

# KANSAS WILDLIFE

MARCH/APRIL 1987

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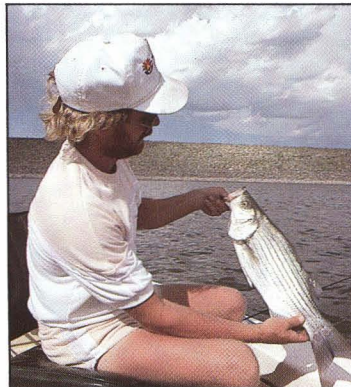
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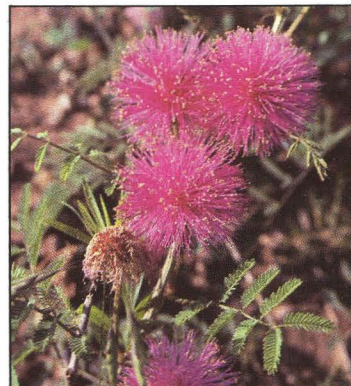
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**Front:** Mike Blair caught this American bittern away from the dead reeds that ordinarily camouflage it at Quivira National Wildlife Refuge. Blair, using a 400mm lens, set his aperture at f/11, his shutter speed at 1/125th of a second. See related story on Page 2.

**Back:** Gene Brehm photographed this prairie rose using a 50mm macro lens. Brehm set his aperture at f/19, his shutter speed at 1/30th of a second. See related story on Page 30.

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

# THE BUCK STOPS HERE



## The Lineup

I've never managed a baseball team, but I imagine making out a lineup is similar to planning a table of contents for KANSAS WILDLIFE.

A manager, as I see it, sits down with a piece of lined paper, thinks a bit and says to himself: "OK, what's the best lineup I can field today?" More thinking, maybe a hard decision or two, then nine names appear on the sheet of paper. And there it is — a starting lineup.

Once every two months, I sit down with a blank piece of paper, draw in my own lines and write down story topics and authors for the next issue. Like the manager, I usually have a pretty good idea what the lineup will look like before it's committed to paper. Most issues are tentatively planned about a year in advance. But it's not "for sure" until it's written down and attached to my clipboard. Only when the table of contents has been compiled can the long editing and production process begin.

The table of contents you see on the adjoining page wasn't locked in till mid-November 1986. At that point I was merely looking to get stories and authors down on paper. Page numbers weren't assigned till early December.

At the top of my list was a story on wipers, fish that are crosses between female striped bass and male white bass. Steve Price, a fisheries biologist based in Stockton, agreed last spring to write the story. His assignment: Recap the 10-year history of wipers in Kansas and tell us how and where we can get in on this fantastic fishery this spring. Mission accomplished. Steve's story begins on Page 10.

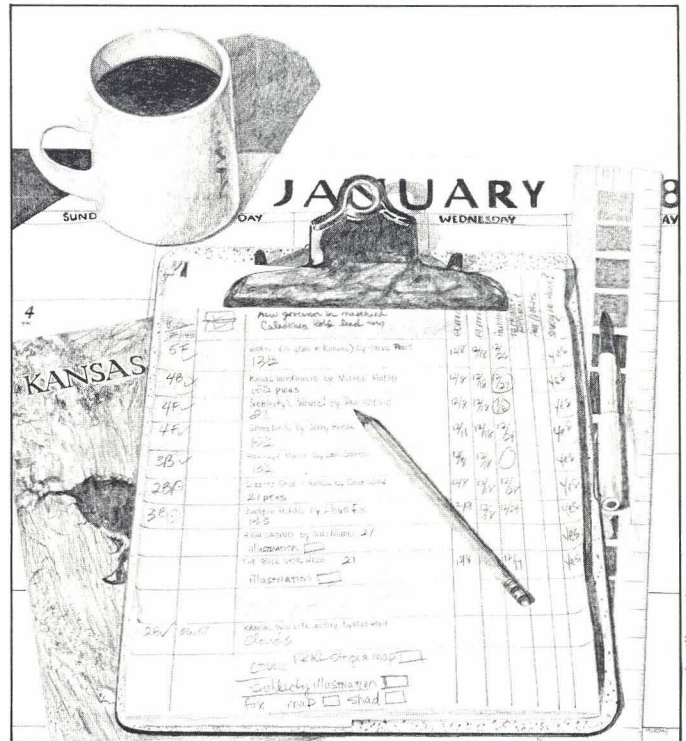
Kansas wildflowers was the second entry on my list. Each spring one of our greatest natural resources begins to bloom over prairies and forest floors. Paola's Michael Mueller, a member of the Kansas Wildflower Society, submitted the story that begins on Page 30.

A former Fish and Game Commission employee and his locally famous catfish dipbait was the basis for the third entry. As research for the story, I spent a morning observing George Schlecty and wife Connie fishing with Wowie, George's homemade dipbait. Most fishermen are reluctant to give the recipe for their secret baits, but George was more than happy to divulge the ingredients. That story begins on Page 6.

The fourth story was accounted for with one word: shorebirds. Jerry Horak, an Emporia-based wildlife biologist, and student assistant David Blew co-authored the story that appears on Page 2. Their piece is a perfect complement to Jan Garton's story beginning on Page 27, where Jan tells us about the second annual Kansas Wildlife Heritage Month. Jan, from Manhattan, was one of the state conservationists who planned the first Heritage Month.

Gizzard shad, an important preyfish in Kansas rivers, streams, lakes and ponds, are the subject of David Willis' story beginning on Page 34. David is a reservoir fisheries investigator based in Emporia.

Seventh on the list was a story on badgers. Lloyd Fox, our Emporia-based furbearer biologist, wrote that piece. He also compiled the data that is the basis for the accompanying badger density map. Lloyd's story begins on Page 38.



Patti Murphy illustration

Rob Manes takes the High Ground on Page 41, where he shares his optimistic beliefs about today's youth. Rob, based in Pratt, is the agency's education coordinator.

Mike Blair, our staff photographer, shows his versatility this issue with some dandy photos of Kansas cloud formations. His behind-the-lens observations are relayed in Gallery, which appear on Pages 36 and 37.

And while all these stories are being edited and worked into our layout, associate editor Mike Miller is performing similar duties with the Center Section, which begins on Page 15. Joyce Harmon Depenbusch, our wildlife education coordinator, prepares Nature's Notebook each issue. Patti Murphy, our illustrator, uses her steady hand to create the artwork that accompanies these pages. Editorial assistant Bev Aldrich handles the manuscript retyping chores, and Kathy Gosser keeps our circulation department running smoothly.

It's a lineup I'm proud to present, a team I'm proud to be part of. But how we're received once we hit the field, that's up to you. The March/April issue is in your hands.

Play ball.

Paul

Paul G. Koenig  
Editor

# Kansas Shorebirds

About half of all shorebirds that occur in North America spend at least part of the year in Kansas. A look at three of our most common shorebirds.

by **Gerald J. Horak**  
*Wildlife Research Biologist*  
*Emporia*  
and  
**David L. Blew**  
*Emporia*

**S**horebirds are scattered throughout Kansas, mainly concentrated around shallow-water areas or on mud flats. They do, however, also occur in the uplands.

This group of birds consists mainly of sandpipers and plovers but also in-

cludes woodcock, snipe, curlews, godwits, avocets, stilts and phalaropes. Generally speaking, shorebirds are migratory and travel long distances. More than half of the species that breed in North America, mostly in Arctic tundra, migrate and spend their

winters in South America, traveling as far south as Chile and Argentina.

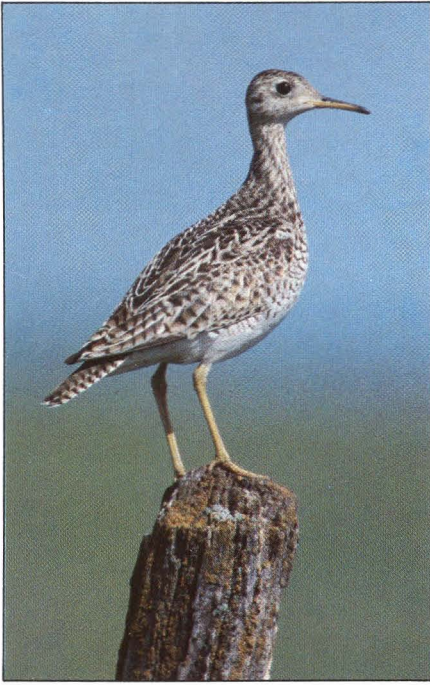
Of the approximate 80 shorebirds species that occur in North America, 40 are known to occur in Kansas at least part of the year.

Cheyenne Bottoms Wildlife Area

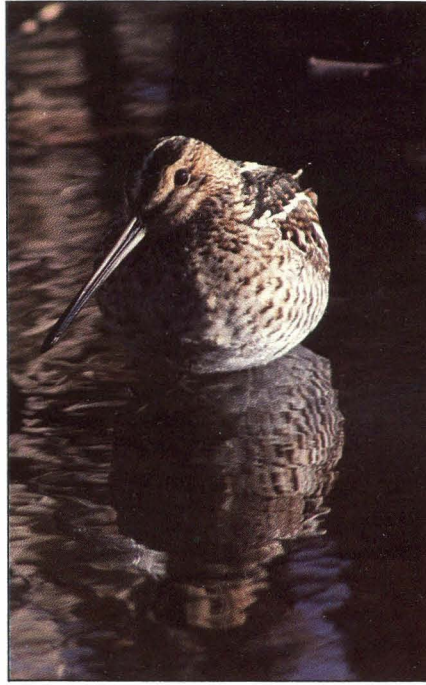
Killdeer are found in open country, cultivated fields, pastures, on gravel roads, even in backyards. The bird spends much of its time away from water.



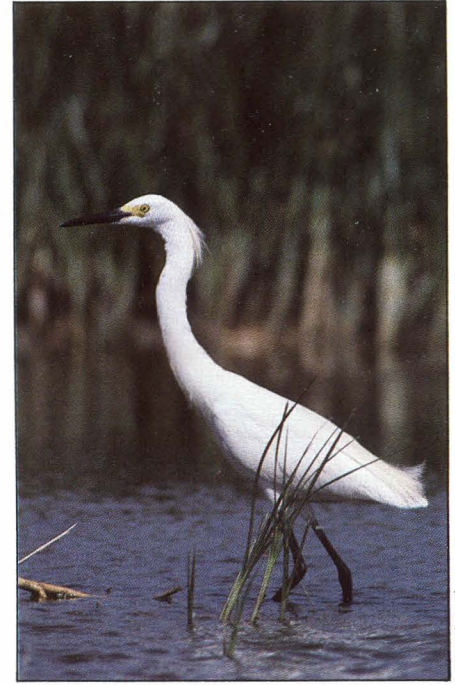
Mike Blair photo



Ciene Brehm photo



Ron Spomer photo



Mike Blair photo

The upland sandpiper, left, winters in Argentina and arrives in Kansas in March. The common snipe, center, migrates through Kansas during early spring and late fall. Snipe will winter here if they can find open water. The snowy egret, right, is found near marshes, streams and ponds.

and Quivira National Wildlife Refuge in central Kansas are the most intensively used shorebird habitats in Kansas because of the shallow water and extensive mud flats. Kansas reservoirs and lakes with low-water levels and exposed mud flats also attract large numbers of shorebirds.

According to an International Shorebird Survey, Cheyenne Bottoms attracts almost half of the northern migrating shorebirds. In addition, more than 90 percent of the populations of five different species stop over at the Bottoms. These species are the white-rumped sandpiper, Baird's sandpiper, stilt sandpiper, long-billed dowitcher and Wilson's phalarope. The marsh complex of Cheyenne Bottoms and Quivira are unique areas to feed large numbers and different species of shorebirds. These areas are important stopover places for migrating birds as they fly to their northern nesting grounds and southern wintering areas.

Both market hunters and sportsmen hunted shorebirds heavily around the turn of the century. In the 1920s Arthur Cleveland Bent wrote of his early experiences as a shorebird hunter:

*... on a wet marsh a substantial blind was built of brush, with a seat in it for two men; in some places in the meadows, where the grass grew high, a box or a board to sit on was all the gunner needed. Wooden or tin decoys painted to imitate yellow-legs or plover were set up in the sand or mud,*

*all facing the wind and within easy range. Here in a comfortable blind the hunter could lounge at ease, bask in the genial sun of early autumn, smoke his pipe and meditate, or watch the many interesting things about him, the rich autumn colors of the marsh vegetation, the ever-changing picture of sky and sea, the black terns and the swallows winnowing the meadows, the gulls and the terns over the sea and the flocks of small waders running over the mud flats. Suddenly he is awakened from his reveries by the well-known note of the winter yellow-legs and discerns a mere speck in the distant sky; he whistles an imitation of its note; the bird answers him and, looking for companionship, circles nearer; by judicious calling the bird is attracted within sight of the decoys and, after several cautious circlings, it sets its wings and scales down to the decoys, where it meets its fate. Perhaps a whole flock may slip in unexpectedly, wheel over the decoys and hurry away, giving the gunner only a hurried chance for a quick shot. Perhaps a curlew may fly over or a flock of beetle-heads fly swiftly by; the gunner must be ready for all such chances. There is an ever-changing panorama of bird life on the marshes, full of surprises and delights for the nature lover.*

Today the common snipe and woodcock are the only two shorebirds hunted in Kansas. Snipe are never

found in flocks, usually flushing as singles or doubles from short grass on the edge of a marsh. They often flush wild, flying a zigzag pattern close to the ground and uttering the sounds *scape-scape*. Woodcock, although an upland-woodland species, have habits that are similar to those of snipe. Woodcock flush wild, fly and travel an erratic zigzag pattern and do not flock during migration.

For the birdwatching enthusiast, the shorebirds are the most difficult and challenging bird to identify. Most shorebirds occur in Kansas during spring (April-May) and late summer (August-September), when identifying them is particularly difficult. During these times they rarely sing and are in a transitional or plumage-changing period. Most shorebird species are brown or blackish on the back, mottled and streaked with buff or whitish feathering below. Their diets consist primarily of mollusks, crustaceans and insects found in or on the mud flats.

Most species are relatively tame, and the observer can learn to approach by slowly stalking on the mud flats. An easier way is to slowly approach feeding shorebirds by vehicle. There are several field guides available as an aid to shorebird identification. Some of the better field guides include Roger Tory Peterson's *Field Guide to the Birds*, the Robbins, Bruun, and Zim book *Birds of North America*, and National Geographic Society's *Field*



Gene Brehm photo

White-faced ibises nest at Cheyenne Bottoms Wildlife Area and Quivira National Wildlife Refuge. This ibis built its nest from matted cattails.

*Guide to the Birds of North America.* In addition to the field guide, a good pair of binoculars is a must and for the dedicated birder, a spotting scope is essential.

Identifying shorebirds is only part of the joy of birdwatching. To get the most enjoyment from observing shorebirds, a person must learn about the habits and habitats of these birds. One helpful book on the life history of shorebirds is titled *The Shorebirds of North America*. Stout, Mathiessen, Clem and Palmer are the authors. What follows is a short description of three of the most commonly seen shorebirds in Kansas.

### Upland Sandpiper

With wings uplifted, an upland sandpiper lands on the top of an old fencepost, slowly and meticulously folds his wings. Its brown-streaked feathers blend in with the surrounding landscape. The bird pauses momentarily then whistles a long, slurred *whooleee, wheelloooo*, as if making a “wolf whistle” at a pretty girl. This sandpiper then hesitates as you stop

your car and watch it atop its perch. Then on quivering wings the bird flies away, only to land on top of another fencepost farther down the road.

The upland sandpiper, unlike other sandpipers, does not inhabit wetland areas. Instead, this long-legged bird can be found in hayfields, meadows and pastures throughout most of Kansas. The upland sandpiper is easily recognized by its long neck, long legs, brown-streaked plumage and a large, wedge-shaped tail. Its wolf whistle call can be heard during the day for up to a mile, while at night it whistles a mellow *kip-ip-ip-ip*.

Wintering in Argentina, the upland sandpiper arrives in Kansas in late March and makes its presence known by sitting atop fenceposts and utility poles. Nesting usually begins in May, and the nest consists of a grass-lined depression, usually found in pastured or hayed grass. Four cream-colored eggs speckled with brown are incubated by both sexes for 21-24 days. The young leave the nest soon after hatching and are cared for by both parents. At 30 days young sandpipers look much like the adults and are able

to fly. Food for both young and adults is almost exclusively insects, but sandpipers also will feed on vegetation.

Once abundant, upland sandpipers began to decline in the late 1800s. Market hunters had depended on passenger pigeons but saw pigeon numbers dwindling rapidly. So they increasingly began turning to upland sandpipers to fill the void on the game wagon. Today the upland sandpiper is still abundant in Kansas where native grasses persist.

### Common Snipe

Slipping through the marsh grass, the common snipe probes for food in the mud with a bill that looks much too long for its small size. Its highly sensitive bill touches an earthworm. The snipe then curves the upper end of its pliable bill, seizes the earthworm and pulls it from the mud. The snipe works the earthworm up the length of its bill using spines at the base of its long tongue. The worm is swallowed, but the snipe continues the search for

more earthworms, insects, snails and leeches along the marsh edge.

The common snipe is the only snipe native to North America. It is easily recognized by a long bill (2½-2¾ inches), a brown-streaked breast, white belly and an orange tail barred with black. The eyes are set far back on the head, allowing the snipe to see both forward and back. When flushed, the snipe takes off in a rapid zigzag flight and utters a harsh nasal alarm.

The common snipe nests near marshes and bogs of the upper United States and Canada. In territorial flights over the nesting grounds, males will spread their outer tailfeathers, which produces a weird *woo-woo-woo-woo* sound. The male directs this flight toward the female, which selects the nest site.

The nest structure is a grass-formed cup that's generally well-concealed. The female lays four eggs, which are light-buff to brown and streaked and blotched with dark brown. She then incubates these eggs. Males are monogamous and are usually close to the incubating female. Soon after hatching, both parents lead their young away from the nest.

Common snipe migrate through Kansas during late fall and early spring. Snipe will winter in Kansas, too, if they can find open water. Snipe are a challenging target, although few Kansans hunt them.

## Killdeer

The killdeer is much like the upland sandpiper in that it spends most of its time on upland areas away from water. It is no doubt the best-known of all shorebirds in Kansas. The bird is a plover and gets the name from its song *killdee, killdee*.


The killdeer's color patterns show white on the underside but are distinguished by two black bands across the chest and gray-brown on the top, lower back and rump. The upper tail converts to bright rufous, or orange. Killdeer have a black bill. Legs and feet are flesh-colored, and the bird has a long, rounded tail with a black band near the end. Killdeer do not congregate in large flocks and are usually seen flying erratically and singing their well-known *killdee, killdee* song.

Killdeer are found in open country, cultivated fields, pastures, gravel roads, even backyards. The bird's feeding habit consists alternately of quick runs, abrupt stops and then a sudden plunge to the ground, where it feeds on insects.

Killdeer parents defend their eggs and young by flying into the face of

livestock that get too close or by luring away intruding predators by the "crippled bird" act.

Killdeer usually lay four gray-buff eggs spotted with brown or black. Incubation period is 24 days, and both adults take care of young. The young can fly in 25 days.

A person who likes to be outdoors can spend many enjoyable hours just watching and identifying these fascinating birds. Even during the winter, when the shorebirds have gone to warmer climates, you can read books and articles about shorebirds to keep your interest piqued for the spring migration. 

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*David Blew, a graduate student at Emporia State University, is working on a degree in range management.*

The black-necked stilt, right, is a transient bird in Kansas, while yellowlegs, below, migrate through the state in the spring and fall.



