KANSAS Wildlife & Parks

MARCH/APRIL 2009 $2.75

On Point

by Mike Hayden

Facts On KDWP Funding

In my last column, I outlined KDWP's need to increase revenue and reduce expenditures to ensure adequate funding to finance agency programs in the future. On January 8, I presented a draft plan to the Kansas Wildlife and Parks Commission at its public meeting in Emporia. I say draft, because that's what it is. We are looking for as much input as we can get in the next few months. The draft fee increases were posted on the KDWP website along with a news story. We put the proposal on our BLOG to receive public input and have been accepting email comments.

Comments, opinions and suggestions have come at a steady pace, both from agency personnel, as well as the public. All are welcome and will be considered. However, after reading some of them, I think a basic explanation about how KDWP is funded will dissipate some common misconceptions and help constituents better understand our position.

First, there is an opinion that KDWP is "padding its coffers," or an insinuation that the department is "money hungry." Keep in mind that we are a fee-funded agency, which means that revenue from license and permit sales goes directly into the Wildlife Fee Fund, Park Fee Fund, or Boating Fee Fund where it is then used to pay for operation of department programs, salaries, fuel, equipment, and supplies. Those who enjoy our programs, pay for them. There is no "profit." Money taken in is spent directly on administering department programs. And all of our budget processes are designed to allocate and spend this money as efficiently as possible.

Another misconception is that KDWP realized increased revenues when we instituted the point-of-sale computer license and permit system. That is not the case. The company that provides the services and equipment for the point of sale system collects the processing fee of $1.50 for each issuance, and vendors such as county clerks or your local tackle shop can also collect up to $1 per issuance. Even though these issuance fees don't go to the department, we did gain considerable convenience for our customers, who can now buy just about any license or permit 24 hours a day, seven days a week. The system provides automated weekly fund transfers from vendors, which are deposited into the appropriate accounts with increased efficiency and reduced costs. We also have a valuable database, which allows the department to learn more about and better serve our customers.

So where does the money come from and where does it go? Our total income for FY 2008 from fees and appropriations was approximately $55.7 million. About 40 percent of that came from the sale of hunting and fishing licenses and permits. Twenty percent came from hunting and fishing federal aid – money the US Fish and Wildlife Service collects from an excise tax on hunting and fishing equipment then pays back to the states based on license sales (states must provide 25 percent matching funds). Almost $5 million was collected for park permits, $1 million for boating registrations, another $4 million comes from other federal aid programs, and $9 million came from the State General Fund (most of which helps fund state park programs).

KDWP expended approximately 32 percent on fisheries and wildlife programs, 18 percent on state parks programs, and 10 percent on law enforcement. The balance of expenditures was for capital improvements, administration, and grants. Of the total expenditures for FY 2008, approximately 45 percent was for salaries and wages with the balance for program expenditures.

Concern by our planners about the fee fund reserves is legitimate. Maintaining reserves in these fee funds allows the department to have adequate funds to finance operations during periods of decreased revenue. Fee fund reserves are necessary to maintain responsible services to our constituents.

The department probably put off raising fees too long, but there has been and always will be concern about pricing people out of recreation. We held the line as long as we could while still providing outstanding outdoor opportunities. However, as many other businesses and service providers have learned in recent years, it costs more to do business today. Fee increases are necessary as are budget reductions. With this compromise, KDWP will continue to provide you with the outdoor opportunities you've become accustomed to.

KANSAS Wildlife & Parks

March/April 2009 Vol. 66, No. 2

1 **On Point**
Facts On KDWP Funding *by Mike Hayden*

14 **King Strut**
Since the first season in 1974, the Kansas turkey population and spring hunting tradition have grown steadily. Hunting gobblers in the spring is one our most exciting and enjoyable hunts. *by J. Mark Shoup*

20 **The Saga Of The Black Rail**
With a reputation of being as difficult to photograph as Bigfoot, the black rail separates the photographers from the wannabes. Follow along as the author chronicles his quest for the black rail. *by Bob Gress*

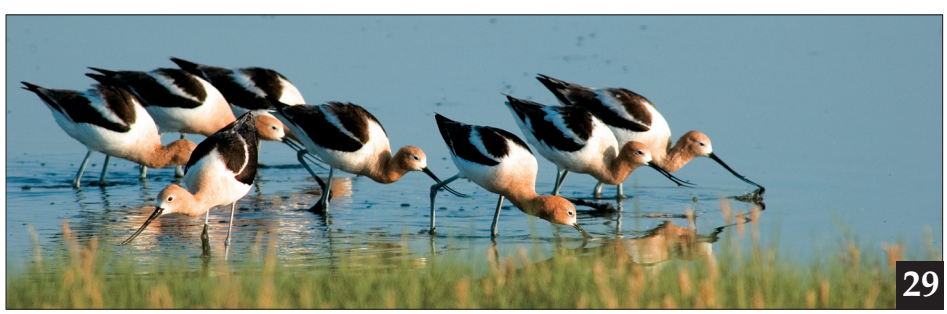
24 **Renovating Milford Hatchery**
The Milford Hatchery was built to last 25 years. When that deadline approached several years ago, an extensive renovation began to keep the hatchery productive. *by Harold Jagerson and Steve Priller*

29 **Kansas Shorebirding: The Next Level**
Want to take your birdwatching hobby to a new level? Try shorebirds. Forty-one different species and tens of thousands of shorebirds migrate through Kansas each spring and fall. *by Helen Hands*

34 **Smallmouth: The Other Black Bass**
As most Kansas reservoirs age, the largemouth bass, an angler favorite, struggles to flourish. However, the lesser-known smallmouth is thriving and winning new angler fans every day. *by Scott Waters*

39 **2009 Fishing Forecast**

45 **Backlash**
ProcrastoNation *by Mike Miller*



Front Cover: An eastern turkey gobbler struts his stuff during the spring breeding season. Photograph by Mike Blair. 600mm lens, f/5.6 @1/500 sec. **Back Cover:** The American avocet is an easily recognized shorebird common on Kansas wetlands. Photograph by Mike Blair. 600mm lens, f/11 @1/500 sec.

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Letter . . .

INVADERS AND WILDLIFE
Editor:

We frequently travel I-70 between Hays and Salina where we observe a healthy growth of cedar-looking shrubs that we believe are noxious plants. To us it appears they are becoming more numerous over the years and if not controlled will eventually destroy all of the grass. Not only does that result in an economic loss, but it destroys the natural beauty of the rangeland. It appears that the north side of the highway is more severely infested than the south side; perhaps the landowners on the south side are making a determined effort to control it. State law requires landowners to control bindweed; is there no law regarding these destructive plants?

Several mornings back, a bobcat ran across the yard, climbed over the wooden fence, and disappeared. I know they are pretty much nocturnal, but one would hardly expect them to come into town even during the hours of darkness. About a year ago, Darlene saw a bobcat try to catch a rabbit that was feeding under our bird feeder. This causes one to wonder if our modern farming practices are destroying the habitat of the prey that sustains our carnivorous wildlife.

Darlene and I enjoy seeing wildlife, but we hardly see any driving the countryside. Time was when we observed jack rabbits, pheasant, what we called prairie hawk, coyotes, deer, prairie dogs, and occasionally a badger. I don't believe we have seen more than a couple of deer since the limit was raised on antlerless does. We understand deer must be controlled, but it seems we allow too many to be harvested.

Carl and Darlene Schlegel
Hays

HUNTING HERITAGE

with Wayne Doyle

Reflection On The Season

As I write this, the hunting seasons are winding down – always a time for reflection for me. It's time to re-live the successful and not-so-successful days hunting on the prairie. But any day hunting is a good day.

I long ago stopped measuring success by the number of dead birds in my bag. Success to me now can be determined by the answers to questions: How did my dog do? How did I shoot? How pretty was the day? How did my friends' dogs do? Success is also about sharing my marvelous experiences and the wonderful look of understanding in my bride's eyes as I babble on and on.

A major part of this reflection is on dogs, mine, as well as others'. As I reflect on how my boy, Thor the Nova Scotia Duck Tolling Retriever, did during the year, I remember the times that what he is came to the surface: how the wolf rose in my couch potato buddy. How his predatory instincts were evident as he pinned a wily old rooster or cornered a covey of quail or chased down that wing-tipped duck. And how lost I felt in the field one day while Thor stayed home nursing an injured leg. And I remember my friend's four-month old Brittany, Daisy, and that magnificent day when she went from running around the other dogs to scenting the air and finding a downed quail – I got to see the light of the wolf come on in Daisy. I reflect on another friend's old dog, Lucky, still full of the wolf but showing some of the signs of age and my eyes misting up as I remember her as a pup when she discovered the wolf in her. Another season is gone and time marches on.

Letter Continued . . .

Dear Mr. and Mrs. Schlegel:

I agree that the eastern red cedar poses a threat to our remaining grasslands. I don't know if the state will declare cedar a noxious weed because it's a native plant, but its potential for economic damage by degrading prairie is at least as great as that of sericea lespedeza, which is considered a noxious weed. Not only does cedar threaten grazing lands, but it rapidly degrades the habitat's value to grassland birds, including prairie chickens, quail, and a variety of songbirds. With cedar encroachment comes a whole host of predators not common on open prairie, and they can devastate grassland wildlife.

Killing cedars when they're small is easy, with just a little maintenance and minimal expense. But too many landowners don't perceive the problem until cedars, or other invasive trees (Osage orange, Russian olive) have exploded across their grasslands, and control becomes difficult and expensive.

–Randy Rodgers, research biologist, Hays

Editor's note: Managing wildlife is an inexact science to say the least. And one person's "too many" is another person's "not enough." Wildlife populations fluctuate from season to season in response to weather extremes and habitat conditions. The department's programs strive to provide outdoor opportunities for Kansans, while protecting the resource. It's a safe bet we'll never please everyone, but we do our best.

BIRD BRAIN

with Mike Rader

2009 Wings-n-Wetlands Festival

Birders from near and far will attend the 2009 Wings-n-Wetlands Festival in Great Bend, April 24-26. Organizers anticipate that more than 200 birdwatchers, including beginners and experts, from Kansas, as well as approximately 20 states will participate in this special event.

World-famous marshes Cheyenne Bottoms Wildlife Area and Quivira National Wildlife Refuge provide the centerpieces for this biennial festival. Participants will enjoy the diverse opportunities central Kansas has to offer. The approximately 50,000 acres of wetland and grassland habitat found on these two areas attract more than 200 species of birds during the spring migration.

Classes offered will help participants become better birders and will include tips for identification and photography, an introduction to managing a wetland for diverse constituents, a summary of new local efforts to rehabilitate injured raptors, and other wildlife-related topics. Many field trips to both marshes, plus possible trips to a lesser prairie chicken lek, highlight the weekend. Knowledgeable guides are available to lead these trips, so even novice bird watchers can have a great time.

Participants will have a special opportunity to attend the grand opening of the Kansas Wetlands Education Center at Cheyenne Bottoms on April 24. This new facility offers more than 11,000 square feet of floor space, and is dedicated to educating the public on marsh management, history of the area and hunting practices, and information on marsh plants and animals of all types. The ceremony is set to take place at 3 p.m. at the center on K-156 Highway, across from the old Cheyenne Bottoms rest area.

The festival is a cooperative effort among many entities, including the Great Bend Convention and Visitor's Bureau, the city of Great Bend, the Kansas Department of Wildlife & Parks, the U.S. Fish and Wildlife Service, the Nature Conservancy, Barton County Community College, the Kansas Ornithological Society, Fort Hays State University, and Stafford County Convention and Visitor's Bureau. Headquarters will be the Best Western Angus Inn in Great Bend, where a special room rate is available to festival participants. For more information, go online at: www.visitgreatbend.com, call (620) 792-2750, or e-mail information@visitgreatbend.com.

Letter . . .

Editor:
Although hunting is one of the safest outdoor activities, things do happen! I am writing in response to Wayne Doyle's article "Load Your Brain Before You Load Your Gun" (Sept./Oct. 2008). Although Mr. Doyle is most certainly correct on his four rules about keeping hunting safe, accidents happen. While many hunters follow the four simple rules on being safe while hunting, it can all change when the bird is actually in flight; then a handful of hunters become so focused on the bird, they forget about their surroundings and accidentally harm others. I can say that I have fallen victim to such an accident. A few years back, I was blocking a field while a large group pushed toward us. A rooster flew up between a young gentlemen and myself, and being focused on the bird, the young man accidentally shot me though the weeds, not realizing what he'd done. Even though his shot had struck me, it was only an accident. I agree with you about when the hunt is over, hunters should unload their guns, but sometimes, they forget and accidentally set them off. So, although I agree with you on people needing to take safety measures while hunting, I also disagree with you, Mr. Doyle. We can't prevent all accidents from happening even if we all follow the four simple rules of being safe. Accidents will always happen.

Nic Eppenbach
Hutchinson

Dear Mr. Eppenbach:

I guess we'll agree to disagree. I believe Wayne Doyle's point to be true – that if you follow the rules at all times, accidents won't happen. Accidents happen when someone breaks one of the rules. The young man in your story failed to identify what was beyond his target.

–Editor

IT'S THE LAW

with Kevin Jones

All In A Day's Work

Just because we start the day thinking it will be routine does not mean it will be. Such is the case for natural resource officer Clinton Lee. On December 23, 2008, Lee responded to a traffic accident north of Winfield, assisting Kansas Highway Patrol Trooper Robert LeVelle. When the officers arrived at the scene, they found that a van had slid off the icy road, struck a tree and was in flames. Two of the three people involved were still in the burning vehicle. Without hesitation, Lee crawled into the van, freeing one person and pulling him to the rear of the van where Trooper LeVelle was then able to pull the person out and to safety. Officer Lee then went back to the second person and tried to free him. He was not able to free the trapped passenger before the smoke and flames forced Officer Lee to get out. Lee sustained second degree burns to his face and neck, and both officers were treated for smoke inhalation.

This is not what you would think a day would be like for a game warden. While it is not routine, emergencies involving life and death do occur, and the department's law enforcement officers are ready to assist. Natural resource officers (or game wardens), park rangers and public lands officers receive numerous calls each year to help safeguard the people of our state. Whether it is pulling people from a burning van, rescuing people stranded or adrift in swollen flood waters, or providing basic life support to victims needing medical treatment, our officers are there to meet the challenge and provide assistance. They provide an important link in helping people in need, particularly in the rural areas of the state.

Some days are diamonds, some days are stones. No two days are ever the same. We never know when the call for help will come, yet we are ready. It's all in a day's work.

LEAD SAFE FOR HUNTERS

A Centers for Disease Control and Prevention (CDC) study on human lead levels of hunters in North Dakota has confirmed what hunters throughout the world have known for hundreds of years – that consuming game harvested with traditional ammunition poses absolutely no health risk to people, including children, and that the call to ban lead rifle ammunition was and remains a scare tactic being pushed by anti-hunting groups to forward their political agenda. In the CDC's study, children who ate deer and other game taken with lead bullets had lead levels of just 0.88 micrograms per deciliter, less than half the national average for all children and an infinitesimally small fraction of the level that the CDC considers to be of concern for children (10 micrograms per deciliter).

In looking at the study results, the average lead level of the hunters tested was lower than that of the average American. In other words, if you were to randomly pick someone on the street, chances are they would have a higher blood lead level than the hunters in this study.

–National Shooting Sports Foundation

Letter . . .

Editor:

Fine article in the latest (Sept./Oct. 2008) *Kansas Wildlife & Parks* about the assisted and youth deer hunt in September. I write a weekly outdoor column for the Manhattan Mercury and have repeatedly covered both the deer and turkey hunt, usually from the hunter's point of view – once from the organizers.'

We appreciate your focus not only on the hunt but also on the numerous people, organizations and businesses that make it possible. Thank you.

Leo Schell
Manhattan

Dear Editor,

I am a 60 year old Colorado resident with many Oklahoma ties. I have traveled through Kansas innumerable times. During the past few years I have become quite involved in upland game hunting. I no longer hunt the bountiful big game in Colorado nor waterfowl. Through this I have become enamored with the state I once detested for its size, wind, and seemingly endless highways between Oklahoma and Colorado.

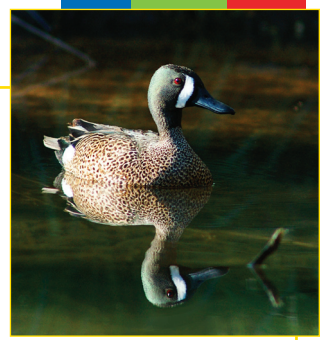
You had a reader this year who bemoaned the lack of private hunting ground available for the opening day family reunion hunts. I, on the other hand, am amazed with the quality Walk-In opportunities. I no longer go to South Dakota and am seriously considering reducing my participation in lease clubs. I hunt the public land more than the leases and with greater success. Wow.

