers and other companies. For the raffle, Tracker Marine donated a lifetime fishing license, and the Past Shooters and Guides Association of the Governor's Annual One-Shot Turkey Hunt donated a lifetime hunting license. The Coleman Company also contributed a tent, stove, lantern, cooler, water jug and two sleeping bags for a camping package in the raffle. Bushnell donated a spotting scope. More than 100 other businesses donated items for the auction.

In all, the event raised more than $2,300 to be used to sponsor 10 youngsters from the Big Brothers/Big Sisters organization at the week-long Outdoor Adventure Camp organized by the Kansas Wildlife Federation. –*Murrell*

KCPL FISHING CLINICS

In 1993, the Kansas City Power and Light Company (KCPL) became the first ever corporate sponsor of the Kansas Department of Wildlife and Parks' fishing clinic program for the Kansas City District. This sponsorship helped make possible 45 clinics in the district, instructing more than 2,600 beginning fishermen from ages 6 to 50.

The clinics taught safety, rules and regulations, ethics, fish identification and ecology, and angling fundamentals. To cap the experience off, participants had the opportunity to catch bluegill, largemouth bass, channel catfish and bullhead. Afterwards, they were rewarded with goodie bags filled with educational pamphlets and fishing tackle, as well as pictures of

the budding anglers with their catches.

The clinics were conducted by KDWP's district biologist John Reinke and a summer aide, whose salary was paid by KCPL.

In order to meet increasing demand for the program in 1994, KDWP hopes to fund an additional summer aide.

"A great debt of gratitude is owed to KCPL," says Reinke. "Without their sponsorship and assistance, this clinic season would have been doomed to insignificance. South Bend Tackle Company also helped through the generous donation of new rods and reels."

If all goes well next year, the program should introduce more people to the fine art of angling, and the appreciation of nature that comes with it. *–Shoup*

RECORD YEAR

1993 was a good year for fishermen, with a number of record ish taken statewide. Pomona Reservoir, in Osage County, produced two of five new state record fish.

New records set last year include the following: Channel catfish – 34.69 pounds, caught June 3 in the Kansas River by Kenneth Bradford, Lansing; Flathead catfish – 90 pounds, caught June 15 at Pomona Reservoir by Wayne Medlen, Pomona; Sauger – 3.27 pounds, caught May 16 at Melvern Reservoir by Dennis Barnhart, Topeka; Saugeye – 4.19 pounds, caught March 23 at Elk City Reservoir by Gerald Dannels, Toronto; and Wiper – 22 pounds, caught June 28 at Pomona Reservoir by Kevin Carson, Osage City. – *Mathews*

THANK WINTER FOR SPRING

by Mark Shoup

Winter is a mysterious season in Kansas. It comes in many forms and gives us pleasure and pain in unexpected measure. Despite the best efforts of armchair forecasters, Old Man Winter never tips his hand in these parts. How many times have you heard someone say after a particularly early frost or mild summer, "Man, it's going to be a bad winter," only to witness the holidays filled with sunshine, 50-degree days, and 30-degree nights? Conversely, how many times has Indian summer lasted all the way to Christmas, only to be followed by two months of sub-zero temperatures and windchills that would ice the devil's heart?

I've seen snow as early as the first week in October and as late as April, but many a winter has passed without a falling flake. It's a schizophrenic time, not for the rigid, the faint of heart, or those who love consistency.

Nor is it easy to define a "good" winter in Kansas. The winter of 1992-93 brought the most snowfall I have ever seen. By the time March roared in, many parts of the state had received more than 60 inches. For livestock owners, it was a nightmare. Tractors replaced pickups as feeding intensified in snowbound pastures. Still, it was not a bad winter by common reckoning. The snow came in several 6- to 10-inch waves, and most of it fell softly and piled up in classic white blankets due to an uncharacteristic lack of wind. The temperatures were relatively mild, creating prettier than normal scenery in a usually barren winter landscape.

In my mind, two elements define a "bad" Kansas winter – wind and cold. These, combined with dry air, can make the season linger like cracking skin. When it's 5 or 10 degrees and the wind is blowing 30 mph, it's a shock just walking out the door for work in the morning. Somehow, it's always on these days that your car won't start or your scraper becomes terminally dull. Even if you're lucky enough not to catch the flu, your days off aren't much better. You don't want to hunt; you don't want to walk the dog; you don't want to go to the park with your kids, and you definitely don't want to rake leaves. Too much TV can create an uncontrollable tick in your left eyelid. Even reading can leave you exhausted after a point.