Mike Blair photo



Mike Blair photo



# Wowee!

Yeah, Wowee! It's what you say when you first smell George Schlecty's catfish dipbait. It smells awful, but, man, does it work!

by Paul G. Koenig  
*Editor*

photos by Mike Blair

It's been 50 years since George Schlecty, Bill Weiss and four other Douglas, Wyo., school chums made regular late-spring jaunts to trout-laden meadow streams. It was an annual thing for the six of them. Turn in the school textbooks, pool everyone's deposit money (\$5) to buy bacon, potatoes and onions, pack their bedrolls, gas up the old Model A and head for the high ground. Rainbows, cutthroats and brookies waited in the cold, clear waters beyond. Good times, Schlecty recalls. Good times.

Trout remain the prize catch among Wyoming fishermen, but Schlecty hasn't lived in Wyoming since 1948, when he moved to Wabaunsee County, Kan., to work on the family farm. He's still an avid fisherman, although trout no longer hold the allure they once did. The 63-year-old Pratt resident fishes for channel catfish almost exclusively these days.

Blame Schlecty's conversion to channel catfish on location. Kansas has never been known for its trout fishing; the state has no natural trout streams. But Kansas is known for its superb catfishing. Too, blame Schlecty's conversion to channel catfish on one other factor. George Schlecty? He calls it Wowee.

OK, you may be thinking, halfway expecting a punchline. What is Wowee? Wowee is a 50/50 mixture of fermented beef brains and moldy cheese scraps. Wowee contains no secret herbs and spices, no special sauces, no additives and absolutely no preservatives. Just beef brains and cheese scraps. And the name, appropriately, comes from the nearly universal exclamation of what one says upon taking that initial whiff of Schlecty's catfish bait. There are, of course,

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Schlecty uses an old paint stick, left, to stir the catfish dipbait he calls Wowee, which has the look and consistency of wet peanut butter. At right, Schlecty extracts a plastic worm once loaded with Wowee.





other exclamations uttered when smelling the bait. But Wowiee it's been for more than 30 years, and Wowiee it shall remain.

What really matters is that Wowiee catches catfish. And that, Schlecty assures, is *all* it catches. "I've never caught anything else but a channel cat on this bait," Schlecty confirms. "Not a flathead, not a bullhead." Just channel cats.

The retired education coordinator for the Kansas Fish and Game Commission is quick to note that his Uncle Buzz Schlecty from Iowa gave him the recipe for the Wowiee (please see the accompanying story on Page 9). Back when Uncle Buzz was making Wowiee, he preferred Limburger cheese to the scraps nephew George uses today. But Limburger is a Cadillac among cheeses (as far as price goes), and Schlecty has no desire to pay Caddy prices when he makes as much as 40 pounds of Wowiee at a time.

Forty pounds of beef brains and moldy cheese scraps fermenting under the summer sun for 10-14 days stinks like you wouldn't believe. "The smell is somewhere between an unkept barnyard and a jar of rotting shad sides," Schlecty says, ever so matter-of-factly. Wowiee does stink, which is why channel catfish like it so. They're drawn to its strong odor and are often compelled to pick up a small plastic worm that's been dipped in this stinkiest of fish potions.

**W**hich brings up another question. Why make your own catfish bait when it's probably easier, if not cheaper, to buy any of the quality commercial baits available? Two reasons, Schlecty says.

"Every fisherman dreams about coming up with a bait or lure that's better than the others," he explains. "And it's a feeling of satisfaction to know that (your bait) works."

Most folks can relate to that idea, of taking pride in making or doing something by hand. Yet Schlecty, grinning impishly now, confides that making Wowiee gives him one other pleasure. The mere thought of that pleasure puts a big smile on his face.

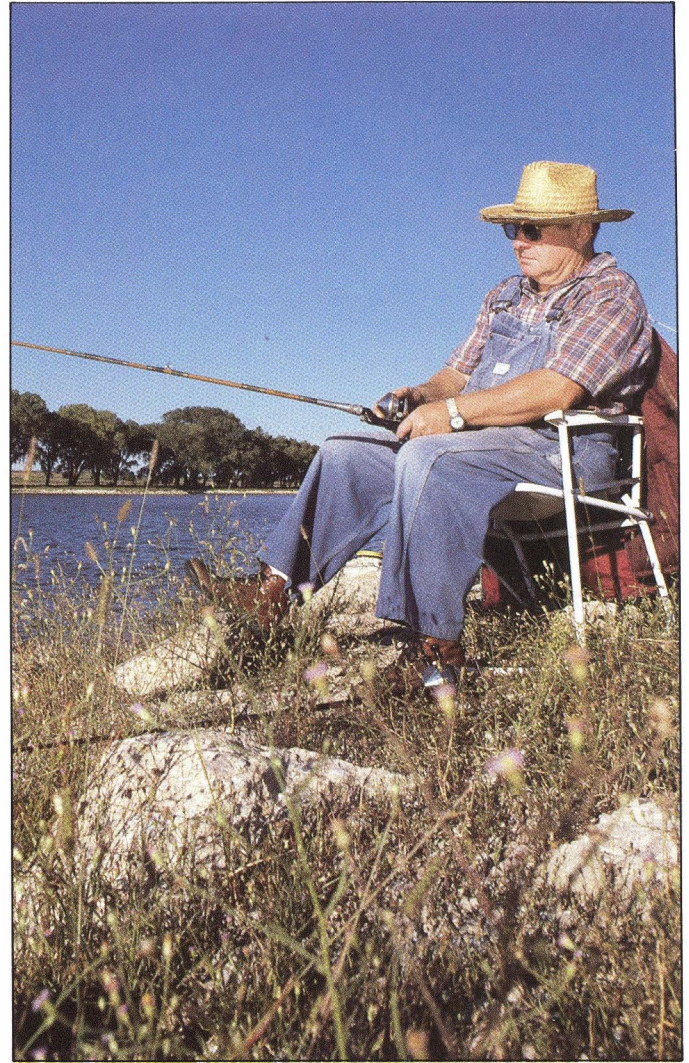
"I get a lot of satisfaction when my neighbors complain (about the smell). Ooooh, I like that!" he says with a wide grin and blink of both eyes. "I get a kick out of it when people wrinkle their noses. But, doggonnit, it does catch fish."

Wife Connie has been smelling Wowiee even before she and George were married 21 years ago. Her initial reaction? "The first time I noticed it I thought the sewer had backed up."

Connie and George Schlecty are man and wife first, fishing buddies second. "When I fish, she fishes," Schlecty explains. "When I'm home, very few times have I gone without her. We enjoy each other's company. I like to see man-and-wife teams out fishing. It makes for a better marriages."

But all marriages are tested. Little problems crop up that must be resolved before they become big problems. About 10 years ago the Schlectys encountered such a problem. And Wowiee was at the root of it all. Schlecty had just finished dipping his plastic worm in a jar of Wowiee, which has the color and consistency of wet peanut butter. Connie was sitting to the right of her husband.

After he'd sufficiently gooped up the worm, Schlecty reared back and cast the Wowiee-coated offering into the water. But as the bait rocketed forward, residual chunks of the foul-smelling stuff sliced off the worm and right into Connie's hair. Connie felt the yucky, wet stuff enter her



Schlecty relaxes at a county lake while Wowiee goes to work underwater.

coiffure, knew what it was and had immediate words for George. And then?

"She went to the car, cleaned her hair off and got with the program again," Schlecty says. "Now she gives me plenty of room."

He's also got plenty of time to spend fishing with Connie. And Schlecty's determined to keep a promise he and Bill Weiss made to each other back in the mid-1930s. "Someday we wanted to get to the position where we could both retire and just fish. I've seen too many people chase the almighty dollar, and they forgot what they were going to do when they retired," Schlecty says.

The promise — that of enjoying fishing after retirement — Schlecty plans to make good on. Connie is all the company he needs as he lofts his stinky dipbait to waiting catfish below. Gone, however, are Uncle Buzz, who died in July 1985, and Bill Weiss, who passed away later that year. All part of life.

Schlecty realizes this. So that leaves him alone to carry on the lifelong dream of two Wyoming schoolboys and the tradition of making Wowiee just as potent and stinky as he can.

George Schlecty is excelling at both.



# The Howee On Wowee

There's no secret recipe —  
just beef brains and moldy cheese.

There are few summertime chores George Schlecty enjoys more than sinking his burly forearms elbow-deep into a ripening 5-gallon bucket of beef brains and moldy cheese scraps. The concoction, which Schlecty calls Wowee, is his unpatented catfish dipbait.

Wowee is composed of equal parts of beef brains and cheese scraps that have been fermenting under a hot sun for 10-14 days.

Here's Schlecty's recipe for Wowee:

First, decide how much of the dipbait you want to make. Whatever the amount, mix equal portions of beef brains and cheese scraps. Knead the ingredients. "It's kind of like getting pancake batter smooth," Schlecty says. "I just take my fingers, get in there and get all goeey." Let the mixture stand all day in the sun, then bring it in at night.

"I'd hate to have an old tomcat get in my bait at night," Schlecty reasons. "You'd hate to have the stuff strung out all over the lawn in the morning. That's when a grown man *would* cry."

Repeat the process for the next 10-14 days, stirring Wowee at least once each day. Schlecty stirs the mixture with a 1x2 stick. The daily mixing is required because Wowee rises like bread. The bait must be worked down each day so it can rise again the next. Your batch of Wowee is "done" when it stops rising.

And don't think the Wowee is ruined when you see flies laying eggs in your bucket. "You need flies to lay eggs (in the Wowee)," Schlecty says. "Those little devils don't eat too much. You think you've smothered them all (after you've turned them under), but there they are again."

Generally 10 days is enough time to ferment the mix of beef brains and cheese scraps. It may take as long as

two weeks, however, if rain or cloudy days put a temporary halt to the fermentation. When the bait has fully ripened, Schlecty stores his baits in wide-mouthed peanut butter jars. And he never screws the lids back on tightly. "If there is any gas in there, I want it to escape. I don't want it blowing up on me," he says. The bait is then stored beneath the Schlecty home, where it will not freeze during the winter.

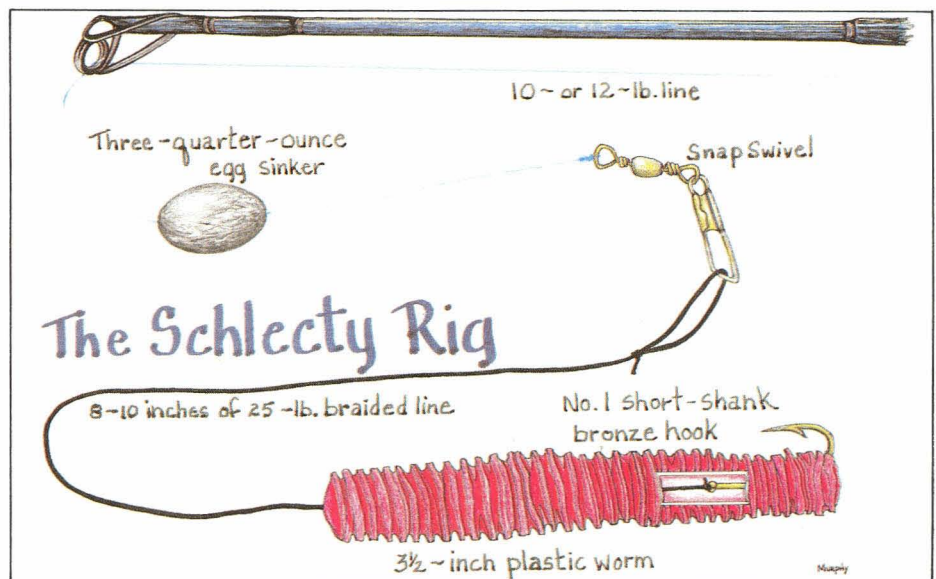
To use Wowee, merely dip a short plastic worm (3½ inches is about right) into the dipbait. Schlecty uses homemade worms that have raised ridges, similar to those on the old Rebel Ringworm. He's found the ridges hold Wowee better than smooth worms do.

Wowee may become a little soupy after a wet plastic worm has been continually dunked into it. To correct this, stir the mixture. If it's still soupy, add a little corn starch, flour or an egg to return the bait to its original consistency.

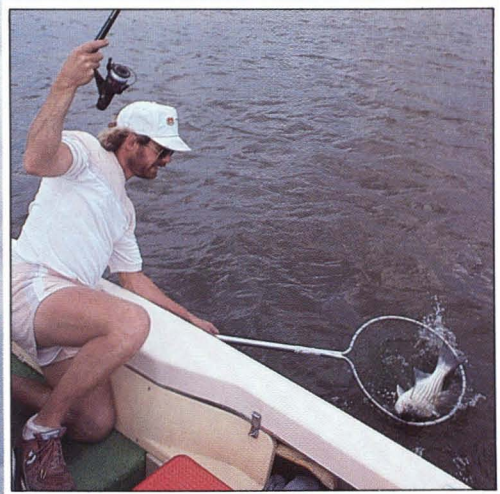
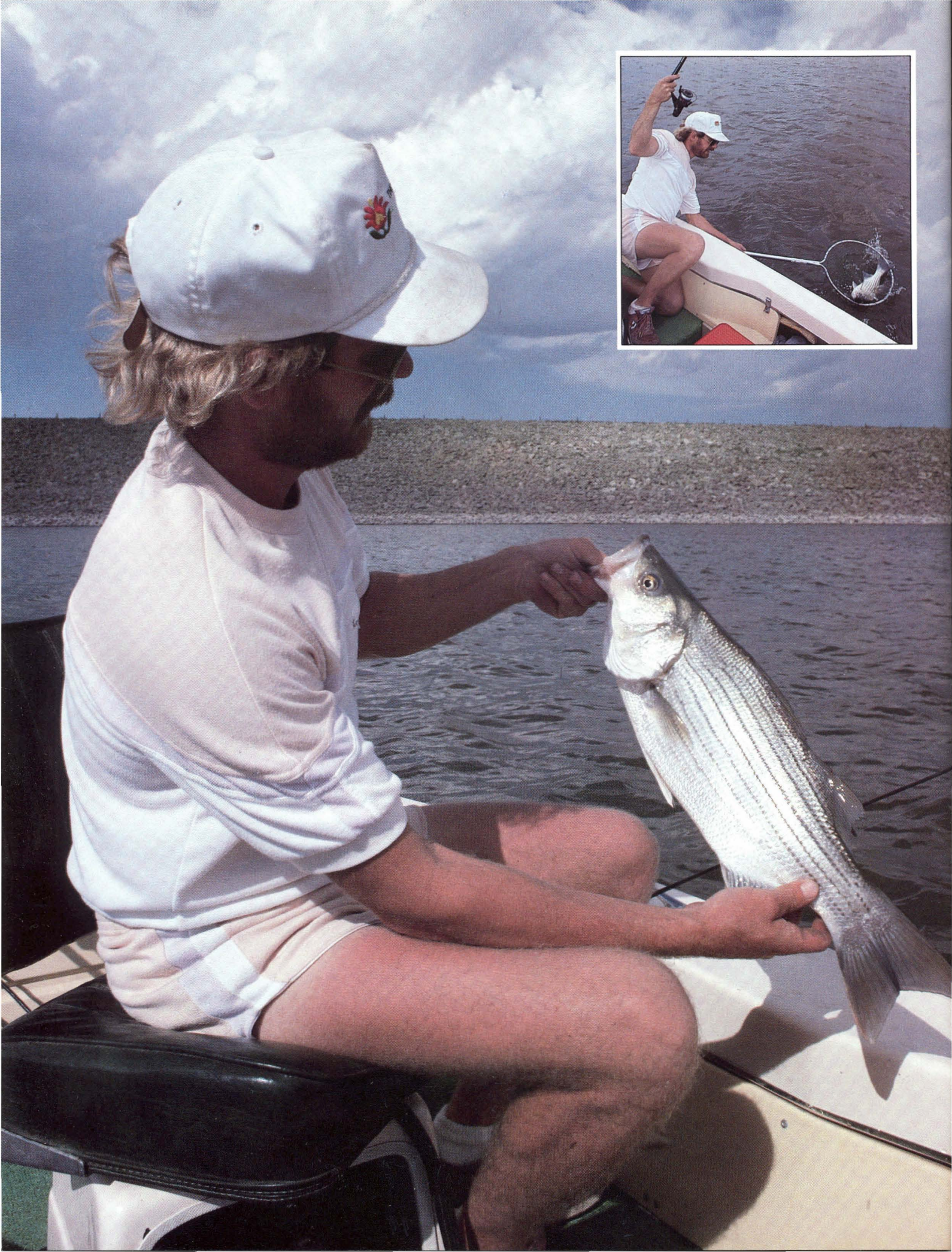
## WHEN TO ADD MORE WOWEE:

- 1) If you've waited fruitlessly for a strike for about 30 minutes, reel in your worm and apply a new coating of Wowee.
- 2) If you've set the hook but missed the catfish, let the bait settle to the bottom. Don't move it for another 5-10 minutes. No takers after that time? Reel in and re-bait. — Paul Koenig

This rig is the vehicle for Schlecty's Wowee dipbait. When properly coated, the worm can't be seen.



Patti Murphy illustration



# Deal Of The Decade

Ten years after the first stocking of wipers in Kansas waters, a fisheries biologist evaluates this hard-fighting hybrid.

by Steve Price  
*District Fisheries Biologist  
Stockton*

photos by Mike Blair

The year was 1977. Kansas biologists were awaiting the arrival of an exciting new fisheries prospect. To fill a particular niche in some of our aquatic ecosystems, we were looking for a voracious, open-water predator capable of feeding on a wide size-range of large gizzard shad. Ideally, this would be a sportfish that grows rapidly, attains trophy-size status, is fairly easy to catch yet possesses superior fighting ability. A tough bill to fill? You bet.

We had high expectations. Here was a dynamic new hybrid barely a decade into existence, already showing impressive potential throughout the nation. The wiper is a 10-year Kansas resident now, and it's time to take stock. Has this fish lived up to its reputation? Let's look closer at the history and development of this amazing man-made fisheries resource.

The wiper (cross between a male white bass and a female striped bass) was first produced in South Carolina in 1965. Robert E. Stevens led the experiment with assistance from R. David Bishop. Roe from a striped bass was fertilized with white bass milt. The eggs were cultured using the Bishop Method. This method, originally developed for culture of pure-strain stripers, employs a circulation tank to keep the eggs suspended and moving during incubation. One of the reasons for the system's success is its ability to mimic the wild habitat (miles of fast-flowing headwater) required for natural striped bass reproduction.

Since then biologists have produced

the reciprocal cross as well. Many state fish and game agencies have initiated hybrid striper programs with the wiper by far the most common of the two crosses. This year marks the 10th anniversary of the Kansas wiper program. Originally most of our fry were obtained from other states — Virginia, South Carolina and Texas. Then in 1980 we began producing our own hybrids using broodfish collected from Kansas reservoirs.

Wiper culture techniques are progressing, but there are still some bugs in the program. One problem involves the timing of gonadal development for broodfish. White bass males attain top spawning condition in April. Striped bass females, although unable to spawn successfully in Kansas, usually reach peak ovarian development around mid-May. By then healthy, fertile male whites can be hard to find. One possible solution involves a process called cryo-preservation, through which sperm is stored for future use. Kansas culturists used this method successfully in the 1986 walleye operation and are now working out the details for white bass.

Another problem stems from the nature of the striper. Although this fish is a tough adversary in open water, it is quick to succumb to stress if removed from the natural environment. Female brooders must be netted, transported to the hatchery and held until ripe. Their extreme sensitivity to stress makes this a difficult task. One factor is in our favor, though. Biologists can afford to be selective. Since a single 20-pound female can yield as many as 2 million eggs, only the best specimens are retained for egg stripping.

Even if eggs are successfully collected and fertilized, there is no guar-

antee of a final product. The 1986 wiper production year is a case in point. Approximately 1.7 million eggs were successfully fertilized but died during development, and by then the opportunity for collecting ripe broodfish had passed. Consequently most of the 1986 wiper stocking requests were left unfilled.