I find the Kansas people open, friendly and accommodating if approached with respect. I have had several residents direct me to the owners of quality hunting land near the Walk-In areas. Many of these owners allow hunting or simply ask to wait a few weeks until their

DIGITAL IMAGE

with Mike Blair

Spring Waterfowl



Late winter can be a tough season for outdoor photography. The landscape can be tired and colorless just before things green up. Fortunately, migrating waterfowl come to the rescue. Now in their best breeding plumage, waterfowl offer color, action, and great opportunities.

At city parks, golf courses, fountains or ponds resident Canada geese or domestic ducks offer the easiest photography because the birds are usually more tolerant of close human presence. Point-and-shoot digital cameras having optical zooms of at least 5X can usually get pleasing pictures in situations where ducks and geese are fed.

But for me, the finest waterfowl experiences are found on wild marshes, ponds, or lakes in early spring. Digital single-lens-reflex (SLR) cameras are the ticket here because telephoto lenses are necessary for close-up images. Blinds that blend into shoreline vegetation are necessary for close encounters with wild ducks.

I recommend a telephoto lens of at least 300 millimeters (mm). This minimum focal length provides detailed images out to about 30 feet. A 600mm lens will stretch the effective distance to about 75 feet.

In-focus flight shots are difficult outdoor photographs to capture, but here's where digital provides an advantage because you simply delete the blurred photos and try again.

Try ducks this spring. Few subjects are as colorful and abundant, and with a little luck, you'll capture a stunning image.

QUIET!!!!

THAT' S WILD

with Ken Brunson

Stop and listen. What do you hear? In your outdoor adventures, can you recall a setting absolutely devoid of sound? Perhaps in a tree stand in the crisp quiet dawn where silence was interrupted only by a rodent rustling beneath you? Most cannot likely recall such an experience. I can recall a few fleeting moments of profound silence: a desolate mountain peak, solitude in the Sonoran Desert, quiet anxiety in a tree stand, and black nothingness in a cave. The rush of a valley breeze, the call of a Gila woodpecker, a rustling deer mouse, and a water droplet in a bat cavern interrupted absolute silence.

But whenever we're outdoors, sounds from human activities are the most annoying. This noise can be so pervasive we hardly notice it. Even away from cities and towns, there's incessant highway noise, an annoying oil jack engine, the train whistle carrying for miles, or barking dogs. Peace and quiet are disappearing from our natural landscape. But, quiet is an important aspect of outdoor experiences. As we march toward more highways, more ethanol plants, more sub-developments, more of everything, we are losing a precious biological and spiritual human need – silence. As Richard Louv eloquently writes in his book, *Last Child in the Woods,* "I hope all of you find this silence if you haven't found it already. It is well worth pursuing. This silence is generated by the absence of any noise, care, or preoccupation around your cell phones, iPods, TV, Radio, Walkmans, lap tops, noisy neighbors, the drone of traffic, barking dogs, and whatever else. This silence is brought to you by nature as a gift. Find your gift."

Letter Continued . . .

family has had their chance at a holiday hunt.

The amount of wildlife I see while hunting is incredible. Trophy whitetail and mule bucks, raptors of every size, including golden and bald eagles, appear. We continually see waterfowl by the thousands with sandhill cranes flying high overhead. We were remarkably close to an enormous white owl this winter. Turkeys, prairie chickens, rattlesnakes, armadillos, porcupines, and so it goes.

We find ample game all season long for us and our dogs. We cannot blame Kansans for not shooting straight. I maintain a west Kansas January pheasant is a breed alone. For me it is a complete experience: the people, the terrain, the game, the sound of a covey bursting or a cock rooster on a cold January morning along with those incredible sunsets make it a favorite place.

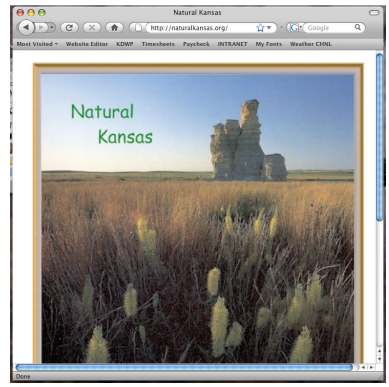
Fred Plumer
Elizabeth, Colo.

In the January/February 2009 issue, we featured some of the best photos submitted for the KDWP website's Public Photo Gallery. One of the photos featured a water snake with a bullhead in its jaws, and the editor took a stab at identifying the species. The editor was wrong. Well-known expert herpetologist Joseph T. Collins called and politely pointed out that the snake was a plainbelly water snake, rather than a northern.

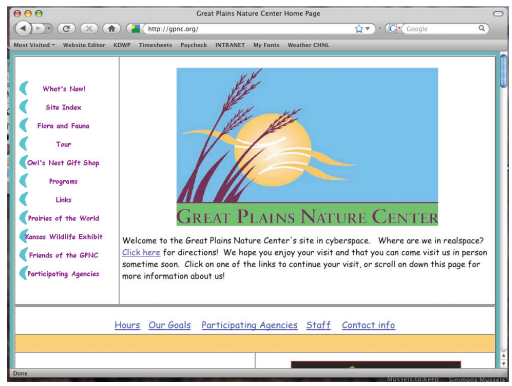
On The Web
with Mark Shoup

Natural Kansas & Great Plains

All disclaimers aside, everyone knows that the best source for information on Kansas natural resources is kdwp.state.ks.us. Right? Okay, some might argue that other sources are valuable in their own right. Two are Natural Kansas, naturalkansas.org, and the Great Plains Nature Center, gpnc.org. I am a fan of both.



Copyrighted by the Kansas Nature-Based Tourism Alliance, naturalkansas.org is actually underwritten by KDWP's Chickadee Checkoff Program and maintained by the Great Plains Nature Center's Jim Mason. Naturalkansas.org is a sister site to gpnc.org, both of which are chocked full of valuable resources. While gpnc.org contains a wealth of news and educational information about the flora and fauna of Kansas, naturalkansas.org focuses on events and places to enjoy these natural resources. They are, indeed, sister sites, featuring the same look with complementary information. Visit both today, and you'll learn much more about the Sunflower State than you ever imagined.



Online Cabin Reservations

An improvement to the KDWP website last September makes reserving cabins more convenient than ever. From the KDWP home page, kdwp.state.ks.us, click "Cabin Reservations" in the top right-hand corner. Select the desired state park or wildlife area and cabin from the onscreen list, and a list of cabins will appear. Select your destination, and information on securing reservations will appear.

All cabins offer secure online payment with a credit card. Online instructions conveniently guide users through the reservation process. Users must log into the system and set up an account to complete a transaction. In addition to complete written instructions detailing the reservation process, an instructional video provides an overview of the online reservation system.

More than 60 cabins are available at 22 locations in state parks and wildlife areas. With amenities such as bathrooms, kitchens, refrigerators, stoves, heating and air conditioning, and ADA accessibility, the cabins are quite popular. So, make reservations soon. Many of the popular weekends are filling up.

Winter Rainbows

The trout season closes April 15, but there's still time to knock off some of winter's rust and catch some trout. Even better, freshly caught trout are excellent table fare. For something a little different, try a shore lunch.

Fish cooked soon after it is caught will taste better. And when I say "soon," I mean I often bring my Coleman stove and a few spices along when I go trout fishing.

For shore lunch, I prefer trout that are 13 inches long or shorter. They season and cook easier, and the smaller bones are less of a problem. Larger trout can be excellent eating when prepared in a smoker, but that's another article.

For the grill, remove the gills and entrails and be sure to remove the dark blood-line that runs against the backbone. Push your fingernail along the backbone to remove it. Bring a bag to dispose of the waste. Do not throw it on the bank or into the water.

Next, drag a serrated steak knife against the scales in rapid, short strokes to remove them. Trout scales are tiny and look like glitter in the sun. So when an area of skin looks dull, you have removed the scales from that area. Pay attention to areas around the fins.

After a quick rinse in clean water, the fish is ready to season and cook. Set the grill to high heat. While it's warming up, dry the fish by patting with a paper towel. Next, spray a butter-flavored cooking spray liberally on the fish, even on the inside. Then, sprinkle Zatarain's blackened seasoning on the fish.

Place directly on the hot grill. The super-hot grill plate and cooking spray will help keep the skin from sticking to the grill. Cook on first side for about 5 minutes. Spray a little more cooking spray on the uncooked side just before turning. Depending on the size of the fish, 3 to 4 minutes on the other side should completely cook the fish.

Remove and eat immediately. No sides needed.

For a hands-on look at preparing a shore lunch of trout, visit the departments website at kdwp.state.ks.us click on KDWP TV and watch as I demonstrate this method of cooking trout.

FISHIN' with Mike Miller

Go Small Go Slow

Kansas fishing in early spring can be the best. Unfortunately, Kansas weather in early spring can be the worst. But it's been a long winter, and we anglers aren't the only ones with cabin fever. Fish are ready to feed and begin preparing for the spawning season.

The only problem is that fish are cold-blooded, and they need the water to warm up so their metabolism speeds up. So the first requirement in early spring is a warming trend. Two or three days of warm, sunny weather and a south wind often do the trick.

Just a few degrees difference in water temperature can make a big difference, both for the game fish we're after and for the prey fish the game fish are after. To increase the odds that you'll find warm water and feeding game fish, start in the upper ends of lakes or ponds and north-shore coves. Not only is this where the warmest water usually is, it's generally shallower than the rest of the lake or reservoir, and we know fish are easier to find and catch in shallow water. If you can find flooded brush and/or timber, so much the better. The wood radiates the sun's heat and warms the water around it. It also provides fish with cover to concentrate in and fishermen with a target to cast to. Brush in a stream or creek running into the lake might be the best scenario.

Now all you need to do is go slow. Even though the water is warmer, our cold-blooded quarry are still sluggish. Downsize line and lures and fish vertically whenever possible. A vertical presentation keeps the lure in the fish's "strike zone" longer than a cast and retrieve.

So get out and enjoy a warm spring day and shake off the winter doldrums. Early spring can be like fall fishing – boom or bust. But what the heck, there's nothing on TV anyway. You might as well be on the water!

LOOK BACK

with Bob Mathews

MARVIN'S LEGACY

Marvin Schwilling made a difference. Schwilling, who retired from KDWP in 1990, had a rare combination of skill, dedication, and class. That was the common thread in remembrances offered by his many friends after Marvin's death last June. We were lucky to have known him.

In 1951, Marvin hired on with the Kansas Forestry, Fish and Game Commission as a wildlife biologist at Marais des Cygnes Wildlife Area. Following a stint as manager of Marais des Cygnes, he was employed as a game biologist in Nebraska for three years. Then Schwilling came back to Kansas to serve at Cheyenne Bottoms Wildlife Area from 1962 to 1976, and as waterfowl project leader until he became the department's first nongame project leader in 1982. He was the quintessential naturalist and wildlife scientist, publishing results of numerous research projects and field studies.

But for the people who met him and worked with him, it was his indefatigable curiosity about the natural world, along with his eagerness to share his knowledge with us novices, that set him apart. His accomplishments were too numerous

to mention in this short space. (Google him for a more complete appreciation). What we know for certain is that the Kansas Department of Wildlife and Parks is better off for his 37 years of service, and Kansas is better off for the 83 years he spent creating a better understanding of the world around us.

PARK VIEW

KANSAS STATE PARKS

with Kathy Pritchett

Not just for summertime recreation

As the photo of sledders at Hillsdale State Park shows, state parks offer more than just summertime recreation. Several recent days have been warm enough for a comfortable leisurely stroll along our many trails or a round or two of disc golf. Sunrises and sunsets can be spectacular. Wildlife viewing, without the crowds and heavy foliage, can be spectacular. Bald eagles winter in many of the state parks, and the daily competition for food among the various species often presents high drama. Opportunities abound for capturing the sometimes subtle but often stark contrasts in winter landscapes with a camera. Spring migrations, newborn wildlife, and budding and flowering plants are just around the corner.

Permit prices are lower in the off-season (October 1-March 31). Early purchase provides savings to park users and provides money to the Park Fee Fund at a time when cash flows are usually low. Research shows that exercise and recreation are vital to physical and mental health. State parks can fill the "nature deficit" void in all seasons.

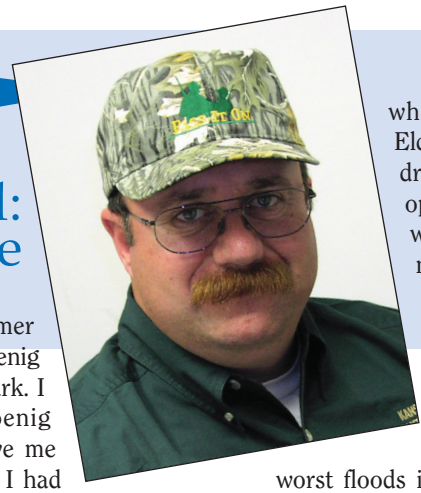
Kansas state park employees consistently strive for excellence—and often achieve it! Toby Kuhn, park ranger at Prairie Dog State Park, earned valedictorian honors upon completion of the first State Park Leadership School, sponsored by the National Association of State Park Directors, in Wheeling, WV. This school presents an intensive, two-year course to train the next generation of state park managers.

At the recent Kansas Recreation and Park Association Conference, Charlie Black, executive director of Kansas Wildscape, presented awards for the best OK Kids Day events. Meade State Park won first place and El Dorado State Park second place, with Lovewell State Park in third. Lovewell State Park also won for the Most Innovative OK KIDS event in 2008. Kansas Wildscape sponsors OK Kids, a series of statewide events designed to get kids (and their families) introduced to some of the outdoor recreation experiences the state has to offer.

The KDWP Statewide Geocaching Committee (Rick Cleveland, Wendy Bowles, Dave McElhiney, Mike Blair, Matthew Trujillo, Charlie Black, and Shari Wilson), won the KRPA Parks and Natural Resources Branch Interpretive Program Award. Cedar Bluff State Park won the Recreation Branch Award for a special event, "Holiday in Lights."

PROFILE:
with Mark Shoup

Kurt Reed: Northern Exposure



I met Kurt Reed professionally in 1987 when former Kansas Wildlife & Parks magazine editor Paul Koenig asked me to write an article on Kanopolis State Park. I didn't work for this outfit yet but wanted to. Koenig wanted to test my writing skills. The assignment gave me the opportunity to reconnect with a childhood friend I had forgotten, one who remains a friend today.

Reed grew up in Chapman, but his grandparents were from Larned, where I grew up, so we met as youngsters at the local swimming pool when Reed spent time with his grandparents. Spending time in these two rural communities instilled in Reed a love for the outdoors in two very different landscapes. His Larned family farmed along the Pawnee Creek, so he hunted and fished that area growing up. His home stomping grounds on the northern edge of the Flint Hills were resource rich, as well.

Reed graduated from high school in 1972 and attended Barton County Community College for two years, initially studying computer science but switching to criminal justice. After Barton, he transferred to Wichita State, where he earned an Administration of Justice degree in 1977. Internships with the Sedgwick County Sheriff's Department and two summers as a seasonal park ranger at Milford State Park gave him a solid footing for a job with the Kansas Park and Resources Authority (which merged with Kansas Fish and Game in 1987). Wayne Berneking hired Reed at Milford, and in December of 1977 Reed accepted the position of park ranger at Perry State Park. (Reed cites Berneking as an inspiration and mentor who would encourage and guide him throughout his career.) After 10 years at Perry, he became Kanopolis State Park manager. Then in the early 1980s, he visited Glen Elder State Park.

"The first time I came up here, I just loved the landscape and the people," Reed recalls. "I loved my job at Kanopolis, but there was something about this place that said, 'This would be a dream job.'"

Reed's dream came true in 1990, when he became park manager at Glen Elder. "This was exactly the right call for a dream career," Reed says. "I've had the opportunity to help people and do exactly what I wanted with my work, and not many people can say that. But there've been many people who have influenced and helped me reach this dream."

If fortune was shining on Reed when the Glen Elder job came open, misfortune only seemed to enhance his opportunities. In 1993, some of the worst floods in history hit the region, and the state park was literally destroyed. Like managers in other parks, Reed saw this as a chance to make things better.

"I saw this not so much as a challenge but as an opportunity to rebuild and improve this park, and with the help of everyone from several governors and the Kansas Legislature to seasonal employees, we turned this park into a more productive facility. It was a manager's dream in disguise."

After a considerable fundraising effort locally and statewide, campgrounds, shower houses, vault toilets, and bathrooms were built anew, and innumerable trees were planted. Facilities were upgraded with modern utilities, a fish-cleaning station was installed, and recently, two cabins were built. Reed's gregarious personality was perfectly matched for this task.

"We have an excellent professional staff who helped make all this possible," he explains. "I treasure that. What we've been able to do here has helped people realize they are a part of nature, and if we can give them the opportunity to enjoy that experience, we've done our jobs."

When asked about his proudest accomplishment during his career, however, Reed turns it back to his gifts. "I've just been blessed with the personal and professional associations this job affords, and the opportunity to meet with the public. I also appreciate the latitude this agency has given me to do my job. From here on out, I'm just focused on providing people the outdoor opportunities they need to grow."