All this, of course, is just an adult's perspective. My two sons, Logan and Will – five and two respectively – seem fascinated by the season. As they bundle up, I explain that Old Man Winter has swooped down from a nighttime sky with long grey beard flying, blowing icy gusts of wind, laughing with frosted breath, and coating every branch with layers of ice. Then they'll charge outdoors, impervious to the cold. They'll make snowmen until they have run out of rocks for teeth and eyes and we have no more carrot noses. Then they'll pitch snowballs at the neighbor's cat.

When I bring them in, their noses and cheeks will stay red for an hour, and they'll run like wild puppies through the house, apparently invigorated by the same air that would thicken the blood of most adults. To them, each winter day is another of life's many revelations.

To me, winter conjures up the image of crows, like black rags, struggling against a grey sky whose horizon offers only the gnarled fingers of bare trees.

I do struggle with this winter image. I recall a story about a man whose misfortunes condemned him to a winter in prison. Until that time, this man had hated winter, but months spent peering between grey bars at the frozen landscape outside had changed his perspective. Instead of frigidity, he saw only freedom. He swore that when freed, he would never scorn winter.

I remember this story each time the first cold front hits, and usually it helps me keep things in perspective. Still, as spring unveils its warmth, as the crocuses crack the earth, the knuckles of trees begin to show the faintest shades of green, and the robins sing, I rejoice, and life is once again a revelation. Yes, I tip my hat to Old Man Winter, for without the chilly contrast of his touch, the revelation of spring might be missed.

TURKEY QUIZ

1. When is the 1994 spring turkey season?
April 13-May 8.
2. When can I purchase a permit?
All Unit 1 permits (except hunt-own-land) have been filled. Unit 2 permits and Unit 1 hunt-own-land permits can be purchased until 5 p.m., May 6.
3. Where can I purchase a permit?
At all five Wildlife and Parks regional offices and select state park offices.
4. How many permits may I purchase?
One.
5. What is the bag limit?
Two bearded turkeys.
6. How old must a turkey hunter be?
Fourteen years old. However, persons 12 and 13 who have completed a hunter education course may purchase a permit and hunt under the supervision of someone 21 years old or older.
7. Can non-residents hunt spring turkeys?
Yes, but only in Unit 2, except that non-resident landowners may purchase a hunt-own-land permit in Unit 1.
8. What is the fee?
General Resident – $25.50
Landowner Tenant – $15.50
Hunt-Own-Land – $15.50
Non-resident – $35.50
9. What's the difference between a landowner/tenant permit and a hunt-own-land permit?
A landowner/tenant permit allows the holder to hunt anywhere in the unit. A hunt-own-land permit only allows the holder to hunt on his or her property.
10. Can I hunt in both units?
Unit 1 permit holders may take only one turkey in Unit 1 and one turkey in Unit 2. Unit 2 permit holders cannot hunt in Unit 1. Therefore, Unit 1 hunt-own-land permit holders are restricted to taking one turkey, unless their property lies in both units.
11. What kind of firearms are legal?
Shotguns 20 gauge or larger, using shot sizes 2 through 9 only.
12. Can I take two turkeys in one day?
No.
--Shoup

DEFENSIVE TURKEY TIPS

Kansas spring turkey season runs April 13-May 8, and while hunters have sharpened their calls, dusted off their camouflage and sighted in their shotguns and bows, one final factor must be considered – safety.

The Kansas Department of Wildlife and Parks offers the following tips for spring turkey hunters:
– never wear the colors red, white or blue (colors that appear on a turkey's head);
– if you wear camouflage, cover your entire body, including face and hands;
– if you see another hunter approaching, remain still and call out or whistle – never wave, stand or sound a turkey call;
– always call in fairly open terrain that allows you to see other hunters from all directions;
– if you bag a bird, carry it wrapped in hunter orange;
– never gobble;
– place decoys outside a line of fire in your direction;
– set up with your back against a tree wider than your shoulders;
– use a flashlight while walking in the dark; and
– always assume other hunters are nearby, even if you have sole permission to hunt. *–Shoup*

WOMEN SHOOTERS

The National Shooting Sports Foundation (NSSF) has helped launch a new organization dedicated to expanding hunting and shooting opportunities for women. The new Women's Shooting Sports Foundation (WSSF) is headquartered in Houston, Texas. Sue King, a lifelong hunter and nationally-known firearms instructor, has been named the national director.