These are problems, fortunately, that can be reckoned with. Kansas has the resources to produce this fish and can do so relatively inexpensively. Wiper production costs tend to run slightly higher than those for walleye. Both fish, however, are a darn good buy for the money. Since those first introductions at Sebelius (formerly Norton Reservoir) and Marion reservoirs in 1977, wiper stocking programs have expanded rapidly in Kansas. In 1986 management biologists requested this fish for 26 impoundments. The wiper was the fourth most-frequently requested fish for stocking last year, following largemouth bass, walleye and channel catfish.

Because the demand for stockable fish often exceeds the supply, stocking requests are prioritized each year. Stocking efforts have not been equally successful throughout the state, and waters where plantings have worked well in the past tend to head the list. Why does it work well for some lakes but not so well for others? The key is recruitment, or good survival of stocked fish to harvestable sizes.

Wipers are usually stocked at the fry or fingerling stage. Occasionally they

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Bill Klein nets a keeper wiper, inset, then admires the aggressive sportfish.

# Kansas Wipers: Where To Go

## Sebelius Reservoir

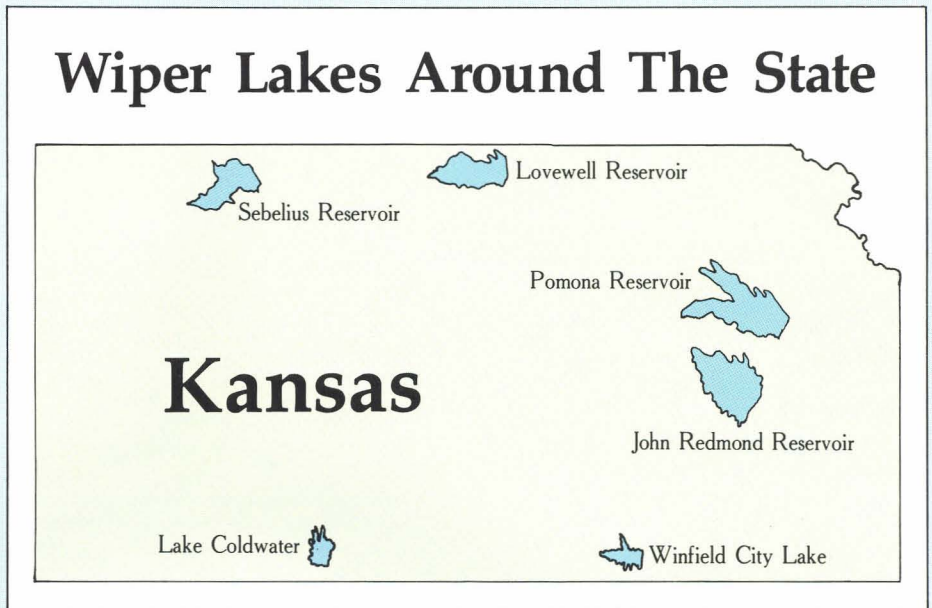
Stockings occurred in 1977, 1980, 1981, 1982, 1983, 1984 and 1985. Fry were stocked each of these years except during 1977, when fingerlings got the call. Creel survey data collected in 1985 document a three-month spring wiper harvest of 14.1 pounds per acre. Catch rates for adult hybrids in gill nets were amazingly high in 1986, indicating this population is probably the densest in the state. Several record-class fish were sampled last fall, and there is a good chance the state record (11.56 pounds, Sebelius Reservoir, June 1985) will fall this year.

Crappie fishermen begin making incidental catches of wipers soon after ice-out. During April, casting spoons and shad-bodied jigs are a good bet along the dam and flooded brush. The fishing peaks in May and June. Trolling is the most productive technique. Shad Raps and other deep-divers work well, particularly near the river channel in the lower half of the lake. Drifting the points with live sunfish can be very good for large fish during the peak of the season.

Surface feeding frenzies provide flashes of excellent fishing in the summertime, but mostly it's slow. Worms and catfish baits occasionally produce a hybrid. Fall fishing can be good. If water clarity exceeds 14 inches and weather conditions are right, drifting the river channel and points with jigs and worms or stillfishing worms and other live baits can be productive on into November. Although icefishermen have yet to tap the Sebelius wiper fishery, expect this action to break open soon.

There is a tremendous supply of 1982 year-class fish averaging 4½ to 6½ pounds, and a fair supply of smaller and larger fish to help keep things

are raised to larger sizes before releasing. Fry stocking is more meticulous than fingerling stocking but is less expensive. Fry are easier to get, too. Four to five days after hatching, the yoke sac, a built-in portable food supply that provides nutrition during development of the mouth parts, nears depletion. Zooplankton become a required food at this stage. Fry must either be



Map shows approximate locations of six Kansas lakes with good wiper populations.

hopping. Unless turbidity interferes, look for an exceptional 1987 season.

## Lake Coldwater

Fry were stocked in 1981, 1982, 1983, 1984 and 1985. Creel data collected in 1985 document an eight-month wiper harvest of 13.8 pounds per acre. The 1986 gill-net samples revealed a very strong 1985 year-class and a fair supply of older fish.

Wiper fishing peaks early with close to 90 percent of the harvest occurring in March, April and May. The best fishing is found along the old roadbed in the upper end. Stillfishing worms, crayfish and liver is most productive. Artificial baits also fool wipers. Fishing then tapers in June. Trolling, drift-

stocked or transferred to hatchery ponds where zooplankton are available.

Within weeks of their stocking, the young fish begin feeding on aquatic insects and invertebrates to supplement their zooplankton diet. While improved energetics is a benefit of eating larger organisms (less energy burned seeking out food, more energy

ing and casting the deeper water near the dam produce modest activity in the summertime. Wipers move back up the lake during the fall and concentrate along the roadbed. Jigs and spoons are top fall baits at Lake Coldwater.

Wiper fishing here is expected to be very good in 1987. An abundance of fish in the 1- to 2-pound range should provide plenty of action. Fair numbers of larger wipers will supplement the creel.

## Lovewell Reservoir

Wipers were stocked in 1978, 1980, 1981, 1982, 1984 and 1985. All were fingerling stockings with the exception of 1985 (fry). Creel data collected in

channeled into growth), there is a trade-off. By spending additional time in the shallows, young wipers grow increasingly vulnerable to predation. One advantage of stocking at fingerling size is that it allows the biologist to bypass part of this stage, thereby reducing the effects of predation on recruitment.

A third critical stage of recruitment

1985 show an eight-month wiper harvest of 1.8 pounds per acre. Adult wipers did not occur in the 1986 gill-net sample. Wipers can be hard to find at Lovewell Reservoir during certain times of the season.

Trollers take some fish on large plugs near the dam in May and June. The release of water for irrigation in July and August tends to draw hybrids to the outlet structure. Twistertail jigs and live or dead shad produce well at this time, particularly during early morning. In the fall, water is diverted from the Republican River to refill the reservoir. Whenever there is an inflow, big jigs are a good bet at the mouth of the inflow canal. Modest numbers of wipers have been taken through the ice.

The Lovewell population is dominated by 3- to 4-pound fish. Fishing should be good during periods of inflow and outflow in 1987.

### Winfield City Lake

Wiper fingerlings were stocked in 1981, 1982 and 1984. Harvest data are

not yet available. The 1986 wiper gill-net sampling was ineffective due to high-water conditions.

Wipers begin turning up in the creel in April, when deep-diving plugs work well along rocky shorelines. The old roadbed is a top spot during May and June. Trolling and drifting both produce. Fishing slows during the dog days but picks up in late summer and early fall. Drifting jigs tipped with worms and minnows is most effective then.

Wiper fishing should be good in 1987. A big 1982 year-class (6- to 7-pound average) and a good 1984 year-class (2-pound average) currently support this fishery.

### Pomona Reservoir

Wiper fry were stocked in 1981, 1982, 1983, 1984 and 1985. Creel data collected in 1986 document a March-July wiper harvest of less than one pound per acre. This estimate, however, is probably conservative due to the difficulty in sampling boat fishermen at Pomona. Good numbers of

1985 year-class fish and fair numbers of older individuals were present in the 1986 gill-net sample.

Slab spoons fished near the river channel in 15-30 feet of water produced moderate numbers of large wipers during February and March. If inflow conditions are right, wipers and white bass run the river in April. Jigs and Beetlespins are top river-run baits at Pomona. Working slab spoons on the flats near structure is productive during late April and early May. The wipers scatter in late May and become hard to find. Summertime action is slow except during surface-feeding frenzies. In the fall, slab spoons and jigs are effective on the flats and along the river channel in 15-30 feet of water. Wipers are also taken from Pomona Reservoir's tailwaters.

The 1987 fishing season is likely to be the best one yet for Pomona wiper anglers. Good numbers of 1½- to 3-pound fish and fair numbers of larger individuals are expected to make it happen this year.

### John Redmond Reservoir

Wipers were stocked in 1983, 1984 and 1985. This program uses an on-site rearing pond. Fry are stocked in the pond in May, held until reservoir flow-through diminishes and then are released at lengths of 2-4 inches in July. Gill-net sampling was not conducted in 1985 or 1986 due to flood-water conditions.

Peak wiper harvest occurs during the white bass spawning run. Casting jigs and stillfishing worms in the river during April produces a mixed bag of white and wipers. With the exception of drawdown periods, wipers are hard to find here prior to and after the spring run. Casting jigs can be effective along the dam in the fall if the lake is at low pool. Wipers are taken from the tailwaters throughout the season, but spring and fall fishing are best. Fishing is expected to be good in the river this spring. The 1983 year-class wipers are running 3½ pounds and better. — *Steve Price*



Live bait may be the most productive offering for wipers, but these hard-fighting sportfish also will hit crankbaits and jig-and-grub combinations, shown above.

begins at one to two months of age. This is when the young predators follow that instinctive urge and begin conversion to a fish diet. They actively seek out small preyfish, usually young-of-the-year gizzard shad. If shad are available in sizes small enough for young-of-the-year wipers to use, growth will accelerate and the prospects for survival are enhanced. If,

however, the young shad grow too rapidly (a common problem of Midwestern impoundments) young wipers may be forced to subsist on an inadequate food supply. Growth slows and the odds for survival to age 1 are reduced. The key is to get them past that first year, after which they become feeding machines.

In a broader sense, it is the size and

quality of the niche that regulates recruitment. Since wipers, whites and stripers all occupy a common niche in open-water, offshore areas, space available for wipers is most abundant in lakes that contain neither parental species. And without competition from whites and stripers, a greater portion of the available food supply can be channeled into hybrid production. Unless

emigration is prevalent (exiting the impoundment via the river system), a good niche will generally give you good recruitment.

What about growth of Kansas wipers? Ron Marteney, a state fisheries biologist, summarized growth for 13 Kansas wiper populations in 1982. Ron found average lengths of 7½ inches at the end of the first growing season, 12 inches at the end of the second year and 15½ inches after three years of growth. Not exceptional, but not bad. Southern states show much faster rates of growth, but life spans are short, generally five to six years. The jury is still out on the average lifespan of Kansas wipers. Monitoring early 1980 year-classes throughout the next few years will tell the story.

Just as the success of wiper stockings has varied among Kansas impoundments, so has the development of wiper sportfisheries. Satisfactory recruitment doesn't necessarily guarantee an immediate fishery. First, the angler must learn where to find these fish, and then, through trial and error, discover how to catch them.

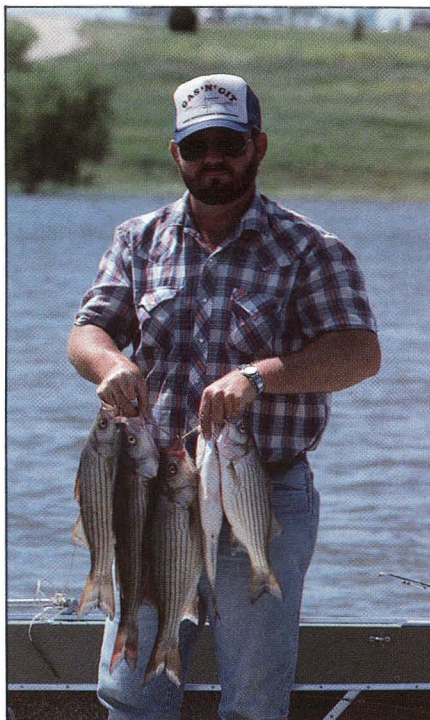
One of the initial breakthroughs happened at Sebelius Reservoir in 1980. Wipers stocked in 1977 were averaging close to 3 pounds by the fall of 1980, but up to that point catch rates had been marginal. Local anglers finally broke the ice by using live crayfish near the dam. Individual tallies for some anglers reached as high as 100 hybrids that fall.

During the spring of 1982, trollers began to connect using spinnerbaits and crankbaits. In 1983 Bill Klein, an avid fisherman and local resident, found that casting large, shad-bodied jigs off the dam was a good bet for big fish, particularly in April. Bill has held the state record twice, the second time by topping his own record set one week earlier.

By 1985 the Sebelius fishery had really turned on. Wipers accounted for 52 percent of the total sportfish harvest by weight in April, May and June of that year. The wiper harvest exceeded four tons that spring. The hybrid was the most sought-after fish in June and followed a close second behind crappie in May. A comparison of the 1985 creel data with 1980 creel data shows a 350 percent increase in fishing pressure and a 460 percent increase in overall gamefish harvest. Fishing has improved at Sebelius during the last

five years, and the wiper has played a leading role in the rally. Other Kansas wiper fisheries have come on at varying paces. On some lakes, hybrids are often caught along with white bass. Sometimes, however, the hybrid bass go unnoticed.

Wipers resemble both parental species, especially during the early years of life. One method of identification involves a process of elimination. First, examine the toothpatch found near the center of the tongue. White bass possess a single patch that's heart-shaped or rounded, often with a line scribed down the middle but



Word is beginning to spread about the wiper's fighting ability. This fisherman can attest to that.

never clearly separated. Striped bass and hybrids have two separate, elongated patches divided by a space nearly equal to or greater than the width of a single patch. This method should allow you to determine whether your fish is a white bass.

A body-depth to body-length ratio can be used to distinguish hybrids (wipers) from stripers. Measure the fork length (distance from the fork of the tail to the tip of the snout) and the body depth at its deepest point. Then divide length by depth. Values greater than 4.0 are indicative of the striper; lesser values are common for the wiper.

To date, the Kansas Fish and Game Commission has introduced wipers in 32 Kansas impoundments. Through experimental stocking and follow-up evaluation, we are expanding the list of waters capable of providing wiper fisheries. Initially biologists concentrated on reservoir ecosystems. Now experimentation with small-lake wiper management is allowing the program to expand. Lake Coldwater, a shadholding, 250-acre county lake in southwest Kansas, is one of the early small-lake success stories. This fry stocking program began in 1981. The 1985 creel data showing an eight-month wiper harvest totaling nearly 1.75 tons. Biologists are introducing wipers in a number of small, shadholding lake systems across the state.

In many of our smaller impoundments, sunfish comprise the bulk of the prey supply. Is there a niche for wipers within a sunfish system? An investigation was initiated at Chase State Lake in 1986 to examine this question. Wipers have been introduced and their use of small crappie as prey, as well as the wiper's growth and survival, will be monitored for the next several years. Positive results could open yet another avenue of wiper management.

Other ongoing research may improve the traditional reservoir program. Kansas State University, in cooperation with the Fish & Game Commission, is implanting sonar tags and tracking hybrids throughout the seasons. This work could yield valuable information for large reservoirs or wherever anglers have trouble finding fish. Several separate, ongoing investigations of gizzard shad dynamics should give insight providing better food supplies for young wipers and other predators. The fishing can only get better as biologists learn more about establishing wipers and anglers learn more about catching them.

OK, time to own up. Is the wiper a voracious, open-water predator capable of using larger shad? You bet. Does it have the ability to attain trophy-size status? No doubt about it. And superior fighting ability? To answer that one, you need only to consider the parentage — the white bass, a scrappy fighter with lightning quickness and enough body depth to generate rod-bending resistance simply by cutting sideways through the water; and the striper, a straightforward running fish that depends on sheer power and speed to fight its battles.

Cross them and you get a dynamo. Now that's what I call filling the bill.





# the center section

Edited by Mike Miller

## LETTERS

### SAVE THE RIVERS

Editor:

I enjoy canoeing on the South Fork of the Cottonwood River. I have read lately of the flood control dams being planned for its tributaries. The reasons cited were for farmland flooding and low-water bridges restricting school buses, etc. I wonder if the money needed to construct these dams could be better spent on roads and bridges. The farmland that is being flooded possibly should not be tilled in the first place. There are fields between Bazaar and the South Fork's confluence with the Cottonwood that have corn and milo stalks falling into the river. Maybe some of the funds for construction could go to the landowners to set aside these areas that flood, thereby reducing erosion and providing habitat for wildlife. With grain prices so low and farmland prices going down, it seems like a terrible time to ruin a stream that was noted in the top 20 in the state by Fish and Game. We have also been looking forward to seeing some of the river otters that have been introduced to this special stream. How will they fair with these restrictions?

Dave Markowitz  
Emporia

### FISHING TIP

Editor:

D.E. Lacey of Abilene was quite a fisherman, and he taught me a trick that has saved many a jig and small lure. When fishing from a boat and you hang up in brush or on the bottom, move the boat directly over the snag. Squeeze on a pinch-on sinker just tight enough so that it slides on the line. Hold the line between you and the snag tight, and let the sinker slide down. Many times the impact of the falling sinker will knock the jig loose. If not, lightly pop the rod a few times. In some cases a second sinker is needed.

We use a DO-IT pinch-on sinker mold and very soft lead (to make the sinkers) so that the sinkers can be used over and over again. The five-eighths-ounce sinker is best.

Larry Riat  
Abilene

### DISAGREEMENT

Editor:

I enjoyed reading the article on coyote calling in the January/February issue of KANSAS WILDLIFE. I found most of the facts pretty well correct according to my past experience. However, I strongly disagree with the writer's statement that a coyote is as dumb as a box of rocks when it comes in to a predator call. That couldn't be further from the truth.

I have hunted coyotes all my life and never did I see one act dumb. They do sometimes come in to a call very easily and may even stand directly in front of me. But this is not because they are dumb.

When a coyote responds to a call he is concentrating 100 percent on his hunger. Coyotes must earn what they eat. All its life that sound has been made by something that the coyote could eat. He distinguishes man when he is standing or walking, not sitting or lying. But one thing is for sure — coyotes are fast learners. If they escape from this situation, they will not get into it again.

Above the article was a poetic statement that a coyote could see as well as an eagle and hear as well as a deer. I again disagree. I have known eagles to spot me from tremendous distances away, even when I am hidden and not moving an eyelid. As for coyotes, they have excellent eyesight. But if I am hidden in the weeds and not moving, they usually do not detect me. Coyotes have excellent hearing, but a deer will pick up a slight noise quicker than a coyote.

Brock Baker  
Peabody

Dear Mr. Baker:

I'm sure we all cannot agree on every aspect of coyote calling or any topic for that matter. We all have our own opinions. As for your disagreement with my calling a coyote "as dumb as a box of rocks," I might explain that it is simply a figure of speech. Perhaps more adequate synonyms would be "easy, unconcerned, comfortable or unconstrained." Perhaps no coyote is actually dumb but some, especially younger pups, are surely not as smart as older, more educated adults.

As for the poetic statement, you must have read it a bit differently than I. It does not say that a coyote can smell, hear or see any better or as well as the bear, the deer or the eagle. It simply indicates that those senses that are most acute in those individual species are all acute in the coyote.