Perhaps this attitude is one reason Glen Elder State Park was named one of the five best state parks in the country by Field & Stream.

SCOTT INTERPRETIVE CENTER

Amidst the rocky outcroppings known as the Ogallala Formation, Lake Scott State Park is carved into the geography like no place in Kansas. Natural springs, deep-wooded canyons, and craggy bluffs have for centuries made this area an oasis in the High Plains. Long before early Europeans settled the area, natives took advantage of the shelter and water offered here. Remains of the northernmost pueblo dwellings can be found here, and battles were fought over this a strategic site.

Now, a new structure helps visitors appreciate this area's rich history. KDWP has built an interpretive center and office building near the park entrance. At a cost of approximately $490,000, the 2,125-square foot building has an adobe veneer and houses park offices and museum displays. Native American artifacts and wildlife exhibits are featured, enhancing special programs planned by park staff. Staff work with both local and state historical societies to create the displays and programs.

The center will operate seven days a week during the prime season – April 1-Sept. 31. During the off-season, the center will be open five days a week. Winter or summer, spring or fall, the center will be a welcome complement to the park and its 150,000 annual visitors.

–KDWP news

HUNTING SPOTS
with Marc Murrell

Youth Turkey Season Provides Multiple Opportunities

Not long ago, kids had to be at least 12 years old to hunt turkeys in Kansas. Fortunately, the minimum age requirement was removed several years ago. I'm glad because if it was still in effect, my twin nine-year-old boys would still have three more years to wait. They each killed their first gobbler sitting on my lap at age seven and since have killed several more. Spring turkey hunting might be the safest and most exciting way to introduce youngsters to hunting.

And now youth 16 and younger have a special season (April 1-7, 2009) to hunt spring turkeys. Youth must have a turkey permit and be accompanied by a supervising adult 18 or older. It's a great opportunity to take a child afield and make wonderful memories that will last a lifetime. My son's 2008 turkey made enough of an impression on him that he chose it as his topic for his 4th grade personal narrative writing assignment. Here it is verbatim.

So if you get a chance, take a child turkey hunting. If you don't have one or if your kids are grown and you enjoy turkey hunting, invite a neighbor kid or young relative along. The memories you make just might surprise you.

by Cody Murrell — MY FIVE BEARDED TURKEY

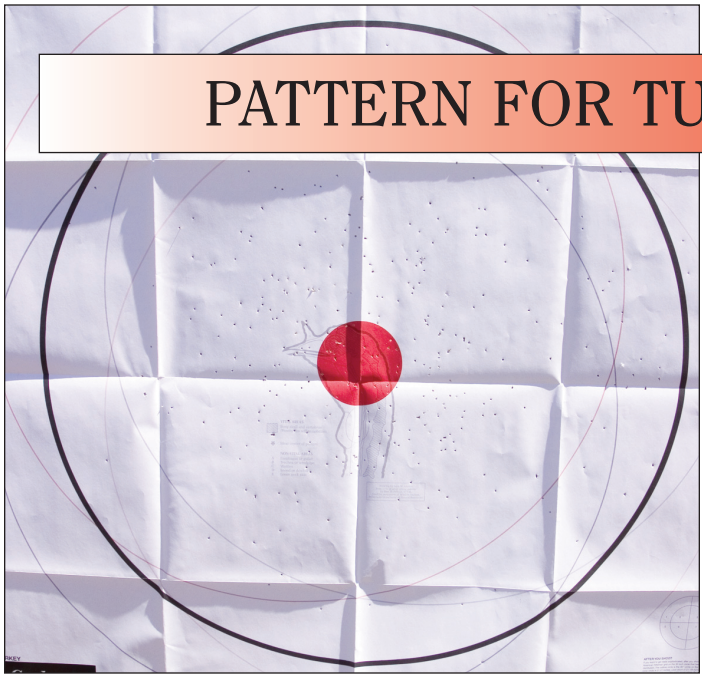
I was so exited to go. Then I finally got in and we drove off. I was so exited.

It all started after we ate lunch. I was dressed in camo. When we got to the place in Hutchison I was amazed when I saw it. I got out and got the shotgun shells out and I walked towards it. Then I got into the blind and waited for a long time—then I saw a turkey and got my shotgun loaded. I switched the safety off and got it on the turkey neck. BOOM! I missed!

So then I got started to get out and walk around. Then I and my dad saw another big group of them following some hens. We started to get down and they were to far away. So my dad called them in—apparently, they didn't come in. They started to walk towards an alley. I and my dad went the other way to the alley. Then my dad said "Quiet!" There they are. I got my gun on its neck and he got nervous so I changed to the other turkey. I slowly pulled the trigger. BOOM! Yes! I hit him. So I walked up and picked him up. Cool. Dad it has five beards. What! Well sure enough it does.

So you got to amity that was awesome. Next time it is going to be awesome to. My dad is a pretty cool guy for take me. Next time I will go in 2009.

PATTERN FOR TURKEYS



Perhaps the most important item in turkey hunting preparation is patterning of one's shotgun. Every shotgun barrel patterns differently, even those of the same brand, gauge, choke, and length, using identical shell components. Pattern testing checks shotshell as well as shotgun performance. Pattern testing your turkey hunting gun and loads is simple. You'll need to find out what load produces the greatest density of pellet strikes at the center of the pattern and where that center is, relative to your aim point.

Lead shot loads heavy enough for turkey hunting place sufficient pressure on the shot to compress it, causing the pellets to flatten. While many hunters use lead shot for turkey hunting, steel shot is popular because it maintains roundness and produces tighter, more uniform patterns.

Nothing affects shot dispersal more than the shotgun's choke. Full chokes are fairly standard among turkey hunters. Modified chokes, however, are fine with steel shot. If you have the ability to change chokes, use one of these two.

You can purchase commercial patterning targets or make your own by drawing a 30-inch circle on a piece of paper with a central aim point. It's even better if you can sketch a life-sized turkey head and neck, with the center of the head on the aim point. Step off 40 yards and fire a carefully aimed shot exactly at the aim point. Remember, you are not testing your shooting skills, you are testing your gun. Shoot from a sitting position that simulates hunting conditions. Lean your back against a tree or other backrest and support your elbows on your knees.

About 70 percent of the pellets should strike within the 30 inch circle, but the pattern's center density (the number of strikes within a 10-inch centered circle) is more important. There should be no place in the 10-circle where a two-inch disc can be placed without covering a pellet hole. The most critical test is a count of the lethal pellet strikes inside the turkey head outline.

Most shotguns don't shoot exactly where you aim them. They tend to shoot just a little high. You may find, however, that yours is off in another direction. You can determine this by moving a 30-inch ring around your pattern test target until it contains the maximum possible pellet strikes. You can test the placement of the dense center pattern by using a 10-inch ring in the same fashion. Once you've determined where your gun is shooting, you can adjust your aim (or change loads) accordingly.

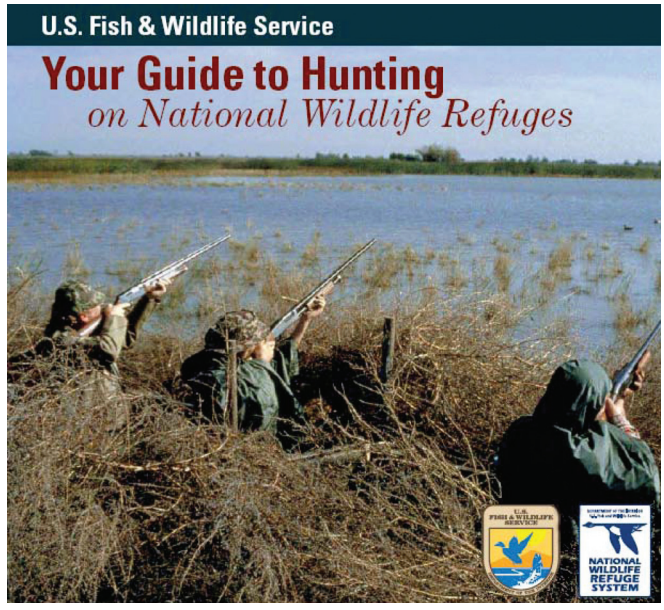
The key to getting good shotgun patterning performance is to try different shotshell loads until you find one that suits you. Even identical loads assembled by different manufacturers often do not perform equally. Lead 6s or steel or 4s are most popular; use whichever patterns best in your gun.

Hunting Guide

More than 300 hunting programs exist on national wildlife refuges, and many refuges offer hunts and blinds specifically designed for people with disabilities, as well as hunts organized to introduce youngsters to the tradition.

Your Guide to Hunting on National Wildlife Refuges is a comprehensive compilation of all hunting programs on national wildlife refuges. Organized by state, it not only gives a brief description of each hunting program but also indicates which species can be hunted, provides directions to refuges, and contains special stories on hunting safety and archery hunting. Available free online at fws.gov/refuges/hunting/HuntingGuide.pdf

—U.S. Fish & Wildlife Service



Have Fish, Will Travel

The KDWP Mobile Aquarium made its debut in 2008, participating in three events: Meade State Park OK Kids Day, the Wichita Riverfest, and the Kansas State Fair. In its initial year of operation, the aquarium reached nearly 140,000 people, withstood winds more than 40 mph, and was awarded "Grand Champion Outside Exhibitor" at the state fair.

The 40-foot long aquarium holds 3,200 gallons and is housed at the Milford Fish Hatchery. At events across the state, the aquarium displays many Kansas sportfish and nongame fish, including largemouth bass, smallmouth bass, spotted bass, white bass, striped bass, hybrid striped bass (wiper), bluegill, green sunfish, longear sunfish, channel catfish, blue catfish, flathead catfish, buffalo, common carp, walleye, sauger, saugeye, redear sunfish, black crappie, white crappie, longnose gar, spotted gar, and freshwater drum.

For details on these events, go online to kdwp.state.ks.us.

–KDWP news

KDWP will hold the following events in 2009, some of which were selected from applications by interested groups (the remaining chosen at the discretion of the Fisheries and Wildlife Division):

Feb. 6-8 – Topeka Boat & Outdoor Show;
March 28 – Ft. Riley Great Escapes Expo;
May 2 – Lake Lenexa Grand Re-opening;
May 15-16 – Wichita River Festival; and
Sept. 11-20 – Kansas State Fair.

Five more Northwest Kansas Deer Test Positive for CWD

Five more Kansas white-tailed deer have been confirmed positive for chronic wasting disease (CWD), bringing to eight the total number of CWD incidents from the 2008 Kansas deer seasons.

The Kansas Department of Wildlife and Parks is still awaiting final lab results on about 100 more tissue samples from hunter-killed deer during the past deer season, according to Shane Hesting, KDWP wildlife disease coordinator. More than 1,300 deer tissue samples were collected from hunters around the state during the past deer season, as KDWP continued annual sampling begun in 1996 to help track the occurrence of CWD in the state's wild deer. More than 10,000 tissue samples have undergone lab analysis since annual sampling began.

All eight deer confirmed as CWD-positive were taken by hunters in northwest Kansas. Of the five additional CWD-positive deer confirmed by KDWP this week, two came from Sheridan County, two from Rawlins County, and one from Cheyenne County.

The five newly-reported incidents are in addition to three Decatur County CWD-positive deer documented in early January by KDWP.

CWD has been detected previously in Kansas. During the 2007 season, three Decatur County whitetails were confirmed as CWD-positive. The first occurrence in a wild Kansas deer was a white-tailed doe killed by a Kansas hunter in 2005 in Cheyenne County.

Despite the recent occurrences, the likelihood of finding CWD in a wild deer harvested in Kansas is small. That small likelihood decreases even more the farther from northwestern Kansas the deer lived. In recent years, numerous cases of CWD have been documented in neighboring areas of Colorado, Nebraska and Wyoming.

While CWD is fatal to infected deer and elk, humans have never been known to contract the disease. CWD is a member of the group of diseases called transmissible spongiform encephalopathies (TSEs). Other diseases in this group include scrapie in sheep and goats, bovine spongiform encephalopathy (BSE or mad cow disease) in cattle, and Cruetzfeldt-Jacob disease in people. None of the 8 CWD-positive deer from the 2008 seasons exhibited any outward sign of CWD symptoms.

CWD is a fatal disease that results in small holes developing in the brain, giving it a sponge-like appearance under the microscope. Decreased brain function causes the animal to display neurological symptoms such as depression, droopy head, staggering, loss of appetite, and a lack of response to man. The continuing deterioration of the brain leads to other symptoms such as weight loss, drooling, and excessive thirst. Caution is advised because of unknown factors associated with prion diseases, but no human health risks have been discovered where CWD occurs.

Hunters can help protect the health of the Kansas deer herd by taking the following steps to avoid accidentally introducing CWD to a new area in Kansas:

*** do not transport deer carcasses far from the area where the deer lived, especially from areas where CWD has been detected, such as northwestern Kansas; and**

*** if a carcass is transported, the hunter should make sure that carcass waste is not dumped into the environment where local deer or elk can come into contact with it. Carcass waste can be disposed of by double-bagging it and taking it to a landfill.**

–KDWP news

FISH SQUEEZER

with Tommie Berger

Prepping for the Seasons

March and April are the months when most outdoor enthusiasts are trying to rid themselves from that dreaded cabin fever. The hunting seasons have been over since January, and it is time to look forward to fishing season. Biologists are not much different. We have spent the last couple of months catching up on all the paperwork necessary to get the job done and are chomping at the bit to get outside.

The warmer days of March usually mean that any hard water has thawed out, and most of the lakes are opened up. Some biologists use this time to get out and do some habitat work – getting some brush put in their lakes to beef up existing habitat structures. A few biologists like to put habitat on the ice and let the spring thaw drop those brushpiles in strategic locations. I prefer to load my trees and concrete blocks on a habitat barge and drop them right where I want them with the aide of a depth finder. Unfortunately, most biologists do not have help hired at this time, so we use volunteer help from interested anglers or coerce KDWP employees from other divisions to help.

During the latter part of March, most biologists in the state are busy working on a walleye egg taking crew. Around the 20th of March, Kansas walleye get the spawning urge and move to the rocks on the face of the dams to deposit eggs. Biologists with trap nets and gill nets take the egg-laden fish, spawn them right at the lake, and send the fertilized eggs to the hatcheries for hatching. Often this egg-taking operation lasts two to three weeks, lasting into the first week of April. This year, we will be taking walleye eggs at Cedar Bluff, Hillsdale, and Milford reservoirs. Then a few short weeks later, the hatcheries will call those who requested walleye fry to pick up their baby walleye for stocking in lakes. March and April are busy months for our hatchery biologists, too.

Generally, the last trout stockings of the trout season are made in March, so biologists also have to monitor those stockings and encourage trout anglers to keep their fish because most will not live after the water warms up. If there are creel surveys to run, fisheries biologists are also hiring and training creel clerks. April generally brings warmer water temperatures and a time for fish squeezers to get their electrofishing boats ready for the spring bass sampling. April is also a month when everyone gets ready for the summer season — making plans, setting up projects, and getting equipment ready to go.

Of course, April signals the real introduction of spring and along with it, spring turkey season. We all have to make sure we find a few April mornings to get out and enjoy some of that gobbler music. Turkey hunting and farm pond bass fishing are April chores that every person, whether you are a biologist or not, need to attend to.

DOUGLAS SFL REOPENED

KDWP reopened Douglas State Fishing Lake, near Lawrence, Jan. 3 after a three-year closure for renovation. Construction projects completed include resurfacing the north side of the dam, extending the outlet, slip-lining the valve intake, replacing the drain valve, and fencing off the dam. To improve the fishery, the existing fish population was removed and the lake restocked, more than 270 brush piles constructed, and 20 rock-pile fish habitat structures built. In addition, the Lawrence Fly Fishing Club built and helped place 70 PVC stake habitat structures.

Largemouth bass, channel catfish, bluegill, redear, and black crappie were stocked. Angling for channel catfish should be good this year, with many fish larger than 15 inches. Largemouth bass, bluegill, and redear should provide fair fishing. Black crappie will need two years to reach keeper size. Saugeye will be stocked in 2010 to provide another angling opportunity.

Special regulations are in place to protect this fishery, including an 18-inch minimum length limit on largemouth bass and a 15-inch minimum length limit on channel catfish. Both of these species are further protected by a two-fish daily creel limit. These and other regulations are posted at the lake. For more information, contact the KDWP Region 2 Office, 785-273-6740.

—KDWP news

FLOAT FISHING APPROVED

The Kansas Wildlife and Parks Commission approved a pilot project to allow floatline fishing at eight reservoirs beginning this summer. KDWP staff recommended the addition of this new fishing method to provide more angling opportunities on reservoirs with untapped channel catfish populations. Floatline fishing, sometimes called "jug fishing," allows Kansas anglers to use no more than eight floatlines with no more than two hooks attached to each line. Anglers will be allowed to use floatlines during daylight hours from July 15 through Sept. 15 at eight Kansas reservoirs: Hillsdale, Council Grove, Tuttle Creek, Kanopolis, John Redmond, Toronto, Wilson, and Pomona.