"The WSSF has already put together programs that will help women get started in shooting and that will help provide them with the information they need to enjoy these great sports," says King.

The WSSF organizes 15 "women's only" sporting clays events around the country, as well as similar events for handgun and rifle shooting. For more information on the WSSF, contact Glynne Moseley, Women's Shooting Sports Foundation, 1505 Highway 6 South, Suite 103, Houston, TX 77077. *–National Shooting Sports Foundation*

KANSAS *TRUMPETERS*

Two separate sightings of trumpeter swans in Kansas last January show promise for the species' recovery. Reports of the enormous white birds have been verified in Atchison and Pratt counties. According to the Trumpeter Swan Society (TSS), because of a record nesting year, more trumpeters will migrate through the Midwest than ever before this century.

With only about 10,000 trumpeters in Alaska and another 3,000 in the lower U.S. and Canada, the trumpeter is still rare although it was recently removed from the endangered species list. The birds sighted in Kansas come from a population of approximately 500 that are part of restoration programs in Minnesota and Wisconsin. Birds from different areas are identified by wing tags, neck bands and/or leg bands.

Spectacular to see, a mature trumpeter will weigh 21-30 pounds and have a wingspan of up to 8 feet. The snow white trumpeter looks similar to the smaller tundra swan, which also may rarely migrate through Kansas. Both swan species are much larger than snow geese and lack the black wingtips characteristic of snow geese.

Seeing a trumpeter swan may be a once-in-a-lifetime opportunity, but be careful not to pressure the birds. If undisturbed, the birds may stay in the area until all open water freezes. Do not feed swans because they need to survive on their own and rely on natural food sources if the restoration program is to be a success. Any sightings should be reported to the nearest Wildlife and Parks office. TSS is monitoring the migration of birds from each restoration area and wants as much information about the migration routes and stopover places as possible. – *Miller*

UNINVITED GUEST

Whiskered mouse snouts and innards by the front door, dead rabbits in the yard, small snakes in the flower beds, and spiders of all kinds: these I've learned to accept as part of country life. I've removed spiders, skinks and tree frogs from the house. Opossum, raccoons and even an occasional bobcat eat the cat food on the porch. I thought my husband and I were thoroughly in tune with all the local creatures. I was wrong.

Richard saw it first, disappearing down the heat duct in the kitchen floor. For a week, we moved around cautiously, especially at night, and tried to figure out where the snake might be. Yes, a very long snake. Finally, we decide it must have escaped, and we began to relax.

Several nights later, I was preparing for a long hot shower and reached my hand around the shower curtain to start the hot water. Not feeling the knob, I looked around the curtain to see my hand reaching toward a flicking tongue. A long brown snake was wrapped around the knob, its head reaching out to me. I lost it.

My husband looked up from his newspaper to see me streaking from the bathroom wearing only a shower cap. I pointed and managed to pant out, "Snake!" Richard ran to the kitchen to find something to kill it with and returned with a mop. Evidently afraid it would be swabbed to death, the snake disappeared down the overflow drain.

During the next week, we consulted our book on reptiles and discovered that our guest was a prairie kingsnake. It had probably come inside in a large houseplant that I had brought in from outside. I asked my friends for advice, but mostly got a lot of "Oh-my-God's!" One man said the snake would probably make its way to the septic tank where it could live on insects and reproduce. We'd soon have a whole family of prairie kingsnakes around the house. By this time, I was becoming accustomed to the idea of a snake and was even beginning to feel a little sorry for it. I envisioned it hungry in that drainpipe, besieged by shower water and flushes.

It next appeared in the dining room, stretched out across the doorway to the kitchen. Alone at the time, I suppressed another scream and stopped to consider the situation. It looked as if it had given up hope of finding the outside world, so I walked to the sliding glass door leading to the back yard and opened it. As I did, the sound of birds chirping at the feeder caught the snake's interest. It lifted its head from the floor, headed for the door, and paused at the threshold. It looked back at me, and for a moment I was afraid it would reverse its direction. Relieved, I watched it disappear out the door and under the steps.

I don't know if I will ever be able to meet a snake without some cringing, but I am glad to have met one of the harmless ones, and perhaps my next snake encounter will elicit less panic and greater appreciation for one more of our wild neighbors. –*Pat Petrovits, Lawrence*

FRIENDS OF MAXWELL

The Kansas Department of Wildlife and Parks, the Kansas Wildscape Foundation, and a group of Kansas citizens have joined together to form Friends of Maxwell, a non-profit partnership that will focus on developing Maxwell Wildlife Refuge, in McPherson County.