It appears we have only a slight difference of opinion, and I hope this explains my point of view. We are all entitled to that. *Tommie A. Berger, district fisheries biologist*

### HAPPY ARCHER

Editor:

Thanks for your interesting article "The Big Bucks of Kansas." The 1986 bow season proved very successful for me. I shot a 12-point whitetail, which has a green (rough) score of 144-146. I was wondering how the buck fits into the Kansas records. I was also wondering if there is an official scorer in my area.

I enjoy very much your magazine and outstanding pictures of our state. I would also like to commend your Ellis County game protector Mel Madorin for his assistance in trailing my buck.

Morris Crisler  
Wamego

Dear Mr. Crisler:

A quick look through our Kansas deer records reveals a typical (archery) buck that scored 146 Boone and Crockett points would score in the upper third of the more than 300 typical archery bucks we have on file. As for the nearest scorer in your area, please see the January/February issue of KANSAS WILDLIFE. The listing can be found on Page 40. *Paul Koenig, editor*

## GILL NET CONCERN

Editor:

Just a note to tell you I enjoy your wildlife magazine very much. Your magazine has excellent articles, and the photography is excellent. Your section on law is very good — letting sportsmen know something is being done to enforce the laws.

Would you please print an article on what has happened and what is being done by the law on illegal gill net fishing on Marion Reservoir? I understand this has happened several times at Marion and has had poor effect on sportfishing.

My knowledge of this is hearsay and an article in KANSAS WILDLIFE may help dispose of any misunderstanding that exists in the community.

M.O. Foster  
Rose Hill

Dear Mr. Foster:

As you've probably already read, an update on the Marion Reservoir gill netting violation appeared on Page 18 of the January/February issue of KANSAS WILDLIFE. To find out about the effects of the gill netting on the sport fishery, I talked with the lake's fisheries biologist, Ron Marteney. Marteney said he didn't think the poachers caught enough fish to have an effect. The law enforcement effort caught the violators before they had done any noticeable damage. In fact, according to Marteney's fall tests, the white bass and crappie fishing looks very good this year. *Miller*

## WHERE'S THE JACKS?

Editor:

I wish to join many other Kansans in complimentary expressions for your fine sportsmen's publication.

My comments pertain to the Center Section article, "Winter Cottontails," (January/February). The article covered the hunting of rabbits with bow and arrow and ended with specified limits. There is no limit on jack rabbits. Who has seen a jack rabbit lately? I haven't. I can remember the slaughter of jacks by the truckload on coyote drives and also seeing pictures of drives where jacks were clubbed to death.

I am not aware to the degree of sparceness that an animal has to attain to be declared en-

dangered, but it would appear to me as being close on jack rabbits. I submit that we reverse the laws pertaining to jacks and crows. I counted over a dozen crows recently in my backyard, and it's only an area of about 250 square feet.

Orville L. Paige  
Wichita

Dear Mr. Paige:

**Jack rabbits still exist in good numbers in western Kansas. But even there, they are not nearly as abundant as they once were. The primary reason for their low number is not over-exploitation, but rather habitat loss and degradation. Jack rabbits need large expanses of good native grasslands and that commodity is becoming more scarce as time goes by.** *Bill Hlavachick, species management supervisor*

## 16-GA. STEEL SHELLS?

Editor:

I own two 16-gauge shotguns. All I can find for steel shot is 12- and 10-gauge. The 10-gauge cost is \$20-\$27 a box. The price for 12-gauge is around \$15 a box.

As a hunter and sportsman, I feel that any laws on hunting are made to help wildlife and support wildlife. I also own a 12-gauge. I am worried that since they are no longer making 16-gauge shotguns, 16-gauge shells are not being made in steel shot. I have checked around and so far have not found any. I have two sons and would like to pass on the guns I own to them. If steel shot is to be used for all hunting, what are the owners of 16-gauge shotguns going to do? I have shells in lead for the gauges I own, also steel for the 12-gauge.

Charles E. Randles  
Kansas City

Dear Mr. Randles:

I contacted Tom Roster, a nationally known shotshell consultant, and he was not encouraging. He said that the market for 16-gauge shotshells was so small that it was not worth the cost for companies to produce steel shot in that gauge. Roster said that it would be several years, if ever, before 16-gauge steel shotshells are available.

The only encouraging note that I can give you is that the plan for steel shot regulations is directed toward waterfowl

hunting. When the implementation is final it will affect only waterfowl hunting statewide. The only areas that are designated steel shot for all shotgun hunting are the waterfowl management areas. *Miller*

## OFFENDED

Editor:

Since subscribing to your magnificent magazine a year or two ago, I have hardly missed a single word of any issue. The quality was very good and has improved markedly.

I found the last issue offensive, however, vis-a-vis the article on calling predators into close range for the sheer gratification of killing these handsome creatures. Please don't get me wrong! I am an ardent shooter and hunter, and if a coyote got near my chicken pen, I would soon have a coyote hide for sale. However, if it isn't suitable to be served on my dining table, I don't put my sights on it in the first place. I realize that this is just my opinion. But what sort of emotional make-up does it take to derive pleasure from destroying these gifts of nature just to watch them die? What difference is there between calling in and killing a bobcat, and shooting a dozen cardinals?

Dick Walker  
Lawrence

Dear Mr. Walker:

Sir, you indicate that you are a shooter and hunter and that you would "soon have a coyote hide for sale" if it got close to your chicken pen. Perhaps you overlooked the part of my article that spoke of selling the fur. I know of very few hunters or trappers who "destroy these gifts of nature just to watch them die." If they do, they surely cannot call themselves sportsmen.

Bobcats, foxes and coyotes are all considered game animals in Kansas. As are deer, turkeys and antelope. They are a managed and harvestable resource . . . is there any difference between a bobcat and rooster pheasant or wood duck drake when it comes to color and beauty?

A bobcat is a game animal — a cardinal is not. The bobcat is afforded a hunting and trapping season — a cardinal is not. A bobcat hide can be sold to a licensed dealer — a cardinal cannot. The cardinal is protected year round — the bobcat is not! These are the basic differences between shooting a bobcat and shooting a dozen cardinals. *Tommie A. Berger*

# THE LAW

## HIGH-SPEED CHASE

Three San Juan Pueblo, N.M., residents were arrested by a New Mexico Game and Fish conservation officer after a high-speed chase. When he finally stopped the vehicle, the officer found three deer and an illegal firearm.

The conservation officer saw the vehicle leaving a canyon, and when he tried to stop it the vehicle fled. The ensuing chase reached speeds of 85 miles per hour on an icy highway. When the suspect made a U-turn, the officer managed to stop the vehicle.

During a pat-down search, the officer found a concealed .22 revolver on one of the suspects. In the vehicle he found a sawed-off .22 rifle, a violation of the Bureau of Alcohol, Tobacco and Firearms regulations. The officer also confiscated a .30-06 rifle, which may have been used to kill the deer.

The three suspects in the vehicle were charged with three counts of illegal killing of deer, three counts of illegal possession of deer and one count of spotlighting. Charges of wreckless driving and evading an officer are being filed against the driver.

The case illustrates the danger all conservation officers may face. They confront criminals who are likely armed and usually in remote areas. Their job is vital to modern wildlife management and they deserve the sportmen's support and help. *New Mexico Department of Game and Fish*

## FALSE ARCHER

Wildlife conservation officer Val Haworth of Ellsworth received an anonymous call from a KANSAS WILDLIFE reader last fall. The caller had read the article on The Law pages about forensics testing, which involves chemical treatment of tissues around a wound. The test tells officers if lead is present. The caller suspected a man had shot a deer with a rifle and put his archery tag on it. After reading the article, the caller wanted Haworth to use the test and ticket the man.

At the time she received the call, Haworth was led to believe that the deer had been dead only a few days. When she questioned the suspect, however, she found that the deer had been dead 2½ weeks. This rendered the forensics test useless. But Haworth had confidence in her source, so she continued to question the man. The man finally gave in and admitted he was guilty. He was charged with shooting a deer with a firearm under an archery permit.

*Miller*

## MISREPRESENTATION

During the 1986 firearms deer season, wildlife conservation officer (WCO) Lynn Thompson of Bellville received an anonymous tip through Operation Game Thief (OGT). The caller said that a Texas resident was hunting deer on a Kansas permit. The caller even told where the Texas man was staying.

Thompson decided to watch the residence until the man made a mistake. On the fourth day of surveillance Thompson watched the Texan open the garage and saw a deer hanging inside.

Thompson approached the man to question him about the deer. The man said he shot the deer, so Thompson asked to see his hunting license. As the man flipped through his billfold Thompson saw what he thought was a Texas driver's license. But when the man produced a Kansas resident hunting license, Thompson asked to see his driver's license. Then the man took out a current Kansas driver's license. Before Thompson left he noticed a vehicle in the garage with Texas license plates.

Thompson ran a check on the tag number and learned that the vehicle belonged to the man at the house but that he lived in Ft. Worth, Texas. Thompson did more homework and found that for the past five years the man had hunted under a resident hunting license and had received deer permits. When he came to Kansas he stayed with relatives in Bellville.

The statute of limitations let Thompson charge the man for misrepresentation to buy a hunting license in 1985 and 1986. He also charged the man with illegal possession of a deer. The Kansas Highway Patrol charged the man for having two driver's licenses. He pleaded guilty and posted \$2,400 bond. *Miller*

## DEER THIEVES

Kevin Couillard, wildlife conservation officer from Augusta, received a rash of poaching calls in December. Several of the reports were apparently about deer poached for their antlers. In one instance, a large buck's carcass was found with just the antlers and hind quarters cut off.

Then on Dec. 5, Couillard investigated a case where a man bought a license but couldn't adhere to all of the regulations. The butcher at a Mulvane locker plant called Couillard to tell him he'd received a rifle-killed deer with an archery tag on it. The butcher had found a lead bullet embedded in the animal's shoulder.

Couillard questioned the man who brought the deer in, and the man confessed to shooting the deer with a gun. The man said he had first hit the deer with an arrow, but the shot had only wounded the big buck. Fearing he would lose the animal, the man returned to the area with a rifle and shot the deer as it ran across the field. Couillard said that the arrow wound was not visible on the carcass. The man said the wound was low on the deer's leg.

The man was charged with hunting deer illegally. Couillard picked up the head and cape at the local taxidermy shop where the man was to have the head mounted. That will be one trophy-sized head he won't be able to display.

Later in the month, on Dec. 28, two prairie chicken hunters called OGT to report seeing a deer fall dead in a field. The two hunters said that while they were hunting they heard some noise in the trees. They watched a huge buck stumble into the stubblefield they were hunting and fall dead. Then they saw two men follow after the deer. When Couillard arrived the four men were standing over the dead deer. The second pair said they were returning from cutting wood when they saw the big buck run across the road. Noticing that the deer was having trouble running, they followed after to investigate. The two woodcutters did not have a rifle.

Couillard guessed that someone had shot the deer with a rifle just minutes before the four men saw the buck. The deer had two wounds, one through the shoulder and one through the chest, hitting both lungs. While the deer was able to run some distance, it wouldn't have lived long after the fatal wounds. Couillard hid in the area for several hours hoping the poachers would retrieve the animal, but they never showed. The deer had a tremendous 12-point typical set of antlers.

The Operation Game Thief hotline didn't result in capturing the criminal this time but it might the next. You can help stop poachers by calling Operation Game Thief, 1-800-228-4263, to report any wildlife-related violations. *Miller*

## MISTAKEN IDENTITY

In an unfortunate incident, wildlife conservation officer Steve Stackhouse was called to investigate the accidental killing of an elk on Dec. 9. As the story unfolded, however, it turned out to be the demise of three elk — elk that had been released at the Ft. Riley military base last year.

A Junction City woman came to Stackhouse's home to report that she had wounded a cow elk on the Milford Wildlife Management Area. She was deer hunting when what she thought was a herd of deer passed within 50 yards of her stand. Raising her .30-30 scoped rifle, she fired at the lead animal. Seeing no evidence of a hit, she fired at the second animal. Again, she thought she missed and spotted a third animal. Since this was a much larger animal, she assumed it to be a buck and fired at it. She hit it twice, and the animal went down. After following a blood trail, she found a wounded cow elk.

Stackhouse went to the area and examined the elk. It had a badly damaged leg. He called a veterinarian to ask if the animal could be saved. The veterinarian recommended destroying the animal. The Ft. Riley Fish and Wildlife office agreed, and the cow was killed and processed.

While Stackhouse was taking care of the cow elk, the woman and her hunting partners returned to her stand to see if she had hit the first "deer" she'd shot at. To their horror they found two more dead elk — a cow and a calf. Again they contacted Stackhouse.

Stackhouse charged the woman with three counts of illegally taking elk. At the Jan. 13 trial the woman pleaded guilty to one count. The judge fined her \$1,000 and six months in jail. This fine and sentence were suspended, however, with several conditions. First and foremost she must replace five elk to the Ft. Riley reservation. This number was reached because the cows killed may have produced calves in the herd this spring. The woman was placed on probation for 18 months. Her hunting privileges were suspended for two years, and she must re-attend a Kansas Hunter Safety course. She also must serve 100 hours of community service. Stackhouse said the service will be directed to community conservation events — National Hunting and Fishing Day, Kansas Wildlife Heritage Month and hunter safety clinics.

The three elk were processed and the meat divided three ways among the Geary and Riley county sportsman groups and the Ft. Riley Fish and Wildlife office. These groups were instrumental in getting the elk to Ft. Riley.

On a positive note, Stackhouse believes that publicity generated during the case has made the public more aware of the elk herd. He hopes that this will prevent similar events in the future. Also, providing for the restitution of the animals sets a precedent. Replacing illegally taken animals has a direct effect on a resource that otherwise may have been left damaged.

*Miller*

## EARLY OPENER

Bunker Hill wildlife conservation officer (WCO) Rob Ladner got a call the evening of Dec. 3. A foreman for a ranch northwest of Russell reported hearing some shooting while he was feeding cattle. Checking out the noise, the foreman found two men sitting in a parked vehicle with the lights off. When the foreman asked about the shooting, the passenger in the vehicle mumbled something about sighting in their rifles on deer. The foreman took their tag number, noted their description and called Ladner.

After getting the information, Ladner called Ellsworth WCO Val Haworth, who was working in the area. The WCOs tracked down the owner of the vehicle and were also able to identify the second suspect. Both of the Russell men were interviewed, and one confessed to shooting a deer.

The next day Ladner and the ranch foreman returned to the crime scene and found a dead deer and evidence that incriminated the second individual. Both men were charged with hunting deer during closed season. They pleaded guilty in Russell County District Court and were fined \$278 each. They also had their hunting privileges revoked for one year.

Ladner noted that, ironically, one of the men had a deer permit and would have been legal if he'd only waited three more days. *Miller*

## CHRISTMAS EVE VIGIL

At 7:30 p.m. on Dec. 24, Augusta wildlife conservation officer (WCO) Kevin Couillard got a call from the Butler County dispatcher. A landowner reported seeing spotlighters on his land. Assisted by Butler County sheriff's officers, Couillard went to the landowner's residence. The man had heard shots, saw a vehicle with two suspects and had even found spent rifle cartridges. Couillard, thinking the suspects might return, hid in the area.

At 11:45 p.m. Couillard saw a spotlight. He approached the vehicle and noticed the passenger trying to hide a rifle. The two men,

who claimed to be sighting in a new rifle by shooting at coyotes, offered to let Couillard look in the trunk of the car. There he found a tarp covered with blood. The two acted as surprised as Couillard but refused to tell him where the blood came from. Couillard charged the men with hunting with the aid of an artificial light and for not possessing a hunting license. Since the two wouldn't tell him about the blood in the trunk, they were taken to the Butler County Jail. After bond was posted Couillard was finally able to return home. He arrived at 6:30 a.m., just in time to open Christmas presents with his family.

Couillard sent in a sample of the blood on the tarp for lab analysis. It turned out to be coyote blood, not deer blood as he suspected. If the two men would have just admitted that it was coyote blood, all three would have been home much earlier. *Miller*

## REWARD OFFERED

The Geary and Riley county fish and game associations, the Kansas Wildlife Federation and concerned sportsmen are offering a \$1,000 reward. The reward will be paid for information leading to convictions of persons taking elk illegally in the Ft. Riley-Geary County area.

Twelve elk were released on the area last year. Three were killed by a deer hunter accidentally last fall. The sportsmen's organizations, who were instrumental in getting the elk released in the area, are taking a stand against any illegal poaching of the elk.

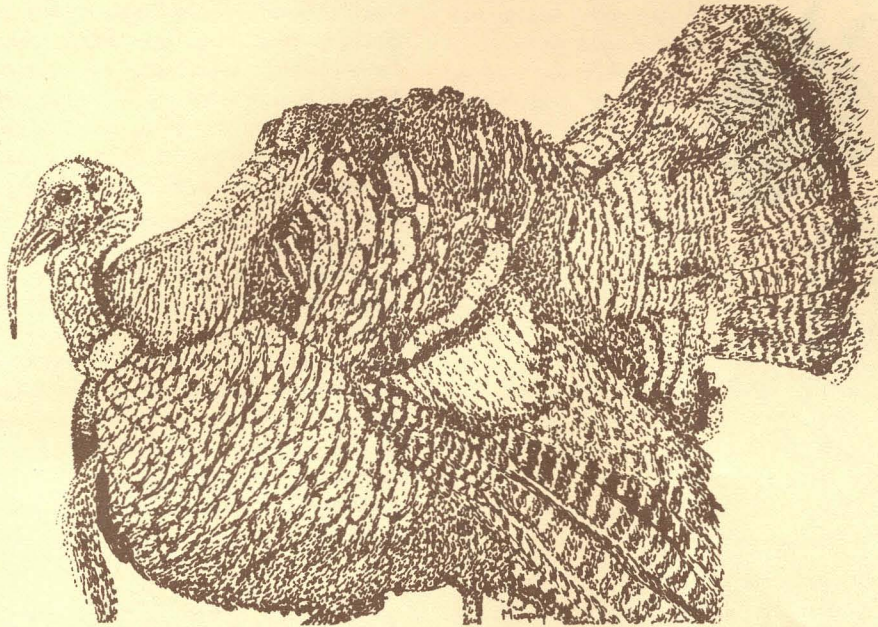
Anyone having information should contact wildlife conservation officer Steve Stackhouse through the Geary County sheriff's office, (913) 762-2323. *Steve Stackhouse, wildlife conservation officer*

## STIFF FINE

The New Mexico version of Operation Game Thief has resulted in the conviction of an elk poacher. New Mexico courts don't take poaching lightly, and the suspect had to dig deep into his pockets.

A phone tip sent New Mexico wildlife officers to the scene of a recently killed bull elk. It looked as if someone had left the scene soon after starting to skin the animal. The officers waited nearby. Soon two men arrived and finished skinning the elk. One was charged with shooting from the highway and illegally killing an elk. He was fined \$100 for the first charge and \$1,000 (the minimum fine) for illegally killing the elk. The judge suspended \$500 of the fine. *New Mexico Department of Game and Fish*

# HUNTING



## TURKEY TALK

Now's the time for serious turkey hunters to start talking turkey. The 1987 spring gobbler season opens April 15 and runs through May 3. Turkey hunters should start preparing now.

You'll probably get some strange looks from family and friends when you start huffing on a diaphragm call or stroking a box call. Those first calls of the year never sound quite right. That's why you should get them out of your system now, before the season opens. Practice daily so that when you put that diaphragm in your mouth or pick up that box call, turkey yelps are second nature.

It's been a year since you last heard real turkeys call, so you may want to listen to an instructional tape. This will refresh your memory on sound and, more importantly, cadence and timing. Mimic the tape's turkey sounds and rehearse your calling sequence.

Other preseason duties also need your attention. Get out your camouflage clothing and look it over. Replace camo that's faded or worn. When camouflage fades, the worn threads turn white. This will stand out in green foliage. Locate your face mask and gloves. These aren't accessories for turkey hunting, they're necessities. Many turkey hunters also camouflage their guns, which may have shiny spots after pheasant season ends. Touch up these spots with removable spray paint or camouflage tape.