A floatline permit (available for $2.50) will be required, enabling department staff to survey floatline anglers during this three-year pilot program.

All floatlines must be under immediate supervision of the angler and must be removed from the water when fishing ceases. Materials used for floats are restricted to "closed cell" devices made of plastic, wood, or foam; metal or glass floats are not allowed. Closed-cell floats do not hold water, which will help prevent the spread of zebra mussels. Floats must be marked with the angler's name and address.

—KDWP news

King Strut

by J. Mark Shoup
associate editor, Pratt

photos by Mike Blair
photographer/associate editor, Pratt

The cuts, draws, streams, and severe topography of the Red Hills provide a perfect environment for stalk-and-call turkey hunting, and one spring I found myself in the heat of the chase in this stunning landscape. Having sat for about an hour earlier in the morning only to hear but never see gobblers in thick cedars, I had decided to move on, slipping across low ridges and scanning corridors where cedars yielded to grassland along one small creek flowing east toward Medicine Lodge.

The black turkey gobbler, the tips of his beautiful tail; above us the dawn becomes yellow. Sunbeams stream forward.

—traditional Apache chant

This is a strategy for the impatient hunter, I suppose. One can spend all day at it, but not without a nap or two in the warming sun. Perhaps "hunt-and-rest" might be a better name, but a day outdoors in spring is time well spent. By late afternoon, my blood fired up when I spotted two strutting toms and three hens flirting in the open grass about 100 yards away. The game was on.

While it is known that wild turkeys were historically found in Kansas, most Kansans older than 50 never saw a wild turkey growing up. In the late 19th and early 20th centuries, the turkey was nearly extirpated from the state because of unregulated hunting. Biologists believe that most were found in the central and eastern portions of Kansas, where steams, forests, and large trees for roosting were found. However, the Red Hills held good numbers of Rios.

According to a 2001 study entitled *Survey of Kansas Wild Turkey Hunters,* by the Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Rio Grande turkeys, one of two subspecies believed to have historically occurred in Kansas, were observed near the Oklahoma/Kansas border in 1958. This discovery inspired the Kansas Forestry, Fish, and Game Commission (now KDWP) to trap birds from these flocks and transplant them to other portions of the state, perhaps the most successful wildlife reintroduction project ever undertaken in Kansas. From 1966 through the mid-1970s, wild turkeys captured in Texas, Oklahoma, Missouri, and Iowa were transplanted to Kansas. Rio Grandes were brought from Texas and Oklahoma to establish populations in the southwest and southcentral portions of the state, and eastern wild turkeys obtained from Iowa and Missouri were introduced in central, northeastern, and southeastern counties. Once those populations became established, some were transplanted to other parts of the state.

The state's first wild turkey hunting season was conducted in 1974, when 400 permits were issued for the spring hunt. During this season, 123 birds were harvested, a 40 percent success rate. Hunter success in Kansas in spring seasons has fluctuated from a low of 36 percent in 1977 to more than 60 percent in recent years.

Wild turkeys now thrive in most of Kansas, and most residents, hunter and nonhunter alike, have enjoyed seeing them. As is the case with most game species, however, wild turkeys are at the mercy of the weather. In the past four years, portions of south-

eastern Kansas — generally considered excellent turkey hunting country — have suffered the wrath of Mother Nature.

Extraordinarily heavy rains during the nesting and young poult survival period — late May through late June — have resulted in population declines in the general area south of Kansas City, east of El Dorado, and southeast of Emporia to the Missouri and Oklahoma borders. According to mail carrier surveys, per capita 2007 production success of wild turkeys in this region was the lowest since record-keeping began in 1986. 2008 was not much better, recording the second lowest production index. During this time, heavy flooding wiped out nests, and cool, wet weather killed many young poults before they were able to regulate their body temperatures. The result: a reproductive rate of less than one-half a poult per hen when the norm is two poults per hen. For this region of the state, the 2009 hunt will be difficult due to poor production from the previous two seasons.

"I expect to see a reduction in the success of turkey hunters on these areas this spring," says Jim Pitman, KDWP small game coordinator. "The majority of our harvest is two-year-old gobblers, and that age class is just not there right now. And a drought last year in the far southwest portion of the state will likely result in a similar situation in a couple of years."

At this point, the avid hunter may be asking what KDWP is going to do about the situation. Limit turkey hunting in these areas for a time? Reduce permit numbers? Despite a few years of bad weather, such measures are unlikely.

"Fall harvest is when hunting might have the potential to harm turkey populations because that's when we allow hens to be taken," Pitman explains. (Only male turkeys are legal to harvest in the spring and taking males does not limit production.) "The harvest of fall gobblers has little effect on population growth. Last fall, we only shot about 4,000 turkeys in the entire state — a fraction of the spring harvest and down from previous years — and only 36 percent of the birds taken last fall were hens.

"In the southeast, if we were to reduce the number of fall permits per hunter from four to one, it would result in a harvest reduction of only 100 to 150 hens. This is insignificant. If bad weather continues, we may consider such action in the future, but I don't think it will turn the tide."

All is not bleak for the Kansas turkey hunter, however: far from it. Turkey populations in the rest

Beauty is in the eye of the beholder. As a tom displays for hen, blood turns the folds of neck skin, or "caruncles," bright red. The top of its head will be a pale blue. The flap of skin above the beak is called the "snood," and it will grow larger during display.

of the state are thriving, even in the northwest, where populations continue to grow, according to Pitman.

"I think Kansas turkey hunters should have a great year in most of the state," Pitman says of the spring 2009 season. "The north-central and northeastern portions of the state may be the very best, but good hunting should be found almost everywhere but those two areas hit hard by weather."

Kansas turkey hunters are preparing for the spring season, which opens on April 1 for youth, hunters with disabilities, and archers. Then on April 8, the regular season opens and runs through May 31. Despite population reductions in some areas, many spring hunters will be successful. In fact, even if hunter success drops, Kansas hunters will still boast one of the highest success rates in the nation.

Equipment is a matter of personal preference. Most turkey hunters use a shotgun, and Kansas law allows only shotguns 20-gauge or larger using shot sizes #2 through #9. Most shotgun hunters prefer a 12-gauge, chambered for 3-inch shells, with shot sizes #4 through #6 the most popular. Turkeys can be taken easily with a 20-gauge, however; the important thing is to match pellet size and choke with the distance you're comfortable shooting. Turkeys are big birds, so most hunters opt for #6 shot or larger and a modified or full choke. Everyone should know their range, practice, and be sure to pattern shotguns. (For more on patterning, see Page 13.)

There are a number of different hunting techniques. All include one important element: scouting. While some hunters are successful without prior scouting, one's odds increase dramatically if time is taken to visit hunting areas early in the morning or late in the evening before season. Seek out rivers, trees, shelterbelts, and mature timber. Sit in one spot and listen. If you don't hear birds in an hour or so, move on until you find them. Once birds are found, be careful not to disturb them, so they'll be around when you return for the hunt. Evening is often the best time to scout; if you're in the woods when the birds fly up to roost, you'll know exactly where they'll be in the morning.

In the western two-thirds of Kansas, the Rio Grande subspecies flourishes. This bird is quite at home in the open grasslands but prefers to roost in mature timber.

"In spring, turkeys generally split into three groups: gobblers, jakes, and hens," says Pitman. "They always stay close to good habitat but may travel several miles in a single day, especially in western portions of the state where trees are not as plentiful. If they're not disturbed, they usually come back to the same general area to roost."

One of the more popular tools in recent years is the pop-up blind, a relatively new product that can be found almost any place that sells hunting equip-

ment. These light, portable hideaways are easily carried into the field and can be set up in just a few minutes. Camouflaged, they provide excellent cover from the wary turkey's keen eyesight. About the size of a small, high tent, most can easily accommodate two adults, and they are perfect for the elderly and children who can't sit still long. The portability advantage makes it easy to move hiding spots, as well. Because wild turkeys are quick to notice any movement, pop-up blinds are an excellent choice for the bowhunter, whose movement in pulling to full draw may otherwise be easily spotted by most turkeys.

Those who eschew such modern encumbrances simply look for good cover, often surrounded on three sides by thick brush or cedars with a decoy set in front. Using this technique, be sure to give yourself some small viewing lanes to the left and right, especially if you are bowhunting and need to come to full draw before a gobbler pops into sight. No matter what equipment you're using, one must keep as still as possible. Wild turkeys have extremely good eyesight and may bolt at the slightest movement.

"Ideally, you should be set up early in the morning between the gobblers and the hens," Pitman explains. "Hens normally come to strutting gobblers, so when you call a gobbler to your hen decoy, you're coaxing him to do something against his nature. That's part of the challenge and excitement of turkey hunting that I love."

Calling is essential to successful turkey hunting. There are many different calling tools, including box calls, slate calls, and diaphragms, which have the advantage of leaving one's hands free. Some avid turkey hunters have mastered the skill of calling with their own voices. Each call has its advantages, and experienced hunters carry several different types. A box call, for example, has a resonant tone that will carry long distances while the slate call is considered by many to produce the most accurate imitation of a wild turkey's call.

In eastern Kansas, both eastern and Rio Grande subspecies are present and they will readily hybridize. Hybrids are difficult to identify as they usually exhibit the characteristics of one subspecies or the other. *Marc Murrell photo*

No matter the choice, calling takes experience. Choose your calling tool and have an experienced hunter teach you how to call. There are also many good calling instructional tapes on the market. Once in the field, however, it's important to "call to your talent," as Pitman says, meaning that bad calling or over-calling may scare more birds than it attracts.

"I'm generally a soft caller," Pitman adds, "but it depends on the bird. If he's reluctant to respond, I may work him harder, but once he starts my way, I usually ease off and let him come."

There are several different call sounds. The simplest and first to learn is the yelp, and second is the cluck. Most hunters can kill a bird just by mastering these two simple calls. In addition, there is the purr. Cackling is a quick series of yelps, and cutting is a quick series of clucks. A good instructional tape will demonstrate each.

The novice hunter may ask about the gobble, which is the most dramatic sound in the spring woods. Caution is advised when considering this call.

"You always have to be careful about gobbling," says Pitman. "I advise against it unless you are absolutely sure you are alone in the woods. This is impossible on public land, and you can never be sure on private land, either. A gobble can be effective in attracting a jealous gobbler, but it can also attract an anxious hunter."

Spring is a fantastic time to be in the woods, listening to a myriad of songbird notes as well as the splendid calls of the wild turkey, which command attention of anyone who sits quietly and listens. Or of one who decides to go for the chase:

Spring turkey hunting is a perfect activity to enjoy with youngsters. A pop-up blind can be an advantage since little ones may have trouble holding still. The sounds and sights of a spring turkey hunt can be exciting for youngsters who tag along.

I snuggled in the banks of a crevice cut by rainwater, a tributary to this small stream, and yelped. This attracted the two gobblers' attention momentarily, but the sight of one's amorous aspirations must be more attractive than her voice. The hens soon ambled to the east, along the opposite side of the creek, and the gobblers followed. I let them go another 100 yards or so before I began creeping, crawling, and wriggling from tree to stump to the slightest ridge that would keep me out of sight. Fortunately, sloping topography and vegetation on the opposite site of the creek hid the birds completely from time to time, and I was able to close to within 75 yards in about 30 minutes.

Here, I found myself under an Osage orange tree, my back against a fence post. The birds were 90 degrees to my left when I yelped and clucked again. Occasionally, a head popped up, and back down. Then for some reason, a large tom abandoned his pursuit and backtracked, keeping close to the opposite side of the stream, mostly out of sight. I called off and on, however, noticing a gap in vegetation directly in front of me. If he were to take a peek my way from that spot, I'd have a shot.

It was like a scene from the movie *Sergeant York*: the gobbler would disappear, and I would be silent for awhile, then call, and the head would materialize for a brief second. Each time, the bird was closer to the gap. Then it disappeared. I steadied my shotgun at a spot in the middle of that small gap and called one last time. Up popped the head 35 yards away, and my shot echoed across the valley. The bird disappeared.

Certain my shot was clean (or that the bird would be gone if it wasn't), I leaped up and trotted toward the opening. Just a few steps and I could see it flapping on the ground, the last primitive neurological struggle of an already dead bird.

This was the first turkey I had ever hunted and called on my own, and the experience was overwhelming. As I reached the bird, I kneeled and held it up by the neck. A 9-inch bearded, mature tom. The sky above was splashed with oranges, reds, and purples so distinctive of the Kansas plains, and the air was fresh as pure oxygen. The perfect ending to hunt like no other I had experienced growing up in Kansas because yes, I am over 50.

A NOTE ON SAFETY: While Kansas reports few turkey hunting accidents, it's important for any hunter, whether using bow or shotgun, to set up in front of a large tree or other protective cover in case another hunter should approach from the rear and hear calling or see the decoy and not recognize your presence. Many hunters tie a bow of bright orange on the tree above them to alert other hunters. Another excellent procedure is to wear hunter orange to and from the field and between set-ups. Never wear anything that resembles the coloration of a wild turkey, such as blue or red. Never stalk the call of a turkey. Assume what you hear is another hunter. If another hunter approaches your position, whistle or yell to alert him of your presence. Above all, be absolutely sure of your target and what lies beyond it before firing.

THE SAGA OF THE BLACK RAIL

text and photos by Bob Gress
director, Great Plains Nature Center, Wichita

I had been asked if there was one bird that I always wanted to photograph and had not. Without hesitation, my answer was the black rail. Getting some bird photos is easy, and then there is the black rail . . .

I'm not even sure anymore when black rails became my photographic nemesis. They entered my consciousness many years ago when I became aware of their presence at Quivira National Wildlife Refuge. I don't remember who identified the strange call for me that was coming from the flooded meadow, but as with nearly everyone, my early encounters were all "sounds only." Eventually, after many years of hearing the kee-keeder in the marsh, a glimpse of a tiny black form darting through the cattails was my first official sighting. Over the next ten years, I may have accumulated a total of two seconds of observations from a half dozen frustrating glimpses. During those early years I played a cassette tape recording of the rail's call in an attempt to attract them and even got the camera ready, just in case a bird might show itself to its vocal rival. However, by today's standards that hardly even qualifies as a photo attempt.

In 1998 Suzanne Fellows of the U. S. Fish and Wildlife Service, my wife Mary Butel and I had a black rail between us at Coldwater City Lake, the only other area in Kansas known to have a tiny population of the secretive birds. We all pointed to the sound coming from the cattails no more than 6 feet from any of us. Eventually I saw the black blur and they both missed it. I didn't have time to even move the camera.

About four years ago I decided that to get publishable photos, all I had to do was put in enough time and find, (1) the right combination of camera, lens and flash, at the right settings, to photograph a sparrow-sized black bird at night; (2) the right combination of area lights so I could see the bird in the darkness; (3) the right spot for the bird to be so I could find it in the thick vegetation; (4) a method of getting the bird to go to that right spot; and (5) sufficient hormone levels (the bird's, not mine). I coordinated my efforts with the staff of Quivira National Wildlife Refuge and got the necessary federal permits to access the refuge and use lights at night. For several years, I experimented with different set-ups, and I amused the rails as they laughed *kee-kee-der*. I tried mornings. I tried evenings. I tried nights. The rails laughed *kee-kee-der*. The following is a journal of my quest.

Looking like a warrior in a low-budget space movie in his nighttime photo gear, the author expresses some of the frustration he endured during his quest for a quality black rail photograph.

MAY 5, 2007

May 5, 2007 — I tried again at Coldwater City Lake. Not one rail could be coaxed into a response, even though I had heard them the week before at Quivira. By 8:30 that night a nasty northbound storm was bearing down on the lake, lightning was popping, and I decided to retreat to a motel in town. Around 9:00 p.m. the whole town lost electricity and the storm passed directly overhead. By 9:30 I was taking lightning pictures, from the motel parking lot, of a fantastic light show just north of Coldwater and bearing down on Greensburg. I'd never seen a storm like that one. Tornado sirens sounded and every emergency vehicle in town headed north out of Coldwater. By 11:30, and still with no electricity, I went to bed. The next morning I drove north and discovered what had happened the night before when the tornado leveled Greensburg.

I tried a few more times at Quivira in 2007; rails laughed *kee-kee-der* and I found it more rewarding to go photograph shorebirds. David Seibel, from Kansas City, was also experimenting with photographing this bird and was also failing to get photos, so we compared notes and plotted, planned, and studied for 2008. I had new ideas and plans, Seibel had his own strategies, and we combined our schemes.

MAY 2, 2008

May 2, 2008 — The Quivira wind howled, and it was cold. Seibel and I had a black rail respond to a recording mid-afternoon, and I saw two birds briefly flutter together about a foot high before diving back into the sedges. That was a major sighting! That evening, standing in the wind and the dark, with rain mist in the air, no birds responded to the tape. We were freezing and wet, and we quit by 11:30 p.m. Next time!