The group's goal is to provide the public with opportunities to learn about the status and history of native Kansas prairie (including wildlife such as elk and bison) and its effect on Native American and pioneer cultures.

To provide the group startup money, the department has donated surplus bison from the Maxwell herd to Wildscape. Wildscape contracted with Friends of Maxwell to sell these animals at public auction, and will use the proceeds to help the Friends group with fund raising for the refuge. Friends of Maxwell hopes to establish public tours through the prairie, including the opportunity to see elk and bison. Revenue generated through fees for these activities will be placed in the Wildscape fund to maintain and develop the refuge.

Friends of Maxwell is now accepting applications for membership. For a minimum donation of $5, anyone can become a member. Any person who makes a donation by June 11 will be entered in a drawing for a Coleman Family Camping Package, including a tent, stove, lantern, 2-gallon polylite jug, 48-quart cooler and two sleeping bags.

For more information or a membership application, contact Ken McClosky at Wildlife and Parks' Region 4 Office, (316) 755-2711. *–Murrell*

WILDLIFE HERITAGE MONTH

March is Kansas Wildlife Heritage Month, a cooperative effort of conservation organizations whose purpose is to increase awareness of and appreciation for Kansas wildlife and their associated natural resources. Each year, organization members select a slogan that focuses on a particular habitat. This year's slogan is "Agricultural Lands: Sharing the Bounty."

Posters and brochures have been distributed statewide to inform and educate Kansans on the importance of our state's natural resources. Long-sleeve T-shirts sporting this year's artwork are also on sale.

Activities planned include Wildlife Appreciation Day. This one-day event will be held in Topeka on March 16 from 9 a.m. to 4 p.m. Displays and exhibits from participating conservation groups will be set up for public viewing in the first floor of the capital building.

If you would like to become involved or need additional information, contact Lori Hall, (913) 826-7335 or Ken Sherraden, (913) 823-4551. *–Shoup*

NEVER TOO LATE

Did you make a 1994 new year's resolution? It's never too late. The Kansas Department of Wildlife and Parks has one that will last for years and will help state parks and wildlife. This year, resolve to help the department replace some of the untold number of trees and shrubs lost when our wildlife areas and state parks were flooded. It's an easy resolution to keep with the help of the Kansas State Extension and Forestry.

Extension and Forestry's Conservation Tree planting Program provides tree and shrub seedlings for planting in tree rows, wildlife habitat and other non-landscaping uses for nominal fees. For as little as $25, you can purchase enough trees to plant one row 500 feet long, providing a windbreak for your favorite campsite and habitat for countless species of wildlife. You can order trees directly from Extension and Forestry and have them shipped to you or to the state park or wildlife area of your choice. You can also contact your favorite state park office and inquire about types of seedlings most needed. Park staff will help you make your order.

More than 500,000 trees and countless shrubs were lost to the devastating floods, and we desperately need to begin replanting this spring. Contact the Kansas State Extension and Forestry, 2610 Claflin Rd., Manhattan, KS 66502; (913) 537-7050; or contact your nearest state park office or the department's Pratt office, (316) 672-5911. *–Jerry Hover, director, Parks and Public Lands Division*

CONSERVATION DIRECTORY

The 1994 Conservation Directory is now available from the National Wildlife Federation (NWF). Updated and published annually, this is the nation's most comprehensive listing of organizations, agencies and officials involved in natural resource use and management.

This year's 504-page directory contains more than 18,000 entries, including federal and state officials, committees, agencies, and national, international and regional organizations and commissions.

To order a copy of this $20 directory, contact the NWF at 1-800-432-6564. *– National Wildlife Federation*

by Dana Eastes

Careers in Fur and Fins

The red-tailed hawk parents have been bringing food to the nest for weeks. The young hawks have depended soley on nurishment from their parents. Now in the nest there is a comotion of flapping wings and bobbing heads. The fledgling hawks are readying themselves for flight.

You might compare yourselves to the young hawks. You are cared for by your parents and learn from them until you are ready to leave home. And what will you do after you take that first leap from the nest? Will you spread your wings and take flight or flap your wings in a helpless panic?