Preparation for a season is all part of the fun. Practicing calls and getting equipment ready builds excitement and makes for a more successful hunt. *Miller*

## TURKEY FORECAST

It's only been 20 years since the first Rio Grande turkeys were reintroduced into Kansas, and the turkey population has grown dramatically since those first stockings. The wild turkey proved to be much more adaptable than was originally thought. The big bird inhabits nearly every county in the state today.

In the early stages of the reintroduction program, biologists estimated that the statewide population might reach 7,500. To the biologists' and sportsmen's delight, the Kansas turkey population may be ten times that original estimate.

Not surprisingly, the future of the state's wild turkey population looks bright. That's good news for the growing number of Kansas turkey hunters. According to wildlife biologist Terry Funk, turkeys experienced the best production year ever in 1986. "From my personal observations and others in the field, I'd estimate that hens averaged six poults each last spring. That's up from an average 2.4 poults per hen in the past," Funk said.

That means there will be lots of young toms this spring. But if you're after a trophy-sized

gobbler, Kansas is the place to hunt. In the 1986 spring season only 11.5 percent of the turkeys harvested were subadult toms. This data shows that most of the turkeys harvested are big, mature toms. Hunters enjoyed a 43.9 percent success rate in 1986, and Funk predicts an even better harvest in 1987. "I'll be real disappointed if the success rate isn't over 50 percent this spring. Hunting conditions were poor last year, and hunters still did reasonably well," he said.

Funk says that turkeys did well last spring because of the mild winter. When birds come through the winter in good shape, the hatch is more successful. A mild spring provided for an early insect hatch, which fed the young turkeys. Add good cover conditions (so turkeys can hide from predators) and you end up with lots of turkeys. The woods should be filled with gobblers this spring. And there's nothing more promising to a spring turkey hunter than that first silence-shattering gobble on a spring morning. *Miller*

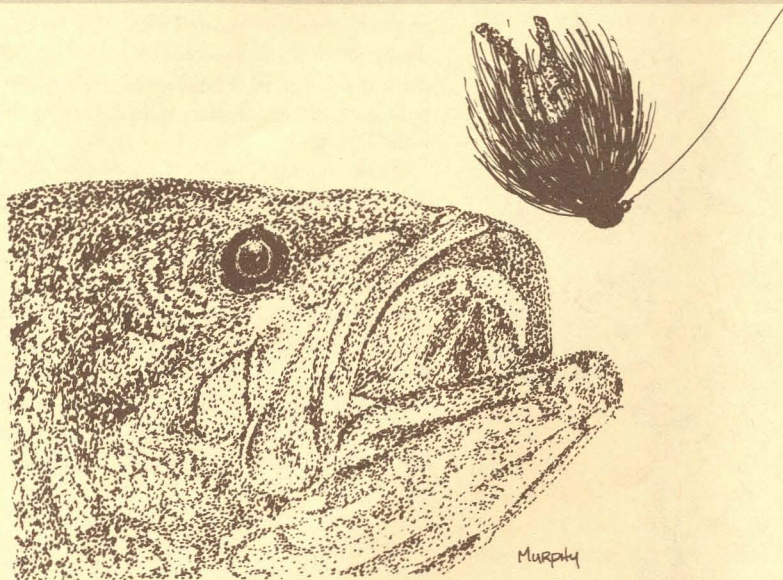
## HUNTING ACCIDENTS

A total of 31 hunting-related firearm accidents were recorded in Kansas during 1986. Two of those involved fatalities. The total number represents a decrease of seven (18 percent) from 1985, and is the lowest in 13 years. The 10-year average number of hunting-related firearm accidents is 45, and the five-year average is 42.

The first nine days of the 1986 pheasant and quail season accounted for 32 percent of the accidents, and 61 percent of the accidents involved upland bird hunters. Shotguns were involved in 90 percent of the shootings. The victim was either not visible to the shooter or placed in the line of fire (shooter's aim followed moving game) in 32 percent of the reported accidents. Only five accidents occurred at ranges of more than 50 yards; 84 percent occurred at closer ranges. This emphasizes the importance of blaze orange clothing in preventing hunting casualties. Only three of those injured during 1986 were wearing high-visibility clothing.

The average age of the shooters involved in hunting accidents during 1986 was 30 years. The average victim was 33 years old. Seven of the reported hunter casualties were self-inflicted. Fourteen of the shooters involved had received hunter education. The reports came from all regions of the state, including 25 counties. No county was the source of more than two accidents. *Rob Manes, education coordinator*

# FISHING



## JIG-AND-PIG NOW

When March finally arrives, fishermen are more than ready. Winter seems like an eternity by the time February is over. But March can be a frustrating month. One day may be calm and 70 degrees, and the next it may snow. Fishermen itching to get on the water can get discouraged waiting for the weather to cooperate. Rather than sit home and mope, start fishing and keep two things in mind: Bass can be caught during the cold weather, and early spring is the best time to catch really BIG bass.

Ideally, spring weather hits with a stretch of several warm days. If this should happen, a sudden rise in water temperature can trigger tremendous bass fishing. More than likely, though, the weather will stay warm for only a day or two before another cold front passes through. The bass just begin to move into the shallower water, and the cold weather pushes them back to the deep. When this happens head for the thickest submerged cover on the lake.

Largemouth bass seem to feel secure in thick cover. They aren't active at this time and eat very little. These facts keep many fishermen off the water; they think the fish aren't "biting." You won't catch fish on crankbaits or quickly retrieved spinnerbaits. But if you drop a big, slow-falling lure right in front of their noses they will hit it.

The lure for this type of fishing is the jig-and-pig combination. The "jig" is a one-quarter- to five-eighths-ounce rubber-skirted bass jig. The "pig" is a chunk of pork rind

such as Uncle Josh's No. 11 pork frog. Professional bass fishermen have perfected its use. These fishermen are on the lake day after day, regardless of the weather. They have learned to use a jig-and-pig in thick cover. This deadly combo fools bass even when they're not supposed to be biting.

First, though, you must find fish. That can be difficult when they're in heavy cover. Graph recorders will help to find the brush but not necessarily find fish. Increase the odds of finding fish by only fishing brush in the right places. Look for creek channels next to shallow flats. Usually there will be brush along the edge of the channel. This cover in 15-25 feet of water next to a 5- to 10-foot-deep flat would be ideal. A bend in the creek channel or a submerged tree row intersecting the channel is even better.

When you've found a likely area with your graph or flasher, mark it with several buoys. This will help you systematically fish all of the cover. Remember, you want to put the jig in front of the fish. Flipping is one such method. A long, heavy-action rod and 15- to 20-pound-test line is desired equipment. Flipping lets you drop the jig straight down to the fish. Fish directly over the cover or right against trees. Strip several feet of line off the reel and swing the jig out to the desired spot, then release the line with your other hand. Keep some slack in the line so that the jig sinks straight into the brush. You'll have to watch the slack line closely, however. Bass may be suspended at 12 feet in 20 feet of water. If a big bass inhales your jig as it sinks by, there will be very little in-

dication of a strike. The line may twitch slightly, or you may simply notice that the lure quit sinking.

With some practice you'll learn to tell the difference between strikes and the lure bumping limbs. When you feel a fish, set the hook quickly. And hard. The long heavy-action rod comes in handy here. You need to raise the fish several feet on the initial hook-set, and try to keep the fish coming up. If the fish gets its head turned, you may break off in the brush. If you hook a big fish let it play itself out on the surface. Lead it away from the brush, and keep constant pressure on it there. Never try to play a big fish in the thick cover.

The key to flipping is perseverance. Keep flipping the jig and letting it sink over and over again. Try to sink the jig into the thickest cover you can find. If fishing flooded trees, flip the jig up against the trunks and let it slide down the trunk. Fish every inch of the cover.

You probably won't catch a live well full of fish on these cold days, but don't get discouraged. The fish that you do hook are likely to be big. *Miller*

## CATCH-AND-RELEASE

Catch-and-release is one way to get optimum recreational benefits from a fisheries resource. Satisfaction is gained not only in catching the fish but also in releasing it and knowing it will be there for another angler.

Electrofishing results at El Dorado Reservoir show that bass anglers are helping to maintain the quality of their sport. They are releasing many bass over the 15-inch minimum length limit as well as those under the limit.

Bass collected in the electrofishing were checked for obvious hook wounds. The information showed that El Dorado experiences heavy fishing pressure but that most anglers were observing the length-limit regulation. Largemouth bass greater than 12 inches long made up 62 percent of fish collected. Of those fish, 83 percent had hook marks. Fish over the length limit comprised 38 percent of the sample, and 94 percent of those fish had been caught and released. *Ron Marteney, district fisheries biologist*

## REEL DEAL

If you're in the market for a new fishing reel, you might want to look at Ryobi reels. Ryobi is offering to refund your annual resident fishing license cost if you buy one of their reels between March 14 and April 18. For more information contact Ryobi America Corporation or your nearest tackle dealer. *Miller*

## MAKING A POINT

It has been said that 10 percent of the fishermen catch 90 percent of the fish. Those 10 percent are successful because they pay attention to detail. They are meticulous about where they fish, the way they fish and the tackle they fish with. One detail that many less experienced fishermen overlook is sharp hooks.

Most fishermen take a hook out of the package, tie it on and start fishing. Some lure manufacturers do sell hooks that are finely honed, but many new hooks could use some work. Also, hooks that have been fished with will be dull. A dull point may be why many of us lose fish those 10 percent are catching.

Sharpening a hook is not as difficult as it might sound. It can be as simple as running a small file along the point a few times. Commercial hook hones make it even easier. The hand-held tools have a flat side and a grooved side. Run the point through the groove several strokes. Then with the flat side hit the inside of the point. With a diamond-edged hone it doesn't take many strokes to sharpen a hook. A good test is to lightly place the point on a fingernail. If it slides along the nail without scratching, it isn't sharp. If it digs in, you're ready to fish. *Miller*

## WHITE BASS RUN

April finds Kansas fishermen keeping a daily vigil on fishing conditions at local reservoirs. Anglers call bait shops, talk to other fishermen or drive out to the lake while they wait for the white bass to begin their spawning run.

A good white bass run is worth all the trouble and waiting. The scrappy fighters may weigh 3 pounds or more and will congregate in large numbers at the mouths of rivers. When the run starts, fishermen can wade deep holes and catch stringers full of white bass.

Ultralight tackle and 4- to 6-pound line is preferred. White, chartreuse and yellow one-sixteenth-ounce and one-eighth-ounce jigs probably catch most of the fish, though spinners and minnows will work. The hardest part of catching the fish is finding them.

When you've received reports that white bass are in the rivers, don't waste any time getting there. Things can change overnight. Grab a box full of jigs, waders, and your rod, then get to the river. Remember that a sand-bottom river may not have obvious holes in which to fish. You'll probably have to wade the river, sneaking up on bends or undercut banks. A

small hole only 3 feet deep might be loaded with fish.

Approach to within casting distance of the deep water. Moving in too close will only spook the fish. Cast the jig into the upper end of the pool and, keeping the slack out of the line, let the jig drift along with the current.

Don't get discouraged and move on after two or three casts. Keep casting, trying to drift your jig through every foot of the pool. There may be a small depression holding the fish, and if your jig doesn't drift through this deeper water you won't catch fish. Once you catch a fish, try to repeat the drift. There are times when it takes pinpoint casting to catch fish.

Drifting an eighth-ounce jig takes practice, but when mastered it is the most enjoyable way to catch whites. The jig should drift freely with the current, but you also want to keep contact with the jig. Hold your rod tip high, and only reel in enough line to keep slack out. Follow the drifting jig with your pole, keeping your body facing the jig at all times. You might want to try a slow jigging motion as the lure drifts. Strikes — and they are aggressive — are obvious if the line's tight. Vary the weight of the jig to water conditions. In deep, fast water use a heavier jig, a small jig in shallow water. The jig must move with the current but should be worked near the bottom.

If you've never caught river-run white bass, make a point to try this year. You'll never forget the first 2-pound white you catch in a fast-moving stream. The only problem with spring white bass fishing is that it can be extremely addictive. *Miller*

## MORE BASS FOR GLEN

There's good news for Glen Elder bass fishermen. The lake received several truckloads of largemouth bass last fall. A total of 21,655 intermediate-sized (5-10 inches) bass have been stocked in the reservoir.

The fish were kept in culture ponds longer than most stocked fish in order to boost their survival rate. As a reservoir ages it loses much of its shoreline cover. This results in fewer bass fry surviving each succeeding year. Fisheries biologists are interested in how much better these larger bass survive, so they clipped the pelvic fin on each of the more than 21,000 fish.

Electroshocking samples taken this spring will tell biologists how the bass fared. The ratio of stocked fish to native fish will also give officials a population estimate and an idea of stocking impact.

Stocking largemouths isn't the only way to

restore good bass fishing. Biologists also are improving the lake's underwater structure. Lily pads and cattail transplants have been successful. If the cover and stocking programs continue to go well, the natural reproduction of Glen Elder's bass should increase. *Miller*

## CRAPPIE HUNTING

March and April are prime months to catch crappie. When water temperatures reach into the 50s, the crappie begin to congregate in preparation for spawning. This time of year, when you find one crappie, you've found a whole school.

Fishing for early-spring crappie can be a lot like hunting quail. You keep searching out thick cover until you catch a fish. Then, as when finding a covey of quail, you keep working that general area. The cover these crappie will be in is similar to the cover you find quail in, only under water. Thick, submerged brush or weeds along the rivers or creeks that run into reservoirs are likely areas to find crappie.

Crappie will hold in deep cover during the early, cool days of spring. As the water warms, crappie will gradually move into more shallow waters. During the spawn the fish may be in 1 or 2 feet of water.

On your first trips to the lake, begin fishing in the upper ends of reservoirs. Stay near the river channels. Search out brush and brushpiles in 10-20 feet of water. It takes patience to catch these early crappie. The fish will be sluggish because of the cool temperatures, so work a jig slowly and deliberately. Strikes won't register on the Richter scale. In fact, a strike will feel more like a fly flew into your rod tip. A light-action graphite rod will help you detect more strikes, but the way you work the jig is more important. Work the jig slowly, jigging it up and letting it sink. Keep the slack out of the line, and watch it constantly. Set the hook if anything feels unusual. The strike may be nothing more than a slight drag. You'll lose plenty of jigs, but you'll also catch more fish by setting the hook at the slightest twitch.

Position your boat directly over the cover if you can. If you're fishing a single tree, gently tie the boat to the tree. This way you can fish vertically. Lower your jig into the limbs and jig it straight up and down. You won't snag up as often this way, and it's easier to keep your line tight fishing vertically. You can also move your jig very subtly, which is sometimes very effective in early spring.

Minnows also are an effective bait during early spring. To fish minnows in the deep brush, crimp a small splitshot on the line 15 inches above the minnow. *Miller*

# ISSUES

## PESTICIDE RESTRICTED

Use of the pesticide diazinon has been restricted because it has been found to kill wild birds under certain conditions. Last November the U.S. Environmental Protection Agency (EPA) issued orders prohibiting diazinon use on golf courses and sod farms, claiming that the applications constitute "unreasonable risks to birds."

According to the EPA, diazinon is a broad-spectrum pesticide widely used to control a variety of insects on agricultural and plant nursery sites, in commercial establishments such as restaurants, and around homes and gardens. An estimated 512,000 pounds are used annually on golf courses, and 60,000 pounds are applied to sod farms.

The EPA received reports of approximately 60 bird kills in 18 states where diazinon was confirmed or implicated as the cause. The kills involved 23 species of birds, including waterfowl, songbirds, shorebirds and wading birds. Most of the reported bird mortality was associated with large grassy sites, such as golf courses, where the birds like to feed. Exposure to the chemical occurs when birds feed on grass, its roots, grass seed or contaminated invertebrates. Birds also are believed to ingest diazinon granules directly.

New York reported one incident where 700 Atlantic brant died as a result of exposure to diazinon on a golf course.

The prohibition is not expected to significantly affect the management of golf courses or sod farms, since alternative insecticides are available. *Wildlife Management Institute*

## WILDLIFE & FARMING

A manager of a Missouri Department of Conservation demonstration farm has met with success. The 560-acre corn-and-bean farm was eroding up to 31 tons per acre of topsoil. In five years the manager reduced the erosion to four tons, increased wildlife and made the farm pay.

Not bad for a kid who didn't even grow up on a farm and who started out as a wildlife manager.

The goal was to show that wildlife can be a by-product and coexist with economical farming operations.

The farming methods used weren't revolutionary. Minimum tillage and no-till farming were used in the row-cropping operations. The main innovation was the use of warm-season grasses. And contour strip-cropping, or interspersing strips of grass and strips of row-crop along contour lines, was utilized. Contour strip-cropping was more economical, costing 7.5 cents per foot, compared to terracing at more than 60 cents per foot.

Not only do the grass strips cut erosion, but they also provide an edge vital to wildlife, especially quail and rabbits. The demo farm in Missouri has supported six to nine coveys of quail every year, despite heavy hunting pressure.

Contour strip-cropping is no more trouble than any other row cropping system. Income is not lost by taking land out of row crops with grass strips because of hay income. In 1985 the Missouri farm made more money haying the grass strips than on the grain strips. *Missouri Department of Conservation*

## WILDLIFE AID

Congress approved several important pieces of wildlife legislation before adjourning last fall. Even with most of the attention given to tax reform and budget deficit, some wildlife bills were signed by the president.

After four years on the congressional agenda, the Emergency Wetland Resources Act was passed by Congress in late October and signed by the president on Nov. 11. The statute will raise an additional \$25 million for wetland acquisition annually and make Land and Water Conservation Fund monies available to federal agencies for protecting waterfowl habitat.

The law extended the Wetland Loan Act, which permits the Fish and Wildlife Service to borrow from the general treasury to buy wetlands. It also eliminated the Loan Act's requirement that nearly \$200 million already borrowed be repaid with future federal duck

stamp receipts. That allows all future stamp money to be used for wetland protection.

The new statute will increase the price of federal duck stamps from \$7.50 each to \$15 each over five years and authorize entry fees at certain national wildlife refuges. Those extra funds will be used for wetland purchases.

The law transfers duties collected on imported sporting arms and ammunition from the Treasury into wetland acquisition, and it sets a timetable for the Fish and Wildlife Service to complete a national wetland inventory. It requires the interior secretary to conduct a study and report to Congress on the extent to which federal subsidies encourage wetland destruction. And it amended the Land and Water Conservation Fund Act to allow use of that \$900 million annual fund for wetland purchases that benefit waterfowl and other migratory birds. Previously, that fund had been available only for buying recreational land.

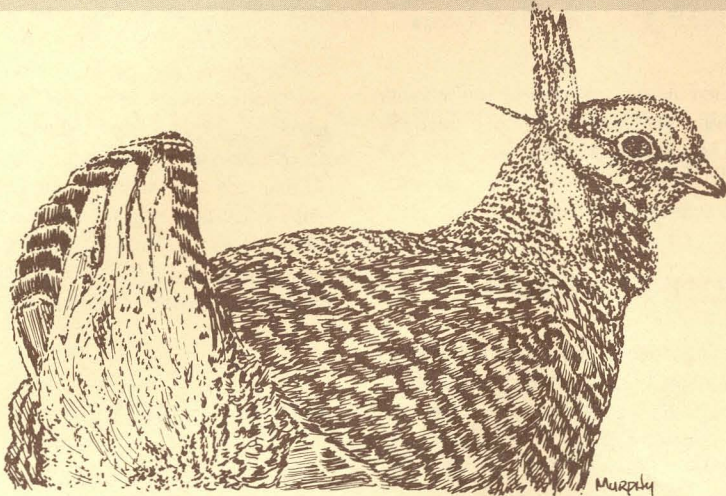
Finally, the new law requires states to revise recreation plans developed under the Land and Water Conservation Fund Act and include wetland acquisition as a component. And it amended that act to give states the option of buying wetlands as replacements for recreational lands lost to development.