MAY 3, 2008

May 3, 2008 — It was perfectly calm with no moon, and a black rail called as we got out of the truck around 10:30 p.m. It was close to the road. We prepared our equipment — lots of equipment. We had cameras with big lenses on tripods, flashes on top of long flash brackets, and flashlights with red cellophane taped to the lenses for focusing. We had lights diffused with red cellophane for watching and red miner's lights on our foreheads for reading camera settings. We moved closer and placed the remote speaker about 15 feet out under a mat of dried sedges. We stood ankle deep in marsh water and played a black rail call, and immediately a rail called back aggressively. It sounded like it was under thick sedges about 8 feet from the speaker. Over the next half-hour, we played the rail call — call off, call on, call off; we waited quietly in the dark. By listening to the rail's call volume, we could follow it as it came near, retreated, came closer, then retreated. We looked and looked and never saw the bird. Not enough hormones in the bird? We packed up and heard the rail flutter off into the night. We could hear no other black rails in the marsh. We went to bed about 12:30 a.m. Next time!

MAY 8, 2008

May 8, 2008 — Seibel couldn't join me, but I planned to try for rails at Quivira after an evening presentation to the Great Bend Camera Club. Rain and lightning

kept me from the marsh, and I drove on home. I was cruising in the dark at 60 mph when a lighting strike in the fence line exploded with a fireball the size of my pickup. It was no more than 50 feet away, and I immediately put my hand to the side of my face. It was hot! My ears were ringing; I blinked back and forth from eye to eye until my eyes readjusted after the flash. I didn't even make it to the rail field, but it was memorable.

After many failed attempts, the first success was fleeting. The rail darted across the mat of reeds and provided only a "butt shot," then disappeared into the dark marsh.

May 17, 2008 — Seibel and I met again at Quivira. We put on rubber boots and headed into the sedges at 9:30 p.m. Under a full moon, we sloshed through the boot-sucking mud toward a rail calling in the distance. It sounded like it was close. Four hundred yards later we finally got to the bird. We set up and turned on the calls, and eventually a bird came to the speaker! We should have been more careful preparing the area around the speaker. We each got two photos of the bird behind distracting sedges. Another bird called farther out. We sloshed on, did a better job preparing the area with a mat of dried sedges, and started the rail calls. About ten minutes later we saw movement, turned on the focusing lights, and the bird dashed across the platform to vanish permanently into the sedges behind it. We each got a single butt shot! All told, we heard at least eight different birds calling that night. Perhaps their hormones were taking over, but they still weren't aggressive or curious enough to allow a good photo opportunity. As Seibel put it, we had curious, but we needed furious. We got out of the marsh at 3:00 a.m., and after six hours of mosquito-buzzing-biting-swatting, standing in stinky swamp water with eyes straining in the darkness, we each had three poor images of a rail. We averaged one bad photo for every two hours of work, but we were thrilled. It was the most successful black rail photography night we'd ever had. We collapsed on sleeping bags at 3:30 a.m. and were back up photographing shorebirds with early light at 7:00 a.m. We were so close to getting the shot. Next time for sure.

May 30, 2008 — Seibel and I met on the Wildlife Drive around 6:00 p.m. We felt lucky! We planned to photograph birds while we had good light then meet over at the rail field. Shorebird migration was certainly winding down. There were not nearly the numbers we'd seen earlier in the month but still plenty of subjects to photograph. While the bird numbers may have dropped, the mosquito numbers had certainly increased! We met at dusk, and as I stepped out of my truck I immediately felt mosquitoes on my bare legs. I brushed both legs and killed at least a dozen in the first ten seconds. Was this an omen? I quickly put on some jeans and slathered up with DEET. It would be a very dark, calm night. Just a sliver of a moon would be out much later. We heard a black rail in the distance, but it was a long way out in the marsh. We were getting better at preparing our equipment, but it still took nearly a half-hour to get everything ready. I also harvested a 6-inch bundle of fresh cut sedges that we would use to hide the speaker. Finally ready, we were full of optimism and eager to get started, but no rails were calling. We strained to hear through the constant drone of mosquitoes. Then the rail on the far side of the sedge meadow called again. Darn. We were hoping for one close to the road.

We sloshed into the sedges. Since we were here two weeks ago, the sedges had grown significantly. It is hard to describe the feeling of trudging through this sedge meadow at night without using a flashlight. In the darkness it is impossible to see where you are stepping or what lies ahead. The growing plants were only about two feet tall, but they were emerging through dried waves of sedges accumulated from last year's growing season. If the mat was flat on the ground, walking was easy, but this was rarely the case. Much of the time the mat was suspended in this year's growing crop about a foot above the ground. Every step plunged back through this mat of vegetation, into about three inches of water and then into the mud. With every step we stirred up a new cloud of mosquitoes that joined our hovering halo held at bay by the magic of DEET. It was very dark, and it was fun to see the many stars always hidden in our urban skies, although we figured the stars tonight were outnumbered by the mosquitoes.

By the time we made it across the meadow the rail had quit calling. We stood in the darkness listening. We tried playing our rail calls, but no bird responded. Why were they so quiet tonight? Where were they? Finally a different bird called. It sounded to be several hundred yards to the east. Off we sloshed. When we got close it quit calling, and it also ignored our calls. After a couple of hours of this, our optimism was dwindling. Another bird called back by the road, not far from where we had started. Off we sloshed. When it also went silent, we made our way back to the road, almost ready to concede another night to the rails. At least we could walk again in relative comfort.

Then another rail called, and it was close! It was calling from the ditch no more than ten feet from the edge of the road. We set the speaker under our portable mat of sedges and played a call. He called back. That was good. Then the bird got quiet. That was better. It was approaching. We saw movement at the edge of the sedges. Shutters and flashes popped. It crossed the mat searching for its new neighbor — more shutters and flashes. The rail doubled back across the mat and was gone. According to the time recorded on the photos the visit lasted about 9 seconds. We could not convince this rail to give us an encore.

It was now nearly midnight. Across the marsh we could hear a couple of rails. Off we went. They got quiet. Back we came. We were getting tired and must have been walking with our mouths open. I heard Seibel coughing and sputtering behind me, and then I also inhaled a mosquito and managed to cough it back out. We inhaled and spit our way across the marsh, stopping long enough to discuss the calories in the half dozen we digested. By the end of the night, we had mosquitoes in places we didn't know they could go. Seibel discovered one smashed between his left eye and his glasses, and at least one that he inhaled went into his nostril, not his mouth. Neither of us was complaining; we were both happy to have gotten a decent shot of a black rail, though there was still room for improvement.

Twenty seconds of glory. That was total time this rail appeared on the mat of reeds the author had assembled on top of the electronic caller. It those seconds, the author captured this and many other images of the elusive subject.

Our roadside friend was still calling when we returned at 2:30 a.m. Would the bird respond again if we set up on the marsh side of the ditch? Maybe it would think this call was a different neighbor. We set up. The rail talked to our recording. Then quiet. Great, the bird was moving. Like a mouse, it suddenly emerged onto the mat. Cameras and flashes popped. The bird disappeared back into the darkness and the protection of the sedges. We shut off the calls. We would let the bird think it had chased away the new neighbor. After ten minutes we tried again and this time the bird made an encore appearance. This time the bird stopped and stood frozen for a full 20 seconds, staring in the direction of the speaker. I'd never seen a black rail that wasn't moving! Cameras flashed and flashed and flashed. The bird turned, came toward us, and then disappeared into the darkness. We spent nearly seven hours in the marsh and had managed almost 40 seconds of viewing/photography time. Standing in the darkness, reveling in our success, high-fives seemed appropriate. We packed up and welcomed sleep at 4:00 a.m.

For years, one of my goals was to get good photographs of a black rail. Now that I have the photos, I realize that the real reward was the journey.

RENOVATING MILFORD HATCHERY

text by Steve Priller, *hatchery biologist,* **and Harold Jagerson,** *hatchery manager*

The Milford Hatchery was nearing the end of its 25-year life-expectancy when a facility evaluation was performed. The result was a 5-year renovation plan that has been completed and will allow the hatchery to produce fish for years to come.

The Milford Fish Hatchery (MILH) is one of only a handful of warm-water, intensive fish culture facilities found in the United States. An "intensive" hatchery raises large numbers of fish in comparatively small volumes of water, usually raceways. Water quality, food, and other treatments can be strictly controlled in the intensive system. There are three other KDWP-operated hatcheries, all of which are "extensive," where fish are raised in ponds.

When construction began on the hatchery in October 1983, the plan was to create a facility that would meet or exceed the demand for sport fish in Kansas, and yet leave enough flexibility for the facility to change as advances in warm water culture continued. Because of this unique set of design challenges, the facility was predicted to have a production life of 25 years. After this time, the hatchery would be evaluated and a decision made whether to repair the facility, or explore another option. Consequently, all engineering designs, construction materials, and production expectations were based on a life expectancy of 25 years. An infrastructure assessment was completed in April 2002 after the hatchery had been in full operation for 18 years. That on-site evaluation of existing conditions resulted in the development of a 5-year capital improvement plan. Staff noted that many of the repairs could be completed during off-peak production times without shutting down hatchery operations. However, eventually the facility would have to be closed to facilitate some of the major repairs.

Major improvements were made to the large and small aeration towers while the hatchery was still in production. Water used to culture fish in the raceways and hatchery buildings must be pumped from either the hatchery supply pond, ground

wells, or a combination of both, depending on the season and water quality issues. This water travels up to one-half mile via a 24-inch line before reaching one of the two aeration towers. As water cascades down over the towers' deflection baffles, excess nitrogen is stripped and oxygen is added before the water is gravity fed to the facility

After more than 20 years of nearly constant flow, the deflection baffles were corroded and failing, and material build up was restricting the flow and proper aeration of incoming water. Additionally, the tower walls were wearing thin in certain spots, creating the potential for a larger failure.

A temporary "tent" was constructed over each of the towers, and they were sand blasted inside and out. Plates were used to reinforce weak spots along the tower walls, and new deflection baffles made from water-grade aluminum were constructed. An 11-stage paint system was applied inside and out, and access points were fabricated to allow for future maintenance.

When the hatchery opened in 1985, there were four ground wells available for fish culture and production needs. Due to the unique water chemistry of these wells, mineral deposition and iron bacteria buildup in the well screens restricted the flow of water from the surrounding field into the wells. Eventually, well production was reduced or failed resulting in a loss of 1,000 gallons per minute for fish production. During the infrastructure assessment in 2002, it was also determined that there was a need for an additional 500 gallons per minute of well water inside the hatchery buildings.

To remedy the over-pumping of well fields, MILH staff completed training so they could provide weekly, monthly, and annual maintenance for station ground wells. The facility also implemented an aggressive preventative maintenance schedule, including bi-annual well rehabilitation, to maintain optimal operation levels and comply with existing water rights. Well rehabilitation is considerably less expensive than drilling a new well, and less effort is needed to rehabilitate a well when treatment is administered in the early stages of decline.

To supply the additional 500 gallons per minute of well water to the hatchery buildings, an existing well field was rehabilitated and a new pump and motor with a variable speed drive was installed. This well can provide up to 1,000 gallons per minute to hatchery buildings, or supply well water to raceways 1-8 independently of the surface water system.

MILH added six lined production ponds in 1995 to help increase production as demand for predacious fingerlings (walleye, sauger, saugeye, wiper) increased. During peak production in these ponds, the water quality can deteriorate due to a large number of fish and available water flow. To combat the lower flow and improve water quality, a pond mixing system using floating electric motors was implemented. The original system of wiring proved to be inadequate, and improvements were necessary to keep up with the electrical demands of the mixing system.

A new transformer, circuit breakers, and wiring were installed to each of the six ponds. Three new satellite junction boxes were buried along the central pond dike to allow for more flexibility and quicker diagnostics should a failure occur, and service outlets were upgraded. The upgraded hardware and design has allowed the movement of 25 percent more water while utilizing approximately 25 percent less energy.

When the hatchery opened 24 years ago, a domestic water system consisting of a well, dual pressure tanks, water softener and chlorine injection pump served the needs of the hatchery and three residences. The Milford Nature Center was constructed shortly thereafter, and was plumbed into this system.

One of only a few "intensive" warm-water hatcheries, Milford raises fish in raceways, where water conditions and fish health are closely monitored.

This photo shows a concrete vault that will allow access to water-control valves. Old valves were buried 8-feet deep and could not be accessed for maintenance.

However, as the Nature Center's visitation increased, the demand for water has taxed the existing soft water supply and the chlorinator capacity. Additionally, the piping leading to the hatchery from the domestic well has failed numerous times due to "hard start" pumps and poor design.

Repairing the domestic water system was done in three phases. Phase I included drilling a new domestic well adjacent to the existing system while the hatchery was still in fish production. Phase II and III were completed concurrently with the other construction projects during the temporary closing. A "soft start" pump coupled with a variable speed drive has reduced repairs and downtime to the four different domestic water applications using this potable system. Several repairs were made inside the hatchery, including a chlorine gas injection system, larger softeners, new pressure tanks, new plumbing, gauges, and an in-line filter to help provide 100 gallons per minute of softened water for visitors, residences, and hatchery use. This new system is now in compliance with domestic water regulations established by the Kansas Department of Health and Environment.

During peak production periods, tens of thousands of pounds of fish are on station awaiting distribution to state waters. Water chemistry and temperature require a liquid oxygen system to augment the total amount of oxygen available to fish during this time. However, the piping providing this oxygen to the raceways and hatchery buildings failed at times, creating significant concern for hatchery staff. In addition, the piping did not meet current code requirements for safety.

This project was completed in two phases. During Phase I, the liquid oxygen storage tank was refurbished, painted, and labeled with correct stickers and decals. The remaining phase was completed during hatchery closure. New copper piping was installed throughout the hatchery, complete with several safety and operational back-ups. These changes brought this system in compliance with all current safety codes and regulations.

To complete the remaining recommendations in the 2002 infrastructure assessment, the hatchery was closed for a significant period of time. The department's fish culture section came up with a "master plan" to minimize the impact on fish stocking programs during this closure. The timing of the closure was crucial so that the three other state hatcheries could pick up the loss in fish production. The culture section's goal to fill more than 90 percent of fish stocking requests was accomplished by the other three hatcheries and through a contract with Harbin Fish Farms, a private fish producer. During the major construction phase, hatchery staff also compiled a "punch list" of small but necessary repairs to be made to equipment, vehicles, buildings, and grounds.

A major portion of the renovation involved the buried valves and piping near the head of each raceway. Many of the old valves were frozen (through deposition or mechanical failure), leaking, or very difficult to operate. This made setting raceway flows, switching from supply pond water to ground well water, or mixing pond and well water to regulate water quality difficult to impossible. The hatchery's pump house delivers approximately 7,000 gallons per minute when operating efficiently, but MILH staff could only account for 5,800 gallons per minute due to leakage and broken valves. Access to these broken valves was limited as all plumbing was buried 8 feet deep under 8 inches of concrete. The only way to operate the valves was with a fabricated handle extended through a hole, which was sleeved into the concrete during initial construction, or an

above ground extension, which was actually just a continuation of that sleeve. Above-ground sleeves would fill with water during production and freeze or crack during cold snaps. Below-ground sleeves would fill with mud and sediment to the point where getting a bite on the valve below became difficult. Before construction, all raceways could be supplied with warm water from the hatchery supply pond, but only four of the twenty-four raceways had the ability to mix warm pond water with cold well water.

A large section of the concrete slab covering all raceway piping was removed to allow access to all raceway pipes and plumbing. Beginning at the large aeration tower, a new 12-inch ductile iron supply line was plumbed to all 24 raceways to provide warm water from the hatchery supply pond. The terminal ends of this pipe are within the end vault and are accessible should future repairs or upgrades be necessary. An 8-inch ductile line was also plumbed for raceways 1-12 to allow for a mixing of cold well water with warm supply pond water. This new pipe also runs parallel to raceway 1 and supplies the hatchery buildings with well water for egg hatching and feed training. One of the more dramatic changes is a 5-foot by 5-foot by 8-foot concrete vault that sits below ground at the head of each raceway. All piping, drains, ball valves, and gate valves for each raceway are now accessible for maintenance and repairs through the top of the vault, which is covered with an industrial grate . None of the valve operators are sleeved or buried and can be accessed without physically entering the raceway vault. The updated valves are a resilient seat gate style for water to the raceway, and flow rates are set with a butterfly valve positioned above ground, just before the oxygenation chamber. These new stainless steel chambers are fitted with opposing rows of PVC piping. PVC piping was selected for these chambers because it is inexpensive, easy to work with, and readily available. Finally, all wiring for raceway alarms and 110/220 electric outlets were replaced.

Quality water is usually a limiting factor in the intensive culture of fish as summer production can put thousands of pounds of fish in each raceway. MILH must make use of a raceway recirculation system to get the most return for the cost of pumping water, as well as improved water quality. The recirculation system runs on a high volume of low pressure air (HVLP), which is supplied by three industrial air blowers, housed in a separate building near the aeration tower. The original steel pipe supplying each of the recirculation chambers with HVLP air was connected to the header and chamber with a rubber coupler-type fitting. These couplers were failing along the length of the buried header, as well as where the exposed pipe entered the recirculation chamber. During periods of heavy rain, the seams in the concrete slabs and the seams around the recirculation chamber would bubble violently as water tried to fill these gaps.