While you may not be at the fledgling state yet, now is the time to consider what you want to be before you leave the nest, so to speak. If you love the outdoors, it may be something you want to study when you grow up. When you were small, you followed a leaping frog, played in the mud, caught fireflys. Now that you're a bit older, maybe your parents take you fishing, hunting, birdwatching or on long walks in the woods. These outdoor experiences could spark your interest in becoming a fisheries or wildlife biologist.

The Fisheries Biologist

If you can't pass up a chance to jump into all the mud puddles on your way to school or spend endless summer days at the nearest farm pond, maybe becoming a fisheries biologist is in your future. In high school, you should take math, biology, chemistry and computer classes. Work in fisheries biology requires graduation from a four-year college or university, where you study fish inside and out and learn how to manage populations.

The Wildlife Biologist

Do you imitate wild animal sounds until your mother buys her own set of ear plugs? Do you break into a cold sweat if you miss an episode on the Discovery Channel? Would you rather go bird watching than sit at home playing video games? Does your heart jump out of your chest when you see deer, coyotes, bobcats and other four-legged critters in the outdoors? You could be showing early tendencies of "wildlifitis." One way to satisfy this "sickness," if you

please, is a degree in wildlife biology.

Becoming a wildlife biologist requires a four-year degree, with at least 24 semester hours in wildlife biology (animal behavior, anatomy) or wildlife management (balancing and maintaining wildlife populations) .

While still a young student, you should be directing your studies to the math, biology, chemistry, and computer classes. Good writing and communication skills also are essential.

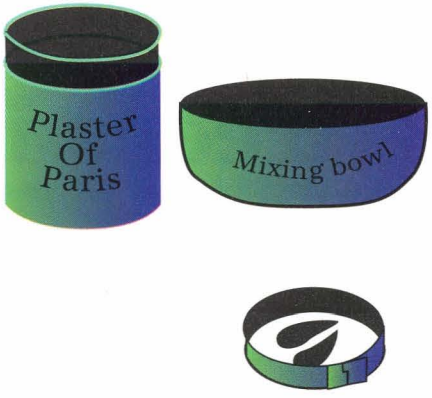
Some things you might do as a wildlife biologist in Kansas include surveying wildlife populations, improving wildlife habitat, informing the public and landowners of wildlife management and habitat improvement practices, and developing plans for wildlife management and research programs.

Whether you love fish or wildlife, above all you should have a passion for the outdoors. Talk with a biologist in your area, and you'll see dedication to the natural resources of Kansas first hand.

Keep in mind that fisheries and wildlife biologist jobs are just two of the many careers in the Kansas Department of Wildlife and Parks.

Also, check out the **Young Naturalist Program** offered in the summer by the Department of Wildlife and Parks. Contact the Pratt office (316) 672-5911 or any Wildlife and Parks office in your area.

Plaster-of-Paris Animal Tracks

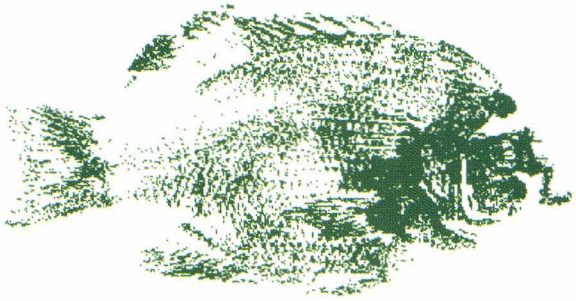


Materials: Plaster of Paris, cardboard strips, plastic bowl, water, acrylic paints.

Directions: Water sources such as farm ponds, mud holes, streams, and water tanks attract wildlife and are great places to make plaster of paris animal tracks. First find a good clean track. Make a ring from a strip of cardboard by locking slits in the ends together. Mix plaster of paris with water. Pour batter into track and ring evenly. Leave to set up firmly. Take home or back to your classroom to identify. Finish the cast by painting track with acrylic paints.

Objective: Identify and preserve wildlife tracks. Learn which different animals visit your waterhole by identifying their tracks.

Fish Prints



Materials: Fish (Five to seven inch bluegill work best), acrylic paint, paint brush, paper, towels and newspaper.

Directions: Dry fish with paper towels. Place fish on newspaper and lightly brush a small amount of paint on one side. Gently press a piece of paper over painted side of fish and rub. When finished, lift off the paper and allow picture to dry.

Objective: Identify different types of fish by shape and scale pattern. Learn the different parts of fish anatomy.