Legislation was enacted to improve wildlife management and hunting on nearly 25 million acres of public land administered by the Defense Department (DOD). The Sikes Act, which governs conservation activities on military installations, was reauthorized with amendments added to give wildlife and hunting better standing on DOD lands. It now requires base commanders to make wildlife habitat improvement an integral part of resource management developed for military installations. It directs that qualified managers be used to integrate wildlife into each base's resource program. It also requires that net receipts from timber sales on the bases be used for wildlife management instead of going into the treasury, meaning that several million dollars will be added to wildlife conservation work each year. And the new act directs that sportsmen and other recreationists who enjoy wildlife be allowed access to DOD lands, as long as their activities don't interfere with military missions.

The Fish and Wildlife Conservation Act of 1980 (Nongame Act), which is intended to provide matching funds to state wildlife agencies for managing animals that are not hunted or trapped, was reauthorized in 1986. The act has never been funded, but congressional supporters agreed to the reauthorization so that conservationists could continue searching for a dependable source of money to implement the program. *Wildlife Management Institute*



# NATURE



## PRAIRIE BOOMERS

Each spring Kansas prairies play host to a unique ritual. The prairie chicken, one of the rarest gamebirds, gathers for its spring mating dance. On quiet mornings the booming or gobbling can be heard for a mile. If you're lucky enough to witness the exercise, you'll never forget it.

Much of the mystery of this event has been revealed by wildlife biologist Gerald Horak. Horak spent years observing prairie chickens and put his findings in a research book, *Kansas Prairie Chickens*.

Male chickens return to traditional areas, called booming grounds, in March and April. Some booming grounds have been used annually for 40 years. Each male prairie chicken establishes a territory on the ground. The imaginary boundaries are defended with visual and vocal displays, and aggressive battles are common in early spring.

Two species of prairie chickens live in Kansas. The greater is the more common and inhabits pasture land in the Flint Hills. The lesser prairie chicken lives in the sandhill pastures of southwest Kansas. The birds are similar in appearance although the lesser is slightly smaller. The greater makes a booming call, (hence the name booming grounds) while the lesser makes a "blooping" call referred to as a gobble. Both species have air sacs on their necks, which inflate to make the call. The greater's is yellow-orange and the lesser's is red-orange in color.

The ritual dance is quite a display. Pinnate feathers on the side of the neck are erected to form an elaborate collar. The inflated air sacs look like small, feather-trimmed balloons under

the neck. With tail fanned, wings extended downward and head pushed forward, the birds perform their strange dance. The dance consists of short spurts of tiny steps and rapid stamping of the feet. Between the surges of fancy footwork, the male emits a boom or gobble, followed by a laughing cackle.

If a bird infringes on another's territory, it will be met with an aggressive rush. The two birds square off with the imaginary line between them. Their heads are low, their beaks inches apart. The squabbles, however, usually end in a draw. The birds, satisfied that the area is protected, will continue displaying or rush to an opposite boundary to defend it.

The entire display is meant to do one thing — attract the ladies. The dominant bird will defend the territory in the center of the booming ground, usually located on a high point in the pasture. The calls and visual displays can be heard and seen from great distances. The booming and displaying become frantic whenever female prairie chickens are present.

If you plan to hunt turkeys this spring in southwestern Kansas or the Flint Hills, keep an ear out for the gobbling or booming. It will be like no sound you've heard. If you're within several hundred yards, focus your binoculars on the area. It won't be long before you see a prairie chicken flutter out of the grass as it defends against an aggressor.

If you want to view the ritual, ask farmers or Kansas Fish and Game personnel about the location of a booming ground. But don't disturb the birds if you're lucky enough to find such an area. Too much disturbance may inhibit the bird's activity, and they may even abandon the ground. *Miller*

## TURKEY TERMS

When a tom turkey wants to impress a hen, he puffs up and struts his stuff. The excitement changes the physical appearance of the tom's featherless head and neck. Blood rushes to skin appendages on the head and neck, and they change in shape and color. Spring turkey hunter's are amazed by the vivid colors they see on strutting toms.

Toms have a fleshy appendage on the forehead right above the beak called the snood. This inch-long appendage (in the relaxed state) looks like a wart. As the turkey begins its display, it shakes its head continuously, filling the snood with blood. The snood triples in length and drapes across the beak. The blood also turns the snood a bright red. The waddle, the loose skin under the neck, also turns a bright crimson as do the globs of skin on the lower neck, called caruncles. All this red contrasts sharply with the pale turquoise forehead. *Miller*

## SPRING MIGRATION

Duck hunters and birdwatchers alike should take time this spring to observe waterfowl. Spring provides a perfect opportunity to see many species of waterfowl as the birds migrate through the state.

Marshes and lakes will hold large numbers of ducks as they stop over to rest and feed. Not only will you see different species but you will also see them at their finest. The drakes of the species will be in colorful breeding plumage. Many species that migrate south in early fall are still in post-molt, drab plumage then. The contrast in the spring is striking. The blue-winged teal, for example, passes through Kansas during its fall migration in September and early October. Hunters and birders will see only a mottled brown duck with a blue shoulder patch. In the spring the bluewing drake is a beautiful slate gray with a striking white crescent in front of its eye. Another good example is the wood duck. Seldom very colorful on its fall migration, the wood duck is one of the most brightly colored ducks we see in the spring.

Another interesting attraction is the courtship ritual, when drakes compete for the attention of hens. There will usually be several drakes of one species fighting over and trying to impress one hen. This keeps the ducks moving, so you may view many different groups of birds from one blind.

Ideal areas to watch waterfowl in the spring are the Fish and Game-managed waterfowl marshes. They include: Cheyenne Bottoms, Jamestown, Marais des Cygnes, Texas Lake and Neosho wildlife areas. *Miller*

# NOTES

## FREE ARK. BROCHURES

The Arkansas Game and Fish Commission is offering two comprehensive hunting and fishing brochures free of charge. *Fish Arkansas! The Angler's Paradise* gives information about what fish species are found in each of the state and federal lakes, oxbows and other natural lakes and warm- and cool-water streams. The fishing guide also lists addresses and numbers of organizations that can provide more detailed information about fishing areas.

*Hunt Arkansas! The Sportsman's Land of Opportunity* describes the state's natural regions and offers tips on making the most of hunting opportunities on public and private land. Detailed information is given about which game animals are found on the Commission's more than 40 wildlife management areas and on federally owned lands as well. As in the fishing brochure, addresses and telephone numbers are listed for more information.

Single copies of the brochures are free. Write: Commission Information Office, No. 2 Natural Resources Dr., Little Rock, AR 72205. *Arkansas Game and Fish Commission*

## HUNTING FILMSTRIPS

The National Shooting Sports Foundation (NSSF) has produced three educational filmstrips showing how hunters benefit wildlife. By paying more than \$6 billion over the years, hunters have done more for our wildlife and wild places than any other group in the nation.

The NSSF is offering the filmstrip set, "Un-endangered Species," "Wildlife for Tomorrow" and "What They Say About Hunting," for \$19. "Un-endangered Species" explains how hunters, through payment of license fees and excise taxes, have funded and supported the remarkable resurgence of wildlife in this century. "Wildlife for Tomorrow" is based on the highly successful "Un-endangered Species" but is specifically directed toward younger students in the fourth, fifth and sixth grades. "What They Say About Hunting" takes a no-nonsense look at the entire hunting controversy, quoting representatives of 11 different conservation groups as well as individual wildlife experts. It is narrated by well-known sportscaster Pat Summerall.

If teachers are not 100 percent satisfied with the filmstrips, the NSSF will refund the \$19. For more information, write: NSSF, P.O. Box 1075, Riverside, CT 06878. *National Shooting Sports Foundation.*

## FERRET FUTURES

Wyoming Game and Fish Department biologists hope to successfully breed black-footed ferrets this spring. The ferrets were captured in the Meteese, Wyo., colony. Before that colony was discovered in 1981, the black-footed ferret was thought to be extinct.

When the colony was discovered, biologists estimated its population to be 128. Hoping to establish colonies elsewhere, biologists captured six of the ferrets. But the six died after contracting canine distemper. Biologists concluded that the disease existed in the wild population, so they trapped six more ferrets. These were successfully brought through quarantine at the University of Wyoming wildlife laboratory in Laramie.

The colony's population dropped significantly during the winter of 1985-1986. Only 15 ferrets were observed last summer. Fearing the ferrets wouldn't make it through another winter, biologists decided to capture the remaining ferrets for captive breeding. A total of 17 ferrets are now being held at the Sybille captive breeding facility. *Audubon Activist*

## MASTER ANGLER BBQ

The Kansas Fish and Game Commission and the Waconda (Glen Elder Reservoir) Lake Association will honor Kansas Master Anglers. The barbeque will take place at Waconda Lake on June 6. All anglers who have received Master Angler Awards or broke state records in 1986 will be invited.

The Fish and Game and the lake association will feed the anglers at the lake. There will also be tackle dealer displays, awards presented and many other activities for the anglers to enjoy.

The Master Angler Award program is sponsored by the Kansas Fish and Game. More information will be available when plans for the event become finalized. *Miller*

## D.U. WILDLIFE ART

The Greater Kansas City Chapter of Ducks Unlimited will sponsor the 15th annual National Wildlife Art Show. The show will be held at the Overland Park Expo and Convention Center March 19-20.

The show, one of the oldest and most prestigious in the country, will feature painter James Meger of Edina, Minn., and carver Steve Constable of Pittsburg, Kan. They and 80 other artists from around the United States will display their original artwork. Show proceeds go to the national Ducks Unlimited organization, dedicated to conserving wetland habitat for waterfowl and other wildlife. *Miller*

## OFFICE MOVES

The Kansas Fish and Game's Wichita district office has been moved to Valley Center. The Wichita office was located at 2700 N. Woodland in Wichita.

The Wichita staff, consisting of a fisheries biologist, a nongame biologist and a wildlife information representative, will join the current staff at the southcentral regional office at 8420 N. Broadway in Valley Center. The office is open weekdays from 8 a.m.-4:45 p.m. and can be contacted by writing P.O. Box 317, Valley Center, KS 67147, or by phone, (316) 755-2711. *Martha Daniels, wildlife information representative*

## CONSERVATION TREES

The Kansas State Extension foresters are again offering tree seedlings to Kansans for conservation plantings. The program has existed since 1957. That first year 2,300 Kansans ordered more than 600,000 trees. Now almost 7,000 Kansans order more than 1 million trees each year, according to William L. Loucks, extension forester at K-State.

County extension offices have 1987 order forms on hand. Buyers must indicate the conservation projects they will use the plants in. Projects include: woodlots, windbreaks, erosion control, wildlife habitat and Christmas tree plantations. Buyers are forbidden by law to use the trees for landscaping. A wide variety of seedlings are available at reduced prices.

For more information contact your nearest County Extension Office or William L. Loucks, 2610 Claflin Rd., Manhattan, KS 66502. Orders will be accepted through May 8, 1987. *Miller*

# NATURE'S NOTEBOOK

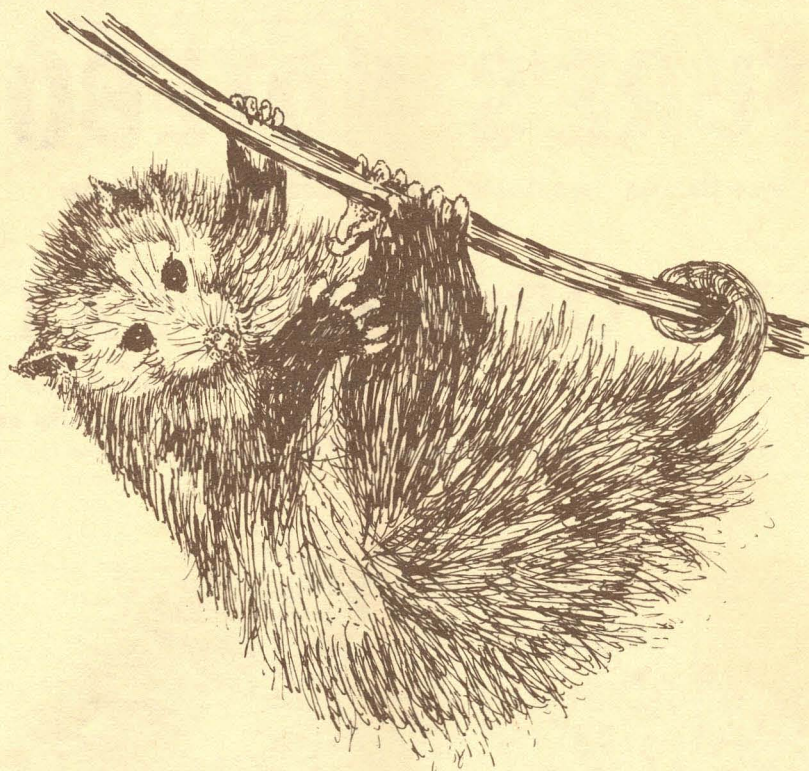
by Joyce Harmon Depenbusch Wildlife Education Coordinator

## ON THE OPOSSUM PATROL

What Kansas mammal has a pouch to carry its young, **prehensile** tail (adapted for grasping by wrapping around an object), five-clawed toes, hind feet with **opposable** thumbs that have flat nails instead of claws, a long white, hairless face, and is related to the kangaroo? The opossum.



The opossum is found statewide, but is more common in eastern Kansas. These animals prefer woodlands bordered by pasture and near water. They den in tree holes, rotten logs, or cliff cavities. Opossums eat nearly anything and everything. They'll eat any kind of **carrion**, or dead animals, invertebrates, small mammals and birds. They hunt frogs, tadpoles, crayfish, clams, and bird eggs. Because of their slow pace, predators can easily prey on them. Coyotes, bobcats, foxes and great-horned owls readily make a meal of opossums. Opossums respond to danger by "playing 'possum." They go into shock, remaining motionless until they no longer feel threatened. If they are lucky, enemies may leave thinking they're dead.



Considering the opossum is a relic from the dinosaur era (remaining unchanged from a million years ago) it is well adapted for the 20th century. The opossum's prehensile tail is used when climbing. It acts like a fifth limb, and if curled can carry nesting material. Opossum tracks are easy to spot due to their opposable thumb and wide spacing between their toes. The opposable thumb is like that of humans, allowing greater movement and flexibility.



Like the kangaroo, opossums are among the group of mammals called **mar-supials**, which carry their premature young in a pouch. The first litter is born in late February, each weighing an eighth of an ounce and about one-half inch long. They do not have external ears or eyes at birth. The three to 17 young crawl into their mother's pouch and attach themselves to one of the 12-13 nipples. If there are more young than nipples, some young die. After two months their eyes open and they let go of the nipple, but continue to nurse from the pouch. One hundred days after birth, they are on their own and leave the female. A second litter may be born in May or June.



Mike Blair photo

The American avocet, which thrives near wetlands, is a local summer resident found primarily in central and western Kansas.

# Wildlife Heritage Month

Back for a second year with a new theme, Kansas Wildlife Heritage Month is slated for March. Here's how to get with the program.

by Jan Garton  
*Manhattan*

**M**arch is the month we bid goodbye to winter, the month when sandhill cranes reclaim Nebraska's Platte River, when amphibian choruses shout through the night, oak leaves fall and Eastern moles mate.

March is also when we'll be celebrating our second Kansas Wildlife Heritage Month. Last year's inaugural celebration highlighted our state's wa-

terways. Its theme, "Rivers: Highways of Our Heritage," pointed out the importance of our rivers and streams to settlers and wildlife alike.

Kansas Wildlife Heritage Month is the brainchild of conservationists from several organizations. Discussions for the big celebration began in the fall of 1985. They wanted to make sure that the hoopla surrounding Kansas' 125th birthday did not neglect the value and

importance of wildlife to the state's character and development. This voluntary task force worked to increase the public's awareness of and appreciation for Kansas' wildlife and natural resources. Their approach: Plan a series of events during March.

Activities ranged from a statewide poster contest for sixth-graders (sponsored by the Kansas Wildlife Federation) to the development of a wildlife

reading list by the Kansas Library Association. This list would be distributed to all the public libraries in the state.

Gov. John Carlin signed a proclamation recognizing Kansas Wildlife Heritage Month and urged all Kansans to become involved in local activities. In mid-March he dedicated the MacLennan Natural Area on the grounds of Cedar Crest, the governor's mansion in Topeka. Several organizations will continue to enhance this educational resource over the next few years. Trail cutting began late last fall; so did the first stages of restoring the native tall-grass prairie. Organizers hope to officially open the trail no later than March 1988.

The theme of Kansas Wildlife Heritage Month 1987 is "Wetlands: Habitat Worth Saving." Celebrating the values of wetlands may seem strange for a state better known for its prairies and high plains country. That's unfortunate because wetlands are in trouble. In fact they're disappearing. The U.S. Fish and Wildlife Service estimates that nationwide 450,000 to 500,000 acres of wetland habitat are lost every year. Kansans lost 40 percent of our existing wetland acres during the 23 years from 1955 to 1978. The Environmental Protection Agency in 1978 estimated there were only 122,400 wetland acres in Kansas, and the wetland habitat has continued to shrink since then. That 1978 figure represents only about one-quarter of a percent of the state's total land area (52.6 million acres).

But don't bother calling in Scotland Yard; we know where those wetland acres are going. Nationally, conversion to agricultural use accounts for 87 percent of the lost acreage. Urban growth consumes most of the remaining wetland acres. The story is much the same in Kansas, although highway development and dewatering caused by groundwater depletion figure significantly in our state's loss.

The disappearance of vital habitat, the public's general lack of awareness about wetlands and legislative attention to wetland protection bills that will be introduced in 1987 led to the overwhelming approval of this year's theme. Kansas legislators will be learning the outcome of the 18-month feasibility study on the restoration of Cheyenne Bottoms near Great Bend. Also of importance is the status of the State Water Plan's Fish, Wildlife and Recreation section. Our concern will help secure protection for this critical habitat.

Maybe you're asking yourself, "Why all the fuss?" Wetlands are just breed-

ing grounds for mosquitoes, right? You can't ski on 'em, and besides, all kinds of slimy snakes and stuff live there. They're smelly, full of quicksand, a bother to plow around and clouded by unhealthy vapors at night, right?

Nope. Wrong. As a whole, U.S. wetlands are home to some 5,000 species of plants, 190 species of amphibians, and a third of all birds species in our country. More than 12 million ducks breed annually in U.S. wetlands, and millions more overwinter here. Thirty-five endangered and threatened species rely on wetland habitat. Wetland estuaries are critical to marine fisheries. More than half the marine sportfish caught in the U.S. depend on shallow coastal marshes. Two-thirds of the major commercial fish in the U.S. depend on estuaries and salt marshes for nursery or spawning grounds.

**B**esides the benefits to wildlife, wetlands are valuable in other ways. Wetlands slow flood waters, reducing the frequency and extent of downstream flooding. They trap pollutants in their sediments and convert toxic pollutants to less harmful substances both naturally and biochemically. Wetlands are instrumental in groundwater recharge and help stabilize riverbanks and streambeds.

Wetlands are a diverse breed of habitat. They can be red maple swamps or black spruce bogs, salt marshes, bottomland hardwood forests, prairie potholes, playa lakes (caused by heavy rains) or riparian wetlands. Farm ponds, deep-water lakes and reservoirs are *not* wetlands, though wetlands may be associated with them.