New ductile steel headers and flexible pipe were seated in the vaults parallel to the piping used to supply the raceways with water. This provides the same accessibility for repair and maintenance for the HVLP air system. The flexible hosing is ribbed and durable, but is also very easy and inexpensive to replace if necessary.

This photo shows a new butterfly valve that feeds water into an oxygen mixing chamber. Controlling water temperature and oxygen content is critical when raising fish in this intensive system.

The single weak link in the entire water system at Milford is the lift station pumps and piping leading to the tertiary sewer lagoon system. All water used at the nature center, the hatchery offices, hatch house, start-tank room, the three residences, and the twenty-four raceways goes to the lift station pit. The lift station is an 8-foot by 20-foot circular cement pit with two 20 horsepower industrial trash pumps set near the bottom. Pumps are connected via a flange type coupler to an 8-inch pipe that flows into a tertiary sewage pond system located 1/4 mile away. However, the pump couplers no longer sealed properly and allow one quarter of all water pumped to "blow-by" the sides of the couplers and back into the pit. Furthermore, there is no backflow check valve on the piping leading to the sewage lagoons, and water that did not get pumped to the sewer lagoons would flow back into the system, only to be pumped again. The pumps were set to cycle on and off according to the water pressure exerted on a membrane, which is read some 120 feet away through a length of aquarium air hosing. This hosing ran through the conduit utilized by the high voltage wires powering the trash pumps. When temperatures would fluctuate, condensation would form inside the tubing, and the levels at which the pumps would turn on, off, or work in tandem, would fluctuate accordingly. Eventually, enough condensation would prevent the pressure from registering, and the pumps would fail to engage and signal a high water alarm.

The pressure bell-type alarm system was suspect at best, and was replaced with a series of floats to control pump cycles. Pump on/off levels are simply set by adjusting the float height to the corresponding pump function. New couplers and flanges to correctly fit the model pumps used at MILH were installed to eliminate pump blow-by. The original couplers had to be chiseled out of the existing concrete form, and new couplers and concrete installed. The flanges on each of the pumps now serve as an alignment guide and lock tightly into place after installation. An additional inspection vault was added as the 8-inch pipes first exit the lift station. This new vault houses a back-flow check valve on each of the pipes with an indicator arm and pressure gauge to prevent water that hasn't been pumped completely to the sewage lagoons from flowing back into the pit. The vault is similar to the raceway vaults in that it provides unhindered access to the valves, and can show at a glance whether or not the valve is working. Fabricated cages or grates were placed at the end of each inflow or outflow tube within the sewer pond lagoon system to prevent any obstruction from occurring.

Not only do all race ways have new water-supply lines and valves, but the valves are accessible for maintenance now. The old valves were buried and inaccessible.

The Kansas Department of Wildlife and Parks has been challenged by Kansas' anglers to provide a high-quality fishery in the most effective and efficient manner possible. The renovation at the Milford Fish Hatchery is one answer to that challenge. Fishing pressure on Kansas' water bodies continues to remain steady, and supplemental fish stocking is a powerful and visible tool to keep anglers satisfied with department efforts.

Over the first 23 years of operation, the Milford Fish Hatchery has supplied billions of fish to management biologists to maintain and improve fishing opportunities for Kansas anglers. Typical fish species produced at MILH include blue catfish, channel catfish, paddlefish, walleye, sauger, saugeye, striped bass, wiper, largemouth bass, and smallmouth bass, all in varying sizes. With this renovation now complete, Milford should continue to enhance Kansas angling for years to come.

Kansas Shorebirding: The Next Level

by Helen Hands, *wildlife biologist, Cheyenne Bottoms Wildlife Area*

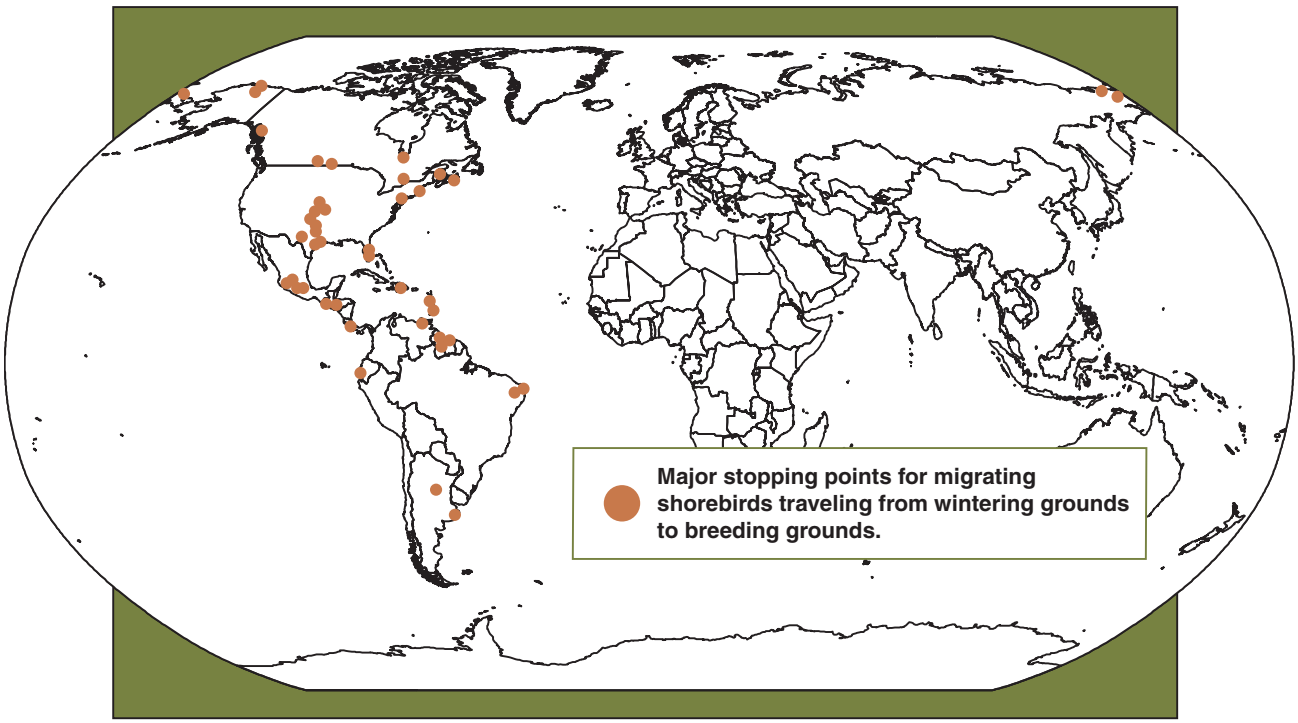
So you know a blue jay from a cardinal — can you tell a dowitcher from a stilt sandpiper? Watching shorebirds is as challenging as it is fun, and Kansas provides a variety of perfect shorebird venues in which to practice.

"Baird's sandpiper!" I nearly shouted as I sat up in bed. Then I realized I had been dreaming about identifying shorebirds after spending several days studying field guides trying to learn to identify all the shorebirds I might possibly see during my research for a masters degree. Little did I realize that shorebird identification would continue to be a pleasant challenge for the next 20 years.

When people think of wetland birds, ducks and herons are probably the first kinds that come to mind, probably because they are large and conspicuous. Most shorebirds are small, and though nearly all species prefer to feed in open marshes, most species aren't brightly colored. So, if you're looking for another birding challenge, shorebirds can certainly fit the bill.

Forty-one species of shorebirds have been identified in Kansas. Most species rely on wetlands, but some, including upland sandpipers and long-billed curlews frequent grasslands. Although shorebirds are typically thought of as coastal birds, Kansas has two of the most important migratory stopover areas for shorebirds, Cheyenne Bottoms Wildlife Area and Quivira National Wildlife Refuge. Located in the central portion of the state, these marshes are so important that the Western Hemispheric Reserve Network has recognized the Bottoms as a site of Hemispheric Importance and Quivira as a site of Regional Importance.

American avocets by Mike Blair



Twice a year, most species of shorebirds make long migrations between their wintering areas and breeding areas. Some long-distance migrants travel 10,000 miles one way between their wintering areas in southern South America and breeding areas in the northern portions of Canada and Alaska. Some shorebirds stopping in Kansas will even go as far as Siberia to nest. When migrating over land through interior portions of North America, shorebirds can make shorter flights between stopover areas as long as they can find suitable feeding areas to replenish their energy reserves. One-third of the shorebirds passing through Kansas are classified as long-distance migrants (travel over 9,000 miles one way), about 50 percent as intermediate-distance migrants (3,900-9,000 miles), and about 10 percent as short-distance migrants (less than 3,900 miles).

From 2002-2006, more than 80 volunteers conducted shorebird surveys at 54 locations throughout Kansas. The volunteers were asked to count shorebirds twice a month during spring (mid-March through May) and summer-fall (July through October), the times when shorebirds are most likely to be in the state. From their data, we can learn which are the most common species, where to find shorebirds, and when to look for them.

What are the most common species?

During the 2002-2006 statewide shorebird survey, dowitchers, Wilson's phalaropes, and stilt sandpipers were the most common species and together comprised about 50 percent of the shorebirds reported. However, species composition differed between spring and summer-fall. Wilson's phalaropes and white-rumped sandpipers were a couple of the most common species in spring, but only Wilson's phalaropes made the top ten in summer-fall. Least sandpipers and killdeer were the third and fourth most common species in summer-fall, but ranked only eighth and tenth, respectively, in spring.


stilt sandpiper by Bob Gress

Where are the best places to see shorebirds?

To see the largest numbers of shorebirds, you need to go to Cheyenne Bottoms Wildlife Area or Quivira National Wildlife Refuge. The next highest counts came from Slate Creek Wetlands (Sumner County), Flint Hills National Wildlife Refuge (Coffey County), The Nature Conservancy's Preserve at Cheyenne Bottoms, Marais des Cygnes Wildlife Area (Linn County), Elk City Wildlife Area (Montgomery County), and Kirwin National Wildlife Refuge (Phillips County). Although sites with the highest counts were similar during the spring and summer-fall migratory periods, shorebird numbers typically were higher at most sites during spring than summer-fall. Those sites attracting more shorebirds in summer-fall than spring include Fort Riley,

long-billed dowitcher by Bob Gress

Melvern Reservoir (Osage County), a sod farm near Lawrence, and sandpits near Garden City and Dodge City.

Cheyenne Bottoms Wildlife Area, Quivira National Wildlife Refuge, and Slate Creek Wetlands had the widest variety of shorebirds, termed species richness, in the state. Sites with the next highest species richness were Marais des Cygnes Wildlife Area, John Redmond Reservoir, Elk City Wildlife Area, Flint Hills National Wildlife Refuge, Kansas City Power and Light Wetlands near Gardner, The Nature Conservancy Preserve at Cheyenne Bottoms, and Kirwin National Wildlife Refuge. Again, species richness tended to be higher during spring than summer-fall.

Patterns in abundance for individual species mirrored those for total shorebirds in most cases. Major differences occurred for five of the 37 species

white-rumped sandpiper by Bob Gress

observed during 2002-2006. During spring, look for American golden-plovers primarily at Quivira National Wildlife Refuge and also at Marais des Cygnes Wildlife Area, Slate Creek Wetlands, and Elk City Wildlife Area. Solitary sandpipers were most common at the Flint Hills National Wildlife Refuge during summer-fall. Elkhart Sewer Lagoons and Quivira National Wildlife Refuge had the highest counts of spotted sandpipers during summer-fall. Highest counts of buff-breasted sandpipers were reported from Flint Hills National Wildlife Refuge and sod farms near Lawrence during summer-fall. (Other surveys have identified recently-burned native grasslands in the Flint Hills in spring and sod farms in Sedgwick County in summer-fall as buff-breasted sandpiper hotspots.) Pectoral sandpipers were most common at Marais des Cygnes Wildlife Area during spring and Flint Hills National Wildlife Refuge during summer-fall.

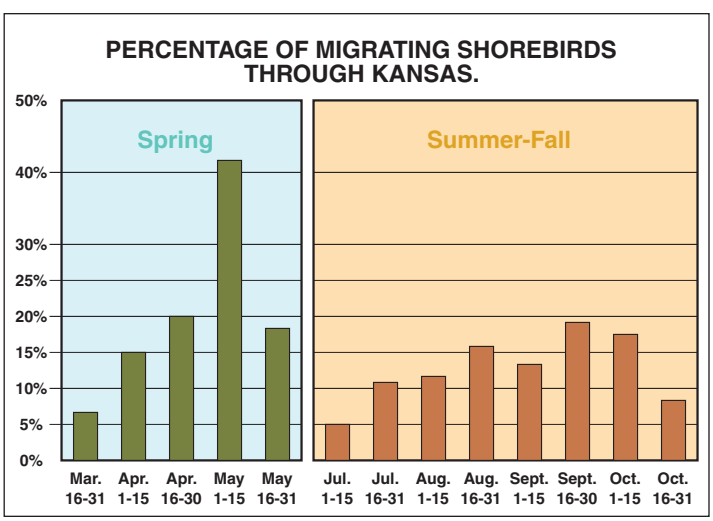
Baird's sandpiper by Bob Gress

black-bellied plover by Bob Gress

Wilson's phalarope by Bob Gress

When should you look for shorebirds?

Like all migratory birds, shorebird numbers ebb and flow with the progress of migration. This change in numbers through time is called migration chronology. During winter and summer, shorebird numbers in Kansas are at their lowest. Northward-migrating shorebirds usually begin arriving in the state in February, but few arrive until mid-March. Numbers of all shorebird species combined increase until reaching a peak in the first half of May and then decline rapidly as the urge to breed pushes them north. Most species of shorebirds follow this pattern in their migration chronology. Thus, based on migration chronology, if you want to plan a trip to view the largest numbers of shorebirds and the greatest variety of shorebirds, the first two weeks in May would probably be the best time to go.

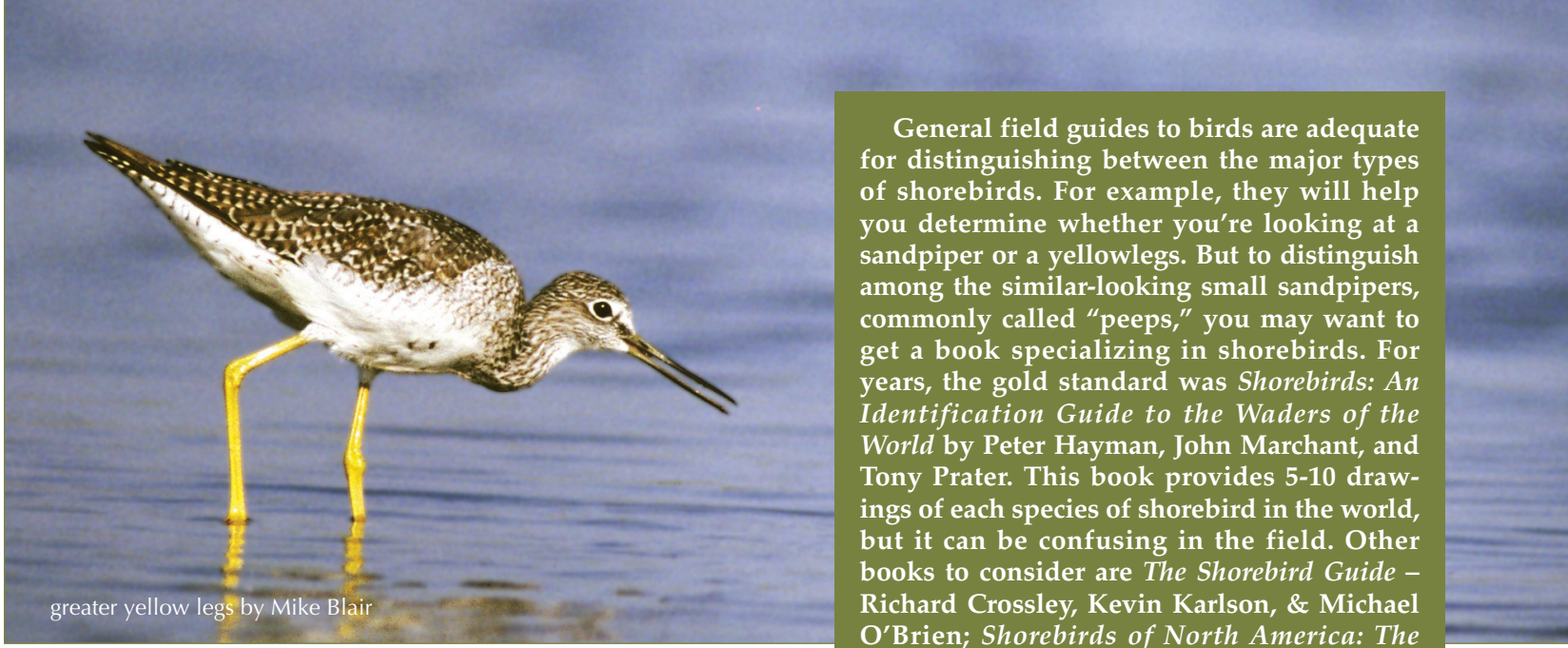


These graphs show migration chronology of all species of shorebirds in two-week periods though Kansas. The bars reflect the mean calculated from each of the five years of statewide shorebird surveys.