HIGH GROUND

by Mike Miller

How To Be A Good Game Spotter

(Or at least look like one)

Good game spotters have always been admired. Generally when two or more self-proclaimed outdoor persons get into a vehicle, each secretly wants to out-see the others. Each takes special pride in seeing a deer, or a coyote or even a pheasant before any of the others point it out. It's a skill that you can get better at with practice, but, I'm afraid, much of the talent for game spotting is natural. Either you got it or you don't. And those of us who don't are often left frantically scanning the countryside through the car window, trying to see whatever fantastic wild specimen our buddy has just pointed out.

"Jeez! Look at that buck over there! He's a monster. See him?" my buddy Rocky exclaimed as we sped down the dirt road at 60 m.p.h.

"Yeah. I see him . . . no . . . oh, you mean over by that plum thicket? Yeah I see him." I said unconvincingly.

"Plum thicket? No, no. He's on this side of the road, across the draw, just south of that lone tree. See him? He's huge."

"Lone tree . . . hill. . . " I mouth out loud as I squint desperately to see this magnificent deer. "Oh, there he is. You're talking about that little gray speck half-mile out there?"

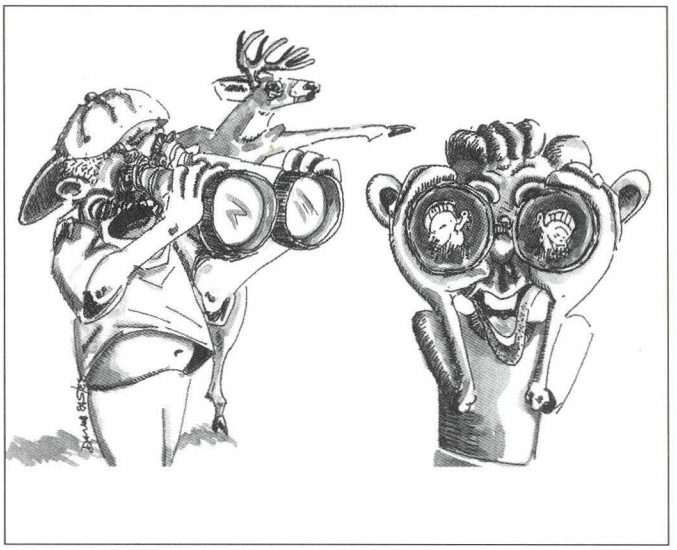
"Yeah!" Rocky exclaims. "Man, what a deer."

"He's a good one alright," I confirm, wishing I had a pair of binoculars handy just to verify what I'd agreed with.

I often hunt with several friends who have an uncanny ability to see game (or at least they see game much better than I). I assume their normal vision is similar to mine when I'm looking through 7 X 35 Bushnells. And I've adapted by developing ways to avoid demonstrating my deficiency.

For example, in the event described earlier, my first mistake was to mention a landmark: the plum thicket. I also failed to notice on which side of the road my buddy was looking. The secret is to stall. Just agree with whatever exclamations your partner is describing, and find where his eyes are trained. Never panic and begin wildly craning your neck. Maintain an attitude of nonchalance, as if you've seen the object, and even if you never see it, act like you have.

Overanxiousness can also create the infinitely embarrassing situation of speaking too soon. It happens when your mouth works before the nerve transmissions from your eyeballs reach your brain (a mighty slow trip for some of us).



Dana Eastes illustration

On one late-winter trip, I saw something in the distance that I knew was some kind of critter or critters, but my haste to point them out first caused me great embarrassment. "Look! Over there on the wheat . . . dee . . . er . . . coyo' no . . . um, see 'em? Look at the . . . oh, they're geese."

My hunting buddies laughed awhile, wondering out loud how I could have mistaken six Canada geese for deer or coyotes or whatever else I had muttered. Other times my brain has received the message from my eyeballs just before I make a complete idiot of myself. (I end up only being half an idiot.)

"Look! Aha, I saw it first, that . . . over there on the hill . . . that . . . uhm . . . Boy, to someone who didn't know better, that stump would look just like a big ole buck."

If you're pinned down to admitting the truth about not seeing the critter, a good defense is to doubt it ever existed. This might work, but you could lose a friend.

"I know Jonsey claims to have a seen a giant gobbler with a 12-inch beard, but I never saw it and I was there. There were some angus calves in that pasture, and I think that's what he might have been looking at." (Be warned, this might start a good fist fight.)

It's an unfortunate fact of life that some of us will never be great game spotters. Those of us not blessed with eaglelike eyes must survive by our cunning, creativity and wit. We lie.

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