The Kansas Fish and Game Commission describes wetlands as: "... any area where standing water or wet soil conditions exist for a significant part of the growing season of most years. When surface water is present, depth generally does not exceed six feet. Vegetation is dominated by water-tolerant plants. Natural wetland plants include cattail, prairie cordgrass, smartweeds, horsetails, spikerush, arrowhead, bulrushes and sedges. On saline sites, alkali sacaton, inland saltgrass, and hardstem bulrush may be present. Natural wetlands occur as oxbows, rainwater basins, springy areas, and saline or fresh marshes."

Wetlands are wonderful, intricate, diverse ecological communities — the lifeblood of much of the world's wild-

life. Even though wetland acreage is a minute portion of our Kansas landscape, the variety and numbers of wildlife that acreage supports gives it value far beyond its size. It's like plunking down New York City's Manhattan Island in the middle of a dryland farm — the difference in relative real estate value is enormous. Why? On Manhattan Island, the area has been developed and populated to the hilt. Every square foot of space is used, sometimes several times over.

A wetland is much the same, except that its occupants are birds, mammals, insects, fish, amphibians, algae, invertebrates, grasses, sedges and flowers. Life is intense and competitive. Because of this competition, each species has gained a toehold in some part of the community where it succeeds better than any other. But when a wetland is gone, so is the wildlife associated with it.

We have one of the world's most important wetlands — Cheyenne Bottoms Wildlife Area — in our own backyard. Last fall, during their migration to the Texas coast, about 30 whooping cranes rested there overnight. That's 30 whoopers out of a global population hovering around 100! Our Kansas wetlands are vital to their long-term survival.

Cheyenne Bottoms also has been recognized by the International Shorebird Survey as possibly the most important wetland staging area in the Western Hemisphere. Survey researchers have found that 76 percent of all migrating shorebirds in the spring stop at just two sites in the U.S. — Cheyenne Bottoms and Delaware Bay on the New Jersey and Delaware coasts. More than 90 percent of the population of five shorebird species pass through Cheyenne Bottoms during migrations. Simply put, the death of Cheyenne Bottoms could be the death of several species of migratory birds.

Cheyenne Bottoms is not the only wetland in Kansas. Historically there were 12 large natural marshes located throughout central Kansas. Now only three of these are currently protected by state or federal ownership. The remaining nine have been eliminated or reduced to remnants by conversion to agriculture. Many smaller wetlands still exist on private land, although most are associated with riparian habitat.

A light is beginning to glow at the end of this dark tunnel. The balance between wetland destruction and wetland protection may be starting to swing in favor of protection. Congress in fiscal year 1985 appropriated



Millions of wetland-loving mallards winter in the United States. This flock found reason to stick around — a good supply of open water.

\$240,000 to the U.S. Fish and Wildlife Service to begin studying the impacts of federal programs on wetlands and the potential impacts and benefits of revising them. Federal construction of water projects — dams, channelization projects, ports and harbors, shoreline stabilization — have caused or contributed to the loss of millions of acres of wetlands. Of more concern to Kansans are the federal policies or assistance programs that encourage the conversion of wetlands. These policies and programs include tax incentives, agricultural commodity programs, disaster payments, crop insurance and Farmers Home Administration loans.

**T**he 1985 Farm Bill included a “swampbuster” provision, which denies eligibility for several federal subsidies to farmers who convert wetlands to annual crop production. Even more far-reaching is the Conservation Reserve Program (CRP), which removes highly erodible cropland from production. It requires farmers who volunteer for the program to convert their highly erodible cropland to permanent cover (trees or grass) by 1990 in exchange for cost-sharing payments. These payments go toward establishing permanent cover and are received as annual rental fees for keeping the land out of production. While the CRP is not aimed at wetland

protection, it may provide some side benefits for wetland survival.

Individual farmers also may be beginning to discover that enhancing a wetland or low area can be more profitable than draining it. As hunting areas decrease, good marshland can provide for a profitable agreement between landowners and sportsmen.


What we do to our wetlands is something of a referendum on our own values and understanding of the kind of lives we want to live. Is there truly room for other species on this planet? Are we wise enough to work toward a harmony of coexistence? Is the better world you leave your children one of automated appliances, integrated video systems, artificial intelligence, environmental degradation and wildlife preserved only in cages?

Would you like your kids to have natural space to explore, butterflies to catch, fresh air to breathe and clean water in which to dangle their feet? It won't happen by itself. We all have to make a choice, then act on it. A sage once put it nicely: “Not to decide is to decide.”

Participating in this year's Kansas Wildlife Heritage Month celebration is a starting point. The celebration is for everyone, not just conservationists. Taking the time to learn about wildlife in Kansas, especially wildlife associated with wetlands, is a gift you can give yourself or your family.

Here are some things you can do: If you belong to a conservation organization, make plans for some community activity — field trips, hikes, film festivals, books fairs, urban wildlife planting seminars, bird seed sales — and invite the public. Write a letter to the editor of this magazine. Tell him you support the goals of KWHM; put up birdfeeders for local classrooms, hospitals or nursing homes; donate money to a wildlife restoration project; ask your school board to make environmental education a part of the curriculum; visit a public wildlife area with friends and field guides. The list is endless.

If you want a comprehensive overview of Kansas organizations and opportunities, be in Topeka on March 18. There Kansas conservationists and associated businesses will set up displays and booths to get out the story on Kansas wetlands and wildlife habitat.

For more information about Kansas Wildlife Heritage Month 1987, contact this year's coordinators: Steve Sorensen, P.O. Box 489, Concordia, KS 66901, (913) 243-3857 or Maure Weigel, Rt. 1, Box 199, Tescott, KS 67484, (913) 283-4894. 

*The author was one of the coordinators who planned the first Kansas Wildlife Heritage Month in 1986.*





# Early Bloomers

Looking for a way to get over your cabin fever? Why not hunt for early spring wildflowers? Here's what I look for.

by Michael F. Mueller  
*Paola*

**W**ith the arrival of spring there is a master plan under way. The days are growing longer, the sun travels higher in the sky and the air becomes warmer. Early spring bloomers such as Dutchman's breeches, shooting star, May apple, spring beauties and wood sorrel, to name a few, add their colors to nature. Each spring wildflowers occupy a niche available only to those species that can live their life cycle before large competing species (trees and grasses) have time to crowd them out.

Kansas boasts a variety of spring flora. These plants range from the early bloomers under the deciduous forest's developing canopy to the prairie flora struggling to bloom in the midst of native grasses.

Many of us are looking for ways to satisfy our spring fever; why not hunt for early bloomers? To seek out these early spring survivors is to satisfy that overwintering need to get outdoors and experience nature. If enjoying spring wildflowers for the pure beauty is not enough in itself, remember that most plants of the modern prairie have been here since the last glacier period, which was at least 20,000 years ago.

Wildflowers are living evidence of historical competition among themselves. This competition often results



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At left, brilliant yellow puccoons and a spray of equally vivid spiderworts dot the prairie. Cat-claw sensitive brier, right, starts to bloom on the Kansas prairie in late spring.

Gene Brehm photo

in the elimination of a species. The modern prairie is a result of continuous change in response to environmental stresses such as glaciers, severe temperature, climate and fauna. For anything to achieve success so long deserves our attention and respect.

Kansas is blessed with the floral richness and diversity of two major biomes, or extensive communities of plants and animals whose makeup is determined by soil and climate. In Kansas these two communities are the deciduous forests to the east and grasslands to the west. Since these two large vegetation communities come together in Kansas, we have wildflowers specific to each biome. We also have those wildflower species such as the wild hyacinth and field pansy that have adapted to the eco-

tonal, or overlapping, areas of the two biomes. These wildflowers also can be found in either the prairies or open woodlands.

Wildflowers bloom early in the spring in the eastern Kansas deciduous forests and in prairie grasslands where moisture is sufficient to support wooded areas. These early bloomers take advantage of radiant energy reaching the forest floor before the canopy and understory levels of the forest can trap the sunlight. Wildflowers on the forest floor commonly display more colorful variations of shades of blues and reds, in comparison with the yellow wildflowers so predominant in the prairies.

Most of the wildflowers common in forests bloom in the spring. This time of year is also ideal for a walk in the

woods. The clear forest floor is free from the vegetative overgrowth that develops during summer.

**I** begin my hunt for spring bloomers in the woods in mid-March. A mature climax forest community of oak and hickory trees with rocky hillsides is the ideal place to start. Usually the first spring bloomers I find are members of the violet family. Brilliantly-colored yellow and purple violets add much-needed contrasting shades and hues to the dull, decomposing forest floor.

Nor are the whitish blossoms of the toothwort and false rue anemones tough to spot on the forest floor. The less colorful May apples and jack-in-the-pulpits also appear in spring. The unique shapes of the umbrella-like May apple and Preacher Jack's overhanging canopy make these wildflowers hard to forget. Mushroom hunters often use the presence of these wildflowers as an indication that morels should be ready to hunt.

Most often I find the Dutchman's breeches and dog-toothed violet on rocky hills and slopes in the forest. The cleverly named Dutchman's breeches, with its fernlike leaves, has flowers resembling breeches. I have found that one has to keep watching for these early spring bloomers so not to miss them, since they may complete their blooming in two weeks or less. If you don't find the shorter blooming plants of rock larkspur in the woods in April, then look for the taller blooming plants later in May.

Spring beauties are easy to find since they grow in open woods, prairies and meadows, and occasionally in city parks and lawns. Spring beauties are one of the most popular early spring bloomers. The Indians used the thick, rounded rootstalk for food. When boiled in salt water it has a chestnutlike flavor.

The grassland community flora also contains individuals with a similar early-bloomer strategy. When one thinks of the sun-drenched prairies, one thinks of grasses. Temperatures, precipitation, growing seasons and soils vary across the state. The grass-



Mike Blair photo

Columbine is found on the wooded hillsides and bluffs of eastern Kansas. This wildflower, which the Indians used as a love charm, is a popular food of hummingbirds and bees.



Gene Brehm photo

Dog-toothed violet is one of the earliest wildflowers to bloom each year. This species is found in the woodlands of eastern Kansas.

land community changes in response to these environmental conditions across Kansas, but the grasses always are the dominant vegetation.

Wildflowers are always present among those grasses and add much to the prairie's beauty. The prairie wildflowers are also attempting to complete their life cycle early in the growing season. These early bloomers can afford to grow lower to the ground during the early spring since they're getting a jump on the still dormant prairie grasses. This strategy is unlike that of sunflowers, gayfeathers and goldenrods later in summer. These plants grow tall and straight to compete with the taller grasses.

Although most of the true native prairies has fallen to the plow, the cow and the mower, there are still remnants of virgin prairies where native wildflowers can be observed. Modern man has taken pride in his ability to clean up the landscape and shave the roadsides. But there are idle strips along roadsides, cemeteries, railroad rights of ways, and some private lands that still produce evidence of the past. In these areas you'll find native flora along with interesting introduced plants. There are also areas along creeks, riverbanks and woodlands that can provide successful early-bloomer hunts. With the proper landowner's permission or by taking advantage of public areas that support wildflowers, you can become involved in spring wildflower outings.

Early spring bloomers in the prairies include delicate flowers such as yel-

low star grass and blue-eyed grass. Neither is actually a member of the grass family, but they're named so for their grasslike leaves.

Other dainty prairie wildflowers to look for are the bluebird's foot violet and woolly pussy toes. To find the blooming Carolina anemone, you need to hunt the prairie during midafternoon. The flowers remain closed until then. This wildflower is often found in diffuse colonies. Colors vary from white to pink to blue to violet. Look for the yellow lousewort with its fernlike leaves in the native prairies. If you're out in early spring, you may find the beautiful wine-red basal leaves of the lousewort before they turn green. The common name "lousewort" refers to the medieval belief that plants of this family were a remedy for lice.

Indian paintbrush is another spectacular prairie spring wildflower that should be on your list. This plant is found in southeast Kansas and gets its brilliant color from the orange or red bracts (modified leaves) that surround the inconspicuous greenish-yellow flowers. These wildflowers are only a sample of what you may find in a true native prairie during spring.

As we observe these early bloomers, we must remind ourselves that this chance to appreciate nature in its purest beauty is secondary benefit at best. For these early bloomers, colorful demonstrations are more importantly a necessary part of completing

their life cycle by attracting would-be pollinators. We're fortunate if we take the chance to pause from life's fast pace and observe this dynamic occurrence.

Naturalist Aldo Leopold once said: "There are some of us who can live without wild things, and some who cannot. Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher 'standard of living' is worth its cost in things natural, wild, and free. For us of the minority, the opportunity to see geese is more important than television, and the chance to find a pasque-flower is a right as inalienable as free speech."

If we don't come to know these wildflowers and retain them as an important part of our natural heritage, we'll lose sight of our place in the master plan. And if these wildflowers continue to disappear we will not see them leaving, for we cannot grieve or miss something we never knew. So get out there and hunt those early bloomers. Observe but do not disturb. And as they fade from the landscape, take heart, for you have the summer and fall flora coming your way.

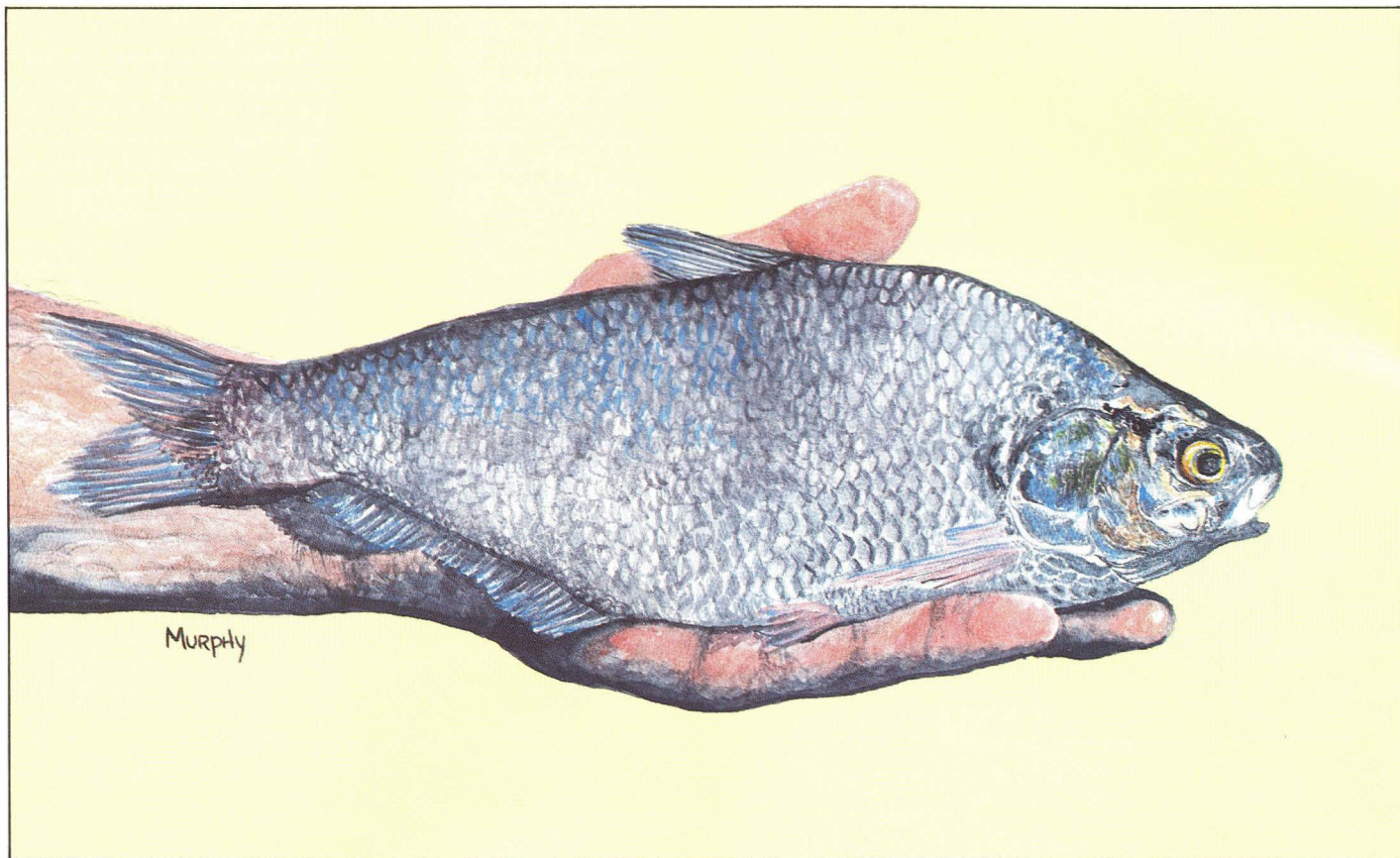


*Michael Mueller, an ardent hunter of spring wildflowers, is the membership committee chairman for the Kansas Wildflower Society.*

Downy Indian paintbrush is found on the rocky prairie hillsides of western Kansas.



Gene Brehm photo



Patti Murphy illustration

Walleye, white bass, white crappie, largemouth bass and striped bass all feed on gizzard shad, above, an important baitfish in Kansas reservoirs.

# Little Big Fish

Gizzard shad may be one of the most misunderstood fish to swim in freshwater. Let's shed some light on this little big fish.

by **David Willis**  
*Reservoir Fisheries Investigator  
Emporia*

**W**hen the topic of gizzard shad comes up in discussions with anglers, their opinions typically fall into three categories:

- 1) Some don't know what they are.
- 2) Some believe they are a problem fish.
- 3) Even fewer recognize the fish's importance. But one

thing is certain: Gizzard shad are an important preyfish in the large federal reservoirs in Kansas. Walleye, white bass, white crappie, largemouth bass, striped bass and other predators all feed on gizzard shad.

Prey species, which include gizzard shad, provide the food source for sportfish populations. Without prey of the

right sizes and numbers, healthy sportfish populations can't develop. Several factors characterize a desirable prey species. First, it's best if the fish is small. Preyfish need to be small enough for predators to consume. Second, a multiple-spawning species is desired. Such a species is likely to produce the numbers and diverse sizes of young that will feed predators. Finally, it's best that they be as low as possible on the food chain. Fishes that feed on microscopic plants and animals are able to exist in greater numbers than those that prey upon organisms that are farther up this food chain.

How do gizzard shad stack up as a preyfish? They don't meet the size requirements too well. Young gizzard shad grow quickly and often reach 5 inches by fall. They are preyed upon by small predators before reaching this size, however, and large predators (such as large walleye or striped bass) consume them throughout the year. Gizzard shad only partially meet the multiple-spawning characteristic. In our reservoirs they seem to complete most spawning in about six or seven weeks during the late spring. (More on this later.) Spawns in late summer or fall are rare, if they exist at all. Lastly, gizzard shad are indeed low on the food chain. They feed on phytoplankton (microscopic plants), zooplankton (microscopic animals), and even organic detritus (mostly decomposing plant material).

In spite of the fact that the gizzard shad may not be the most ideal prey species, it remains the most important in Kansas' large federal reservoirs. The Kansas Fish and Game Commission has been studying the species since 1983. Studies of this nature begin with a literature search, or study of previous work. Most of the gizzard shad research has been completed in the Southeastern states where high-density populations of gizzard shad typically develop. Standing crops (biomass estimates) often surpass 400 pounds per surface acre of an impoundment, and the populations are dominated by large adults (often reaching 2-3 pounds). Two major problems occur in these situations. First, the gizzard shad compete with other fishes for available food supplies, thus suppressing desirable sportfishes. In addition, very little reproduction occurs in such populations. This is undesirable because young gizzard shad are important prey. After reviewing this information, we set out to find if the same were true for Kansas.

We began our studies at Melvern Reservoir, located in east-central Kansas. This is where we first determined that the spawning season generally lasted six to seven weeks. We also found that although gizzard shad reproduction occurred each year, the fish did not always recruit, or survive to the adult stage. Thus, we discovered that only the year classes from 1975 and 1980 were able to recruit.