A few species exhibit a different pattern in their migration chronology. Greater yellowlegs and Baird's sandpipers reach their peak numbers in the first half of April; American golden plovers and American avocets in the second half of April; and snowy plovers, black-bellied plovers, and white-rumped sandpipers in the second half of May. After northward migration winds down in late May, most shorebirds spend at least the month of June on their breeding grounds. Nine species nest in Kansas, but Kansas probably isn't a significant nesting area for any species except possibly snowy plovers.

During summer-fall, numbers of all shorebirds combined are fairly constant from mid-July through mid-October. Underlying this fairly stable pattern in total shorebird numbers, several individual species exhibit marked peaks in their numbers. Snowy plovers and spotted sandpipers reach their peak in the second half of July. The first half of August is peak time for black-necked stilts and upland, solitary, semipalmated, and western sandpipers. Baird's, pectoral, and buff-breasted sandpiper numbers typically are highest in the second half of August. The first half of September is peak time for semipalmated plovers. Least sandpipers reach their highest numbers in the second half of September. Finally, dowitchers peak in the first half of October.

Migration chronology isn't set in stone. It can vary due to weather and habitat conditions; however, spring migration chronology is more regular than summer-fall migration. During spring, shorebirds are driven north by the urge to breed. Many shorebirds are in their breeding plumage in spring. That combined with generally sparser and shorter vegetation in spring make seeing and identifying shorebirds easier in spring. After the breeding season is completed, shorebirds apparently are free to fly south at a more leisurely pace, staying at stopover sites as long as food continues to be available and weather conditions aren't too harsh.


greater yellow legs by Mike Blair

General field guides to birds are adequate for distinguishing between the major types of shorebirds. For example, they will help you determine whether you're looking at a sandpiper or a yellowlegs. But to distinguish among the similar-looking small sandpipers, commonly called "peeps," you may want to get a book specializing in shorebirds. For years, the gold standard was *Shorebirds: An Identification Guide to the Waders of the World* by Peter Hayman, John Marchant, and Tony Prater. This book provides 5-10 drawings of each species of shorebird in the world, but it can be confusing in the field. Other books to consider are *The Shorebird Guide* – Richard Crossley, Kevin Karlson, & Michael O'Brien; *Shorebirds of North America: The Photographic Guide* — Dennis Paulson; *Shorebirds of North America, Europe, and Asia: A Guide to Field Identification* – Don Taylor; *Stokes' Beginners's Guide to Shorebirds* — Donald and Lillian Stokes

There are a few DVDs that may help you learn to identify shorebirds. They include: *Shorebirds of Kansas* - $25.00 (available on KDWP's website); *Shorebirds: A Guide to Shorebirds of Eastern North America* - $19.95; *Shorebirds of the Great Plains* – $24.99.

Also, check out this website: geocities.com/Yosemite/4413/sb_quiz.html

Shorebirding Tips

Before you head out to look for shorebirds, you might consider some tools to make your shorebirding experience more enjoyable. These tools include a spotting scope and identification guides.

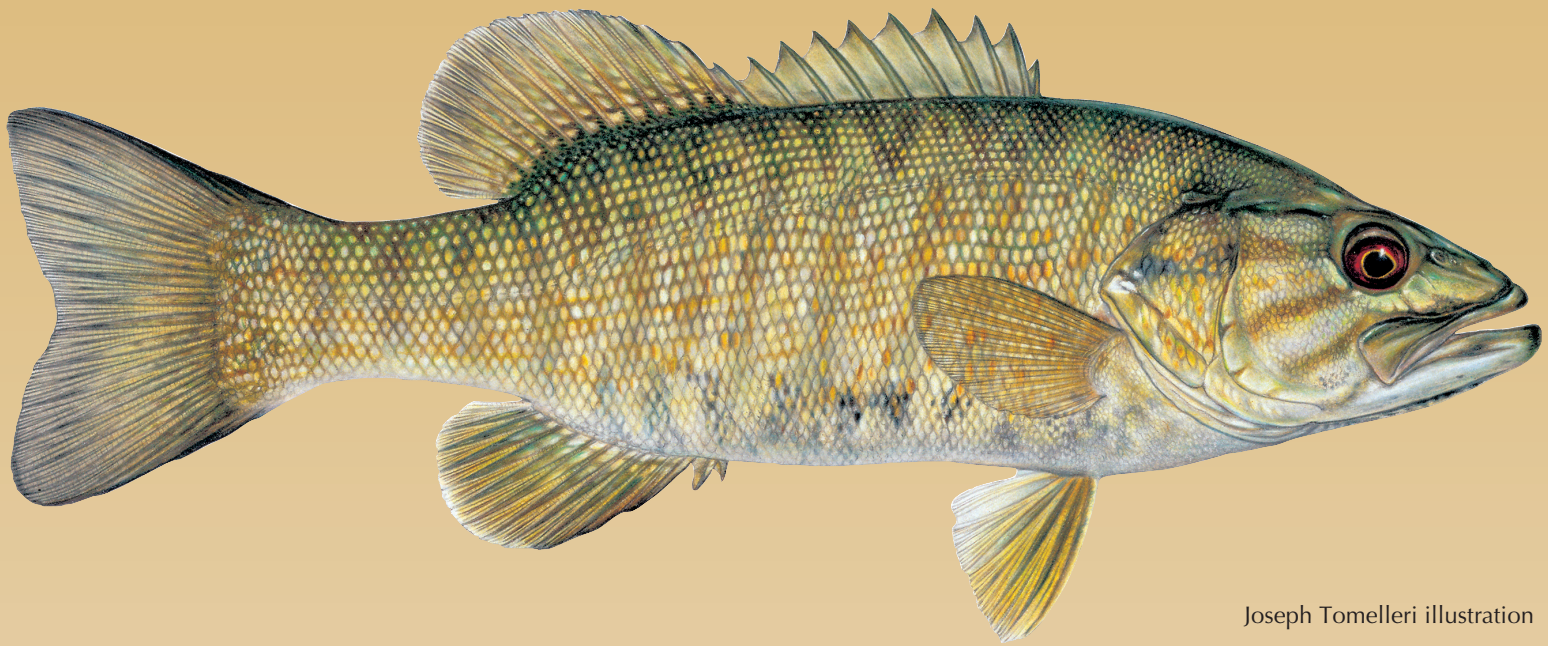
Binoculars can help you spot flocks of shorebirds, but you'll need a spotting scope to get a close enough look at individual birds to identify them. Spotting scopes easiest to use for birding have zoom eyepieces that allow you to adjust the power from 20x to 60x. Interchangeable eyepieces may be of higher quality, but don't provide the flexibility you need for panning flocks at variable distances. Other factors to consider when selecting a spotting scope are beyond the scope of this article, but such information is available in magazines and on the internet.

After you've selected a spotting scope, the next decision to make is what to mount your scope on. The choices include tripods and window mounts. If you will be shorebirding alone, a window mount is the most convenient and inexpensive ($20-$80) option. A window mount allows you to attach a spotting scope to your partially open vehicle window. That way you can stay in your vehicle and use it as a blind. At frequently birded places like Cheyenne Bottoms, most birds are habituated to people as long as they stay in their vehicle. Once you step out of your vehicle, birds are much more likely to flush.

If you will be birding with others who will be sharing your spotting scope, then you'll need a tripod. Unfortunately, tripods are more expensive ($50-$250).


black-necked stilt by Mike Blair


snowy plover by Bob Gress



Joseph Tomelleri illustration

Smallmouth: The Other Black Bass

text by Scott Waters, *district fisheries biologist, Glen Elder Area Office*

Smallmouth bass might be one of the hardest fighting fish that swim. The good news for anglers is that the brown bass are prospering in several Kansas lakes.

The first cast of the day was a sign of good things to come for my partner and me. We launched our boat on Glen Elder Reservoir before sunrise on a cool May morning and headed straight for the dam. My first lure of choice was the reliable 4-inch Senko, but my partner's crawdad-colored jointed Shad Rap was the lure that yielded the first of many smallmouth that day. The 14-inch fish aggressively attacked his bait and immediately headed for the surface. Several acrobatic jumps and numerous short runs later, the bronzeback was in hand for a few seconds of admiration and then quickly returned to the water to be caught another day. This was my first trip for Kansas smallmouths, and it certainly didn't disappoint. By lunchtime, we decided to call it quits and had hooked up with a healthy assortment of fish ranging from 10 to 19 inches. Repeated trips yielded similar results, and I officially became a member of the smallmouth bass fan club.

Traditional black bass angling in Kansas has focused on the largemouth bass. This species is extremely popular due to its aggressive nature, ability to attain weights up to 10 pounds, and relative availability in nearly every healthy water body. Spotted bass have also offered some fine angling in select lakes and reservoirs, but are best known for their native populations in southeast Kansas rivers and streams. Enter the third member of the black bass family, *Micropterus dolomieu*, better known as the smallmouth bass. Before the turn of the century, J. A. Henshall, author of *Book of Black Bass* (1881), declared that "inch for inch and pound for pound [smallmouth are] the gamest fish that swims." This declaration still applies today, possibly only rivaled by the hard-fighting wiper.

Most of the native smallmouth bass range is north of Kansas through the Dakotas, Minnesota, and up into Canada or east through the Ozarks and up into the Appalachian mountain chain. Smallies are classified as a cool-water species, preferring water temperatures below 80°F and water clarity greater than 5 feet. In Kansas, smallmouth bass are native to only a few streams in the

southeastern portion of the state. Aggressive stocking programs in the 1970s and 1980s allowed smallies to become established in several of the state's reservoirs, and they continue to flourish today.

Wilson Reservoir received its first smallmouth stocking in 1978 when 22,000 fingerlings were released with an additional 90,000 stocked the following year. Stockings continued over the next two years, and by 1982, fisheries biologist Bruce Zamrzla verified the first naturally produced fish in the reservoir. Stocking efforts ceased and the population has been able to maintain itself since.

Glen Elder Reservoir is another reservoir offering a strong smallmouth bass population. In the mid-1980s, fisheries biologist Ken McCloskey (now retired) saw an opportunity to enhance the Glen Elder fishery and make use of some relatively unoccupied habitat in the reservoir. It was thought that largemouth bass only occupied a small portion of the reservoir, but the main lake areas consisting of steep, rocky shorelines and shallow mud-gravel coves sloping off to steeper underwater rock ledges would support a new species. Given the smallmouth bass' tendency to occupy rocky areas and deep water, this seemed like an ideal fit. McCloskey stocked 45,000 fingerlings in 1984 and 120,000 fry in 1985, however the population did not establish and stockings were ceased.

Between 1994 and 1996, biologist Kyle Austin stocked 140,000 fingerling smallmouth bass in Glen Elder Reservoir. Only a handful of fish were collected until 1997 when 33 adults were sampled during standard fall electrofishing and the population appeared to have become established. Catch rates remained steady through 2003 when the population exploded and smallmouth bass easily dominated the black bass catch. As water levels continued to decline during several years of drought, largemouth bass recruitment faltered due to the lack of suitable spawning and brood-rearing habitat. During this same period, smallmouth bass continued to reproduce, recruit, and grow, thus allowing their numbers to greatly exceed the largemouth bass.

A look at the biology and life history of the smallmouth bass reveals why this species was able to adapt and survive while the largemouth numbers faltered. Smallmouth bass spawn in Kansas when water temperatures approach 55-60 degrees, which normally occurs in mid- to late April or early May. Milford Reservoir and Coffey County Lake smallies appear to begin spawning a couple of weeks earlier during the first part of April and will continue throughout the month. In general, the spawning season lasts up to four weeks, depending on weather patterns.

Males construct a nest on gravel or sandy substrate and guard it aggressively from other bass and predators. Nest depth is often determined by water clarity; the clearer the water, the deeper the male prefers to construct a nest. This serves to reduce the amount of sunlight on the nest and also provide further protection from above. In most Kansas reservoirs, spawning will occur in water less than 15 feet deep with nests usually constructed 5-10 feet deep. Generally speaking, the bigger the male, the deeper the nest and the earlier they will spawn. In addition, while not required, most nests are constructed near some sort of structure, including large boulders, logs, stumps, or vegetation. Once a female deposits her eggs on the nest and the male has fertilized them, it takes about four days for them to hatch. The fry remain with the male for 5-7 days until he heads for deeper water to recuperate. The young remain in the cover of gravel, rip-rap, or cobble structure and feed primarily on zooplankton and immature aquatic insects.

photo courtesy Scott Waters

Kirby Shamburg, of Randall, has learned to consistently find and catch smallmouths at Glen Elder Reservoir, as evidenced by this outstanding specimen he caught last year.

Adult smallmouth bass feed on a variety of foods with gizzard shad, crayfish, leeches, and aquatic insects their primary diet. I analyzed seasonal differences in stomach contents from Glen Elder smallmouth bass collected in July 2005 (summer), October 2005 and 2006 (fall), and May 2006 (spring). Stomach samples from black bass are easily obtained by inserting

plastic tubes into the mouth and forcing the food items out of the stomach. The fish are released unharmed with the exception of an empty stomach.

Eighty fish were collected during the spring sample with 64 percent having stomach contents to analyze. By number, 97 percent of the diet consisted of aquatic insects, 1 percent was crayfish, 1 percent was gizzard shad, and 1 percent was unknown. Seventy-five percent of the summer-sampled fish had something in their stomachs with gizzard shad accounting for 41 percent of the items, followed by crayfish (5 percent), and insects (2 percent); 52 percent of the items were too far digested to identify, but were likely also gizzard shad based on the rapid digestion rates of shad.

The two fall samples were very similar, with 80 percent of the food items consisting of gizzard shad followed by insects (7 percent), unknown (6 percent), crayfish (5 percent), and other (2 percent). In general, smallies appear to feed on gizzard shad when they are available with insects comprising most of their diet before the shad spawn each spring. In fact, several individuals were found to have over 50 individual insects in their stomachs! Crayfish actually accounted for a very small portion of the diet in Glen Elder Reservoir.


photo courtesy Scott Waters

The author often samples the Glen Elder smallie population by electroshocking at night. Two of his assistants show a couple of nice fish shocked up recently.

Besides Wilson and Glen Elder reservoirs, the state offers many other excellent opportunities to hook up with some bronzebacks. The 2009 Fishing Forecast, published by the department, includes the three-year average of catch rates from each of the reservoirs (2006-2008). Based on the standard samples, the best reservoir smallmouth densities can be found at Coffey County (17.4), Glen Elder (15.8), El Dorado (11.9), Wilson (11.8), Big Hill (8.8), Cedar Bluff (8.1), Melvern (7.6), and Milford (3.5). Some of the better small lakes include Jeffrey Energy Center-make up lake (11.1), Wyandotte County (9.3), and Bourbon County (2.1). (See Page 39 for the complete fishing forecast. The density rating is the number of fish caught per unit of sampling effort.)


Mike Miller photo

Smallmouths at Melvern Reservoir, near Emporia, are also doing well. Brad Pfaff, of Parkville Mo., caught this scrapper while crappie fishing.

I spoke with Kirby Shamburg of Randall to learn more about the best techniques and tactics to use when pursuing Kansas smallies. Shamburg is a dedicated smallmouth angler who fishes Glen Elder Reservoir almost exclusively. He can usually catch good numbers of fish with a few lunkers mixed in. Shamburg fishes for smallies any time between spring ice off and the first ice in the winter. Obviously, techniques, lure selection, and location vary seasonally, but smallies can be caught any time of the year, according to Shamburg.

His rod of choice most of the year is a medium or medium heavy action 6½-foot rod and casting reel with a 6:1 gear ratio. Shamburg prefers 10-pound-test or lighter monofilament. When fishing the deep water, he prefers a more sensitive line and will switch to 20-pound braided line to allow for better bite detection and hook sets.

The early spring smallmouth bite begins to pick up when water temperatures reach 45-50 degrees and the fish are in their pre-spawn pattern. This can be an excellent time to catch some of the really big smallies as they seem to get active earlier than the smaller guys. Shamburg begins fishing at sunrise most days, casting a variety of crankbaits into 6-8 feet of water and

using a variable retrieve. The slower presentation at these cold water temperatures works best when a crank and pause motion is utilized. Shamburg finds most of his fish will hit the lure when he stops reeling for two or three seconds.