**T**hanks to assistance from Carson Cox, a student at Emporia State University and a summer aide for the Fish and Game Commission, we were able to determine that individual fish spawned more than once. We followed patterns of egg-diameter frequencies through the 1986 spawning season. Fish spawned a large-size group of eggs, then matured a middle-size group and returned later to spawn them. Fish were also found to retain a small-size group of eggs throughout late summer and fall. This group of eggs may be ripened for late spawns, although this has not been proven or disproven.

We also have noted that many of the juvenile gizzard shad in Melvern Reservoir move into shallow water by the time they reach 1-1½ inches. This type of movement generally does not occur in clear reservoirs of the Southeast. Brian Todd (also a student at Emporia State University and former summer aide as well) compared food habits of juvenile

gizzard shad captured in near-shore and open-water areas of Melvern Reservoir. He found that those few fish left in open water were "filter-feeding" on filamentous algae (microscopic plants), while those in shallow water were consuming mostly organic detritus. We now believe that in turbid (muddy) waters the amount of phytoplankton produced is limited, and the gizzard shad use a less-desirable source of food (detritus). This probably explains why it's more common to see schools of white bass surface feeding over deep water in clear reservoirs than it is to see them in more turbid reservoirs.

With help from our district fisheries biologists, we recently completed a statewide evaluation of factors affecting gizzard shad reproduction. Both size structure (length ranges) and condition (plumpness) of adult gizzard shad affect the quantity of young produced. A population comprised mostly of large adults (those longer than 11 inches) tended to produce more young than a population comprised of 8- to 11-inch adults. Also, the better the condition of adult fish, the more young were produced. We've documented that healthy (plump) adults can override the lower production typical of a small-adult population. In the future we may be able to use measurements of adult gizzard shad populations to predict the likely success of reproduction and thus fine-tune our predator stocking programs.


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We appear to get some (shad) reproduction each year at all of the large reservoirs in the state. This is in direct contrast to populations in the Southeast.

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The statewide project also documented something we had long suspected. We appear to get some reproduction each year at all of the large reservoirs in the state. This is in direct contrast to populations in the Southeast. We now believe that we get yearly reproduction because Kansas lies near the geographical edge of the gizzard shad range. Quite a bit of winter mortality occurs here, and populations apparently stay below each water's carrying capacity to support this species. The surviving fish, therefore, reproduce each year.

Reproduction and early life history of gizzard shad in our western reservoirs appear to vary from Melvern Reservoir. Dan Heskett, a graduate student working under Dr. Tom Wenke at Fort Hays State University, is replicating the Melvern Reservoir studies at Cedar Bluff and Webster reservoirs. We also hope to understand the nature of recruitment by gizzard shad in the western reservoirs. Preliminary work by Steve Price, one of our district fisheries biologists, indicated a low-level but consistent recruitment. Recruitment patterns at Melvern Reservoir were dissimilar. Recruitment tended to occur there only once every several years.

We're now beginning to understand the biology of gizzard shad, the most important prey species in Kansas reservoirs. Such understanding will lead to better methods of managing both gizzard shad and sportfish populations. That should make for better fishing. 

# KANSAS WILDLIFE

## Gallery

photos by Mike Blair

A mammatus cloudscape belies the unstable air that produced it. This phenomenon, often seen in advance of severe thunderstorms, occurs when air beneath the cloud is warmer than the cloud itself. Pockets of cool cloud sink into warmer air, forming mammatus clouds. Shot with 50mm lens,  $f/2.8$ ,  $1/60$ .

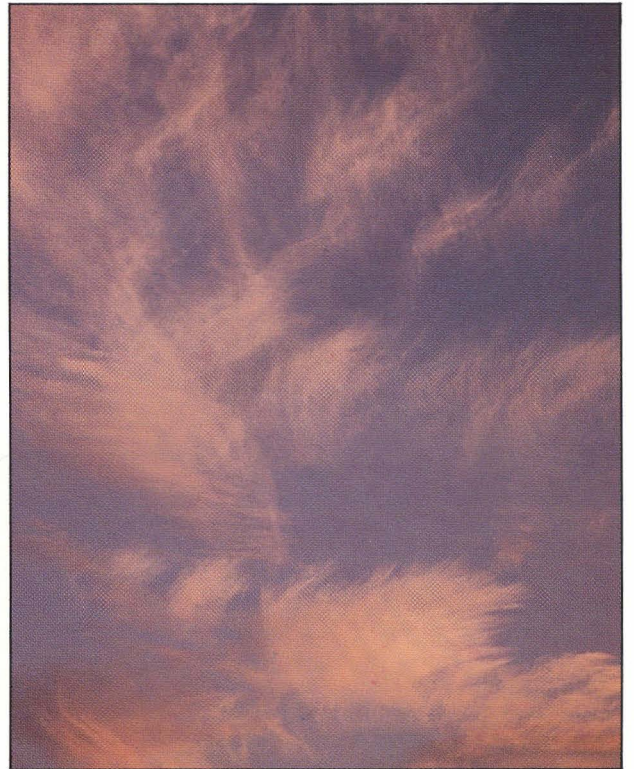




Cumulus clouds develop in rising thermals from the sun-warmed ground. Each cloud has a lifetime of 5-40 minutes. Shot with 50 lens, f/8, 1/125.



At left, July heat spawns thunderheads, rapidly rising drafts of moist air that condense as they climb. Occasionally reaching 50,000 feet, they eventually flatten into a characteristic ice anvil at a high-altitude layer of stable air. These clouds often produce high winds, hail and tornadoes. Shot with 50mm lens, f/11, 1/125. At right, wispy cirrus clouds reflect the setting sun. Fair-weather creations, cirrus clouds are formed of ice particles that slowly fall to earth from the upper atmosphere. Wind shear at great heights pushes them into a myriad of forms. Shot with 50mm lens, f/3.5, 1/60.





Badgers are members of the mustelid, or weasel, family. Badgers may appear wider than they are high as they approach or move away from you.

# Badgers: Digging Up The Facts

Our furbearer biologist profiles the badger, a specialist in trench warfare and one heck of an interesting creature.

by **Lloyd Fox**  
*Furbearer Project Leader*  
*Emporia*

photos by **Gene Brehm**

**B**lack eyes peered from the depths of a recently excavated tunnel. A face, divided into halves by a white stripe, appeared. This line extended from just behind the nose to the shoulders and ran midway between the eyes. From the muzzle to the ears was a large white patch,

and in the middle of that patch was a black triangular badge, the namesake of *Taxidea taxus*, or the North American badger.

My cautious approach and patient waiting were paying dividends as the object of my search, a badger, emerged from its den. Maybe I would be fortu-

nate enough to see it perform some of the interesting behavior I had read about. The badger was now on top of the mound in front of the den. It shook the dirt from its coat, much as a dog shakes off water. The hide seemed insufficiently attached as the animal shook itself. Long, grizzled, silver-gray



hairs of the shoulders and flank flopped loosely, reminding me of a dust mop being cleaned in the breeze.

The animal appeared to flow rather than walk as it moved away. Short black legs extended just past the shaggy gray belly fur. The front feet are designed primarily for digging; walking is a secondary use. Badgers have long, thick claws that are narrow and slightly curved. The claws are excellent chisels to loosen soil and rip through grass and forb roots, but certainly not the nails of an agile walker. Badgers have a pronounced toed-in gait when they walk. I imagine they step with their front toes pointed up and land on the back of their pads, but this is concealed from view by the bulk of their body.

Badgers are members of the mustelid, or weasel, family. This family has adapted into some specialized predatory niches, or professions. If one were to make an analogy between species adaptations and military capabilities, the mustelids would have a formidable army. Agile, silent and solitary, the arboreal (climbing) fisher and marten could be the snipers. Otter and mink could provide naval and amphibious superiority. Ermine, weasels and ferrets are quick-footed, small terrestrial marauders while the wolverine is the heavy-footed giant weasel. These species are tough and quick ground troops and frequently referred to as blood-thirsty. While there are no flying weasels, the air is strategically used by some of the members. Pattering of a skunk's front feet may denote impending chemical attack. But if the going got tough and the mustelid army got bogged down, they could rely on the ultimate in trench warfare — the badger.

Badgers are stoutly built. As they approach or move away from you, they appear wider than they are high. Badger dens have this same characteristic. Adults weigh 14-20 pounds; males average 25 percent heavier than females. Peak weight occurs in the early fall as badgers accumulate fat reserves for winter.

Badgers do not hibernate, but they do change their activity patterns and metabolism to increase their chances of survival during the long, cold winter. A badger will remain in its ground den during cold weather rather than venture out to forage. The climate inside a burrow is moderate in comparison to the climate outside. Energy is further conserved as the badger undergoes bradycardia, a slowing of the heart rate, and also controlled hypothermia, a lowering of the body temperature. Even the efficiency with

which food is processed increases at these times. As a result, a badger needs to use less of its body fat and thus can survive longer than it could if it didn't employ these measures.

**F**ood is an important consideration when understanding a predator. Badger prey on ground-dwelling animals, especially mammals and particularly rodents such as ground squirrels, prairie dogs and gophers. Badgers are prolific diggers. There may be as many as one badger-dug hole per 2-5 acres in high-density badger range. Badgers use these holes while they hunt as well as for shelter. Many species seek shelter in these holes only to be surprised when the badger returns. This probably explains how species such as the cottontail rabbit occur so frequently in the badger's diet.

Badgers are not only great diggers, they are smart diggers. They've been observed to dig out family groups of ground squirrels while leaving undisturbed nearby burrows occupied by a single squirrel. Badgers also plug the exit holes before making their assault. In some cases their prey can be great diggers also. Pocket gophers are one such example. Digging out the entire burrow system of a gopher would be an energy-expensive operation. Badgers tackle this problem by making a series of exploratory digs. They then

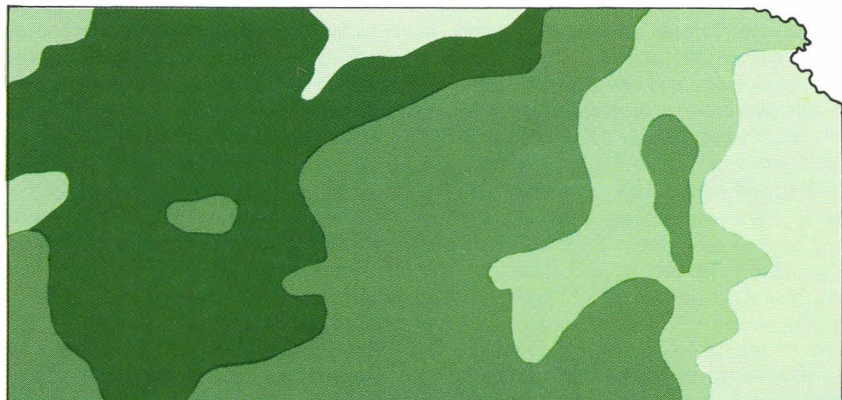
run between the exploratory points and determine, probably with their sense of smell, which site is closest to the gopher. After this has been determined, they make their final assault. This system must work as more than 70 percent of the time badgers catch prey. Even the misses are interesting. Coyotes and birds of prey, especially the eagles and other buteos, frequently hunt near a badger just for a chance at what escapes.

Diet may vary with changes in prey availability and with changing seasons. Badgers have been known to feed on birds, reptiles and insects. European badgers feed heavily on earthworms. Badgers living in agricultural areas occasionally feed on corn and milo.

We have learned much recently about the intricacies of badger social life. For the most part, the North American badger is a solitary animal, quite unlike their gregarious European counterpart. Badgers are thought to be promiscuous. Telemetry studies aid in understanding their social system. Home-range size varies according to habitat characteristics and prey density. Studies in Minnesota indicate that females may use 2,100 to 4,200 acres. Females in Utah and Idaho averaged 585 and 395 acres. Males typically use twice as much area as the females in the region and overlap areas used by several females. Seldom, however, will males overlap areas used by other males.

The yearly reproductive cycle of the badger is fascinating, even for a mustelid. Like many members in this fam-

## Badger Density In Kansas



Lightest green = very low  
Light green = low

Dark green = good  
Darkest green = high



Badgers prey on ground-dwelling mammals and rodents. Snakes are on the menu, too.

ily, badgers have delayed implantation. Breeding occurs in July and August, but growth and development of the young does not get started until the next February. From that point, things happen rapidly. One to five young per litter are born in March or April. Cubs are nursed by the female for five to six weeks. Solid foods are apparently brought to the young at an early stage. Females tend to restrict their movements to near the natal den, or place where the young were born. They have been known to move the cubs to new dens, thus shifting their forage area as the young grow and need more food. At four to five weeks of age, the cubs emerge from the ground den but seldom move away from it on their own. Ties between mother and offspring are amazingly short for a carnivore of this size. The bond lasts only 10-12 weeks. As this period ends, the female will spend progressively longer periods of time away from the young. Eventually the family breaks up, and the young begin their erratic and sometime lengthy search for a new home. One juvenile female from a study in Idaho traveled more than 30 miles before setting up shop.

**A** fascinating aspect of badger social behavior is that some of these young-of-the-year females may breed. As any population ecologist will attest, a species that reproduces at a young age has a tremendous numerical advantage over a spe-

cies that takes an additional year to mature. None of the small sample I have examined from Kansas have shown this early reproductive trait. Litter size for the older animals is comparable to other locations. Possibly the survival rate of Kansas badgers is high enough to negate the need for early reproduction. The oldest badger I have examined in Kansas was 9½ years old. Badgers have been known to live more than 15 years in captivity.

On the economic ledger, the badger has a mixed showing. On the one side, they consume numerous rodents and occasionally provide valuable fur. On the other side, the badger's zeal for digging out rodents results in pits that may snare livestock and farm implements.

Badger fur does not play an important role in the international fur trade. Pelt quality varies along a continuum, but the pelts are frequently classified into two groups: hair badgers and fur badgers. Hair badgers are almost worthless. They are flat in appearance due to a lack of underfur. Badger hides are thick and tough to process. Hair badgers are occasionally made into rugs. Fur badgers, on the other hand, can command an excellent price (in excess of \$50). These pelts, used in trimming high-fashion coats, have a thick, light cream-colored inner fur with long, lustrous, silver-gray guard hairs. Quality shaving brushes were once made with badger hair, which is extremely durable. Badger fur becomes prime later than most species of furbearers. That is also the time when this species is hardest to find.

When I think of badgers I think of prairie. The species occurs from

northern Alberta to central Mexico and from the Pacific Coast to Ohio. Badgers are found from below sea level in Death Valley up to 12,000 feet in the Rocky Mountains. They are even found in open woodlands. But it is in large tracts of prairie that I have most frequently found this species. The badger's distribution in Kansas coincides not only with grasslands but with soil conditions as well. The Flint Hills region, for example, has excellent prairie, but badgers find it difficult to dig in these rocky hills. The grasslands of Finney and Kearny counties, however, are ideal for digging. Badger densities in the Flint Hills are higher than the more heavily wooded and farmed counties to the east but lower than the grasslands in the Arkansas River lowlands and the high plains of western Kansas.

**T**he badger neared the limit of my field of view. He would soon disappear. My patience had worn thin; my curiosity had piqued. I had to have a closer look so I charged. I was amazed at the speed of this running badger as it attempted to flee. Eventually I caught up with it. We faced each other briefly. He gave a couple of mock attacks accompanied with a nasty hissing noise.

During these brief changes in our roles, I was impressed with his foot speed and began to question my own. I gained a whole new perspective on the phrase "being badgered." Thank goodness they were only mock attacks. By now I was breathing heavily, and there was no place to escape a truly angry badger in this treeless stretch of prairie. In retrospect I believe he was positioning himself for an escape. He selected a slight depression with a clump of low brush to his back. With amazing speed he threw sandy soil from the pit and simply settled deeper into the ground. He seldom took his eyes off me for more than an instant. His stout shoulders churned the ground, and then it was all over. He tunneled out of sight, leaving me with a fleeting glimpse of a stubby, little brown tail disappearing into the sand.

I settled back to watch the sunset, pleased to have seen and been so close to such a marvelous creature. Yet I was unsatisfied. I had observed so very little. Most of what we know about badgers comes from hours of diligent observations. I silently thanked that handful of people and wondered what intricacies remained to be described.





by Rob Manes

## Newfound Optimism

I'm really an ultraoptimist, but I've half-expected to see the end of most wildlife-related sports. Hunting and trapping, of course, seemed most at risk, but fishing could go, too. I've seldom said it aloud, but I've worried that my children would never get to hunt. At best, I figured, they'd get to shoot a few pheasants on some commercial shooting preserve. Certainly, I've speculated, my grandchildren would never hunt deer.

This may sound like the doomsday nonsense we hear from so many self-proclaimed experts. Yet I've sometimes been overwhelmed by all the attacks on my beloved avocations. There are anti-hunters, anti-trappers, and some people even oppose fishing. Then there's the continuing tide of habitat loss and environmental wreckage — urban sprawl, stream channelization, acid rain, hazardous waste and countless other threats. Especially acute in Kansas are the powerful and dangerous effects of intensive agriculture. Irrigation, feed lots, and the new "chemigation" (ag chemicals sprayed through sprinkler systems) expose wildlife to subtle but lethal hazards. Ditch-to-ditch tillage and poor grazing practices leave wild animals without food and shelter.

The list of threats to outdoor traditions continues. Landowners are less and less willing to allow hunters in their fields. Lease hunting threatens to make it a sport for the wealthy only. And a growing list of legal snags has closed some lands to all hunting.

We who have enjoyed the wilds in the past are mostly to blame, either because of our misdeeds or our inaction. We've failed to step in the way of the unconcerned legislator, the uneducated activist and the unethical sportsman. We've made our own foul bed. Must we now lay in it?

I thought so until I took the job of Kansas education coordinator about six months ago. Now I see great reason for hope in the people I serve — both students and instructors. They understand the problems and the solutions. They seem to know what's at stake, what must be done.

Most students who complete the volunteer-taught course take with them an understanding of landowner relations. They realize that hunting on private land is a precious privilege that can be lost. They know the rules of conduct in a landowner's field are to be followed without wavering, and they're usually eager to know and obey wildlife laws.

Staying within the law is more than a matter of obedience for most hunter education graduates. It's a matter of ethics — personal beliefs about what's right and what's wrong. These young people are generally less apt to risk wounding or losing game by stretching their skills or equipment. They learn early that taking game is not essential to a quality hunt. Many have taught their fathers lessons in the field.

Kansas Hunter Education Program instructors fight tirelessly to save the outdoor sports. They do it each time they participate in classes and give unselfishly of their time, expertise, even money. Many instructors reach more than 100 students annually. More than 12,000 youngsters are given the chance to learn the true sportsman's ways each year. The men and women who teach them are ensuring the future and safety of hunting, fishing and trapping.



Patti Murphy illustration

A generation of young farmers also offers hope. They aren't so eager to push the land to its productive limit, and they understand the non-economic value of corners, fence-rows and ditches left untilled. They also realize wildlife is a resource not to be taken for granted.

Others who know and care about wildlife have banded together. They struggle, as do most minorities, against decades of ill-founded traditions, values and attitudes. But they continue, and they've realized success.

So I find reason for hope in today's young men and women, even confidence that I'm wrong about future generations' ties with the land. I believe my son or daughter may get to catch a mink in a den set, flush a wild pheasant over a pointing dog or even take a deer with a bow.

Sure, future generations could enjoy the outdoors without harvesting from the wild. They could be watchers, photographers and studiers. But if they can't also hunt, the gap between people and the wilds will grow. The loss of understanding and concern for wildlife and the environment will be great and lasting. But I don't believe that time will come.

Maybe my optimism is unfounded, but I see dedication, wisdom and determination in the people I serve. Both students and teachers restore my optimism — an answer to my most sincere prayers.

Will future generations overcome past mistakes? Will they bend low, waiting for Canada geese to come into range? Will they check their lines along free-flowing waters?

I believe so.