As the water warms into the low 50s in April, Shamburg begins to use topwater early in the morning and late in the day when the lake is calm. His lures of choice include buzzbaits, plastic flukes, and his personal favorite, the Zara Spooks. This topwater presentation can be extremely effective until the first bit of chop is detected on the surface. After that, Shamburg prefers to start casting small spinnerbaits and run them just below the water's surface. He insists that a trailer hook is a must when using spinnerbaits and that most of his fish are hooked on the trailer.

In general, when the water is clear, he prefers dark lures as the smallies don't seem to hit anything flashy during these times. When the water is murkier or cloudy, he'll switch to white or chartreuse colors. Another tip he has picked up over the years is that the big smallies will follow the lures (topwater and spinnerbaits) for a while before hitting the bait.

During the spawning season and post spawn, Shamburg prefers to use crankbaits, specifically Rapala jointed crawdad-colored Shad Raps fished in about 8 to 12 feet of water. The crank and pause presentation is utilized again and can be effective on all sizes of fish. As the fish migrate into deeper water, the lure of choice is the jig-n-pig. Often times, Shamburg will reel it in like a slow crankbait presentation, especially in the fall. Other times, bouncing the bait off the bottom can be more effective. Flathead jigs seem to work best around the rocky areas, and his favorite colors include pumpkin, crawdad, or black and blue. Shamburg insists it's important to match the color of the jig to the pork trailer.

Marc Murrell photo

Wilson Reservoir, east of Russell, where this fish was caught, is well-known for its smallmouth bass. The clear waters and rocky shorelines provide ideal smallie habitat.

As water temperatures continue to warm in late June, July, and August, many anglers become frustrated and switch to largemouth bass. Shamburg says this doesn't have to be the case. The smallies are still out there and they still are feeding, but your tactics and locations must change. Shamburg continues to use topwater lures first thing in the morning in the same areas he fishes all year, but as soon as the sun hits the water, the fish seem to go deep for the rest of the day.

As an example, in June 2007 a tournament was held on Glen Elder, and most of the anglers were having a tough time locating and catching many bass. That same day, Shamburg was able to catch 10 smallies, averaging over 2 pounds apiece. His method was to fish deep, specifically around an old flooded pond he has marked. The pond is located in 30 to 35 feet of water in the middle of the reservoir near the river channel and is surrounded on all four sides by a berm.


Mike Miller photo

The above assortment of topwater baits, jerkbaits, crankbaits, jig-n-pig, tube jig and spinner baits should be in every smallmouth bass angler's tacklebox.

Shamburg has learned that the smallmouth will stage off the berms and ambush the bait as he drags it up the side. He prefers to fish from the outside in as this provides more of an ambush opportunity for the bass. Surprisingly, he only catches big fish off this area as evidenced by his lake-best 21¾-inch trophy caught several years back. He also notes that, often times, smallies will strongly relate to underwater structure like boulders, stumps, logs, or submerged vegetation. If he catches a fish from one of these on a trip, he can usually go back the next trip and pick up another.

Shamburg also does well during the heat of the summer fishing main lake points as they extend out into the reservoir. Many anglers like to cast up on the point where the shoreline hits the water and fish out from there, but he has learned the best summer action can be found by jigging on the ends of the point out from the bank in 25-35 feet of water. The fish will spend most of the day in this cooler water, and anglers willing to branch out and try a different approach can reap the benefits.

Fall fishing in September and October can be some of the best action of the year until water temperatures reach about 50 degrees. The fish move up shallow again and are much easier to find and are more accessible to the angler. I conduct my annual smallmouth bass electrofishing sample at night during the first week of October because fish of all sizes will be in these shallow areas and easier to collect. Topwater fishing around weedbeds, cattails, and points during this period can be excellent, and crankbaits, bucktail jigs, and spinnerbaits are hard to beat. Basically, fishing the same locations and patterns used in April and May will yield similar results. This time of year, the smallmouth are feeding heavily on gizzard shad, and lures imitating this small baitfish can be very effective.

Another trick Shamburg uses that seems to go unnoticed by most anglers is to target prop wash areas at boat ramps. He has learned over the years that the depressions motors leave when running the boat up on the trailer will often hold fish immediately after a boat has loaded. Shamburg's theory is that the churning of the water and bottom substrate releases aquatic invertebrates, crayfish, and other types of food, and the smallies have learned to actively feed in these areas after boats load.

One tactic that some anglers may want to try is live bait fishing, especially when the fish are in those deep-water areas. Leeches may be the number-one live bait option for smallies, but don't overlook night crawlers or minnows. In recent years, many walleye anglers have reported catching fair numbers of big smallmouth while drifting a jig/crawler combo over likely looking walleye areas. This can be a great way to introduce young anglers to smallmouth as casting ability is not as important, but results can be very good.

There are many opportunities to catch smallmouth bass in Kansas, and just about anyone can do it. They can be found nearly statewide in a number of reservoirs and smaller water bodies with a few even present in southeastern Kansas creeks. Try these guys for some early season action before some of the other species really get going. This hard fighting fish will leave anyone appreciating their strength and aggression, and after catching a few Kansas smallies, you will likely become hooked like I was.

Walleye anglers drifting with jig-and-night crawler combos often catch smallies at Wilson, Glen Elder and Melvern lakes.

Fishing Forecast 2009

Use the following pages to find high-quality fishing for the sport fish you prefer. The forecast lists reservoirs (water bodies larger than 1,000 acres), lakes (water bodies less than 1,000 acres), and ponds (water bodies less than 10 acres) for each species. Ratings include the **Density Rating**, which is the number of fish captured per unit of effort by fisheries biologists; **Preferred Rating,** which is the number of fish at a preferred length for that species; **Lunker Rating**, which is the number of fish sampled at a length most anglers consider a trophy, and **Largest fish**, which is simply the largest fish caught during sampling. The **Biologist's Rating** is a rating of E -excellent, G - good, F - fair or P - poor given by the biologist who considers other factors in addition to sampling. In theory, a lake with a **Density Rating** of 24 will have twice as many fish per acre as a lake with a **Density Rating** of 12.

This year, a new column has been added: **3-Year Average**. This figure represents a three-year average in density ratings of a particular species. Not all lakes are sampled every year, so this column can help anglers evaluate a fishery that might not have been included in this forecast since current data was not available.

This information will give you an idea not only of which lakes have high populations, but also those which have larger fish. You may view these tables on the department's web page www.kdwp.state.ks.us or a brochure can be mailed or picked up at a KDWP office.

BLUE CATFISH

IMPOUNDMENT	Density Rating (>20")	Preferred Rating (>30")	Lunker Rating (>35")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>20")
RESERVOIRS						
MILFORD	2.83	0.17	0.00	18.74	G	2.3
TUTTLE CREEK	0.88	0.13	0.00	13.01	F	NS
LA CYGNE	0.25	0.25	0.25	25.02	G	1.1

CHANNEL CATFISH

IMPOUNDMENT	Density Rating (>16")	Preferred Rating (>24")	Lunker Rating (>28")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>18")
RESERVOIRS						
CLINTON	10.75	0.50	0.00	6.73	G	9.83
TORONTO	7.50	4.00	1.50	18.30	G	11.00
PERRY	5.60	1.00	0.00	8.49	G	5.77
BIG HILL	5.30	1.30	0.00	8.70	F	NS
WILSON	4.75	0.38	0.13	9.87	G	4.80
GLEN ELDER	4.60	0.20	0.10	11.20	G	6.03
POMONA	4.20	1.00	0.25	8.70	G	4.33
LOVEWELL	3.70	1.30	0.70	12.10	G	3.17
CHENEY	3.50	1.33	0.83	18.81	G	5.00
GEARY SFL	3.00	0.00	0.00	2.69	F	7.33
HILLSDALE	3.00	0.80	0.50	11.10	F	5.87
MARION	3.00	0.33	0.00	5.81	G	4.90
SEBELIUS	2.99	1.76	0.55	11.02	G	4.90
WEBSTER	2.46	0.76	0.55	9.54	F	3.53
CEDAR BLUFF	2.25	0.25	0.25	12.77	F	4.03
MELVERN	2.10	0.30	0.20	12.70	G	1.90
FALL RIVER	1.75	0.50	0.00	7.50	F	5.60
LAKES						
DOUGLAS SFL	63.00	0.00	0.00	4.37	G	NS
BUTLER SFL	40.00	9.00	5.00	13.50	E	21.50
ESKRIDGE-LAKE WABAUNSEE	33.00	12.00	1.00	9.20	G	NS
SABETHA - PONY CREEK LAKE	32.00	6.00	0.00	8.27	G	31.67
PLEASANTON WEST LAKE	30.00	4.00	1.00	10.40	E	32.00
HOLTON - BANNER CREEK LAKE	29.00	7.00	2.00	12.79	G	13.67
SABETHA CITY LAKE	27.00	4.00	0.00	9.04	G	43.50
CLARK SFL	23.00	2.50	0.00	7.67	E	19.00
BOURBON CO LK (HIATVILLE)	21.00	8.00	2.00	12.25	G	18.67
LYON SFL	20.00	3.00	0.00	7.61	G	14.50
MCPHERSON SFL	18.00	2.50	0.00	9.84	G	10.50
CARBONDALE CITY LAKE - EAST	17.00	1.00	0.00	4.85	G	18.67
FORT SCOTT CITY LAKE	17.00	5.00	1.00	11.20	G	14.70
MADISON CITY LAKE	17.00	1.00	1.00	9.92	G	16.00
BARBER SFL-LOWER	16.00	2.00	0.00	8.27	F	6.50
BOURBON SFL	16.00	1.00	0.00	6.40	G	11.33
LEBO CITY LAKE	16.00	8.00	7.00	17.00	E	13.00
BONE CREEK LAKE	15.50	2.50	0.50	10.95	G	10.40
WOODSON SFL	15.00	5.70	2.70	19.90	E	12.00
GRIDLEY CITY LAKE	14.00	3.00	0.00	9.00	F	17.50
MOLINE NEW CITY LAKE	14.00	1.00	0.00	6.61	G	12.00
OLATHE-CEDAR LAKE	13.00	0.00	0.00	5.00	F	11.33
SEDAN CITY LAKE-OLD	13.00	0.00	0.00	6.39	F	10.00
CRAWFORD SFL	11.00	0.00	0.00	5.28	G	11.00
HOWARD-POLK DANIELS LAKE	11.00	1.00	0.00	8.16	G	8.00
NEOSHO SFL	11.00	0.00	0.00	5.28	G	3.33
PLEASANTON EAST LAKE	10.50	2.50	0.50	15.80	E	28.67
ATCHISON SFL	10.00	1.00	0.00	8.82	G	10.67
CHANUTE CITY LAKE	10.00	2.00	0.00	9.08	G	11.67
WILSON SFL	10.00	0.00	0.00	5.50	G	8.83
BLUE MOUND CITY LAKE	10.00	NS	NS	1.98	F	2.00
HARVEY CO. LAKE-EAST	9.00	0.00	0.00	5.29	G	5.00
NEBO SFL	9.00	1.00	1.00	10.25	G	5.33
COWLEY SFL	8.00	2.00	1.00	12.80	G	5.17
JOHNSON CO. SHAWNEE MISSION LAKE	8.00	2.00	0.00	8.00	G	11.83
PRESCOTT CITY LAKE	8.00	3.00	1.00	11.16	E	13.00
CENTRALIA CITY LAKE	7.50	1.00	0.00	6.29	G	8.00
BROWN SFL	7.00	5.00	3.00	14.99	G	11.67
GARDNER CITY LAKE	7.00	1.00	0.00	7.90	G	7.77
HOLTON-PRAIRIE LAKE	7.00	0.00	0.00	4.85	F	15.00
PRATT CO. LAKE	7.00	0.00	0.00	5.24	G	6.33
SPRING HILL CITY LAKE	7.00	0.00	0.00	3.60	F	12.00
WICHITA-SOUTH LAKE	7.00	0.00	0.00	3.87	G	NS
CHASE SFL	6.50	1.00	0.00	9.30	G	4.83

CHANNEL CATFISH

IMPOUNDMENT	Density Rating (>16")	Preferred Rating (>24")	Lunker Rating (>28")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>18")
LAKES CONTINUED						
LENEXA LAKE - LENEXA	6.00	0.00	0.00	3.50	F	NS
MIAMI SFL	6.00	1.00	0.00	6.35	F	10.00
LEAVENWORTH SFL	5.50	1.00	0.00	5.00	F	14.50
MONTGOMERY SFL	5.50	1.00	0.00	4.00	F	5.17
YATES CENTER CITY LAKE-NEW	5.50	1.50	1.00	20.40	E	13.83
COUNCIL GROVE CITY LAKE	5.00	1.00	1.00	15.70	G	12.50
EUREKA CITY LAKE	5.00	4.00	1.00	9.48	G	15.00
JOHNSON CO - KILL CREEK PARK LAKE	5.00	0.00	0.00	1.40	F	NS
KINGMAN SFL	5.00	0.00	0.00	1.87	G	13.15
KIOWA SFL	5.00	1.00	0.00	5.00	G	3.00
OSAGE SFL	5.00	2.50	1.50	16.50	G	11.73
OSAWATOMIE CITY LAKE	5.00	0.00	0.00	2.14	F	12.00
OTTAWA SFL	5.00	0.50	0.00	5.49	F	6.17
SHAWNEE CO.-LAKE SHAWNEE	5.00	0.00	0.00	3.01	F	6.33
DOUGLAS CO.-LONESTAR LAKE	4.50	0.00	0.00	4.61	F	6.33
MIDDLE CREEK SFL	4.50	1.50	1.50	10.60	G	5.00
OLATHE-LAKE OLATHE	4.50	2.00	0.50	10.50	F	2.67
GOODMAN SFL	4.00	1.00	0.00	5.44	G	2.33
HERINGTON CITY LAKE-OLD	4.00	1.00	0.00	5.69	F	4.00
WELLINGTON-HARGIS CREEK LAKE	4.00	2.00	1.00	8.00	G	0.00
WINFIELD CITY LAKE	3.30	1.00	0.33	10.80	G	0.70
PAOLA CITY LAKE	3.00	0.50	0.00	6.00	F	10.33
THAYER CITY LAKE (NEW)	3.00	1.00	0.50	11.79	G	7.00
PONDS						
GREENBUSH EDUCATION CENTER	9.00	0.00	0.00	3.50	F	5.00
HORTON-LITTLE LAKE	4.00	0.00	0.00	4.31	F	3.00
OVERLAND PARK-SOUTH LAKE	2.00	0.00	0.00	4.20	F	NS
ATCHISON CITY LAKE #7	1.00	0.00	0.00	1.24	F	2.00
OSAWATOMIE-BEAVER LAKE	1.00	0.00	0.00	2.08	F	6.00
PRAIRIE CENTER POND	1.00	0.30	0.20	21.00	G	NS

FLATHEAD CATFISH

IMPOUNDMENT	Density Rating (>20")	Preferred Rating (>28")	Lunker Rating (>34")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>20")
RESERVOIRS						
KIRWIN	2.50	2.50	1.50	12.59	F	1.67
MILFORD	2.33	1.17	0.67	15.43	G	0.70
SEBELIUS	1.50	1.50	0.50	10.29	F	4.17
LOVEWELL	0.50	0.50	0.50	24.30	G	0.23
GLEN ELDER	0.50	0.50	0.33	19.60	F	0.10
WEBSTER	0.50	0.00	0.00	3.58	P	1.00
LA CYGNE	0.25	0.25	0.25	6.70	G	1.07
LAKES						
GEARY SFL	2.00	1.00	1.00	13.67	F	NS
CLARK SFL	2.00	0.00	0.00	3.96	G	NS
HERINGTON CITY LAKE-NEW	1.00	1.00	1.00	12.35	F	2.33
HERINGTON CITY LAKE-OLD	1.00	0.00	0.00	2.11	F	NS

BLUEGILL

IMPOUNDMENT	Density Rating (>6")	Preferred Rating (>8")	Lunker Rating (>10")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>6")
RESERVOIRS						
HILLSDALE	5.80	0.00	0.00	0.30	P	7.20
GLEN ELDER	4.70	0.00	0.00	0.30	F	NS
WEBSTER	4.38	0.00	0.00	0.46	P	2.10
LAKES						
BLUE MOUND CITY LAKE	50.25	0.75	0.00	0.57	G	1.80
ATCHISON CITY LAKE #23	39.75	0.00	0.00	0.35	F	7.80
POTTAWATOMIE SFL #1	39.00	0.50	0.00	0.39	G	25.60
GARDNER CITY LAKE	31.60	0.00	0.00	0.30	F	18.60
JOHNSON CO. - KILL CREEK PARK LAKE	29.00	0.00	0.00	0.30	F	NS
ESKRIDGE-LAKE WABAUNSEE	27.00	0.25	0.00	0.31	F	NS
BOURBON CO. LK (HIATVILLE)	24.25	1.50	0.00	0.46	G	9.37
SABETHA CITY LAKE	21.75	0.00	0.00	0.28	F	23.40
LYON SFL	19.00	4.00	0.00	0.49	G	4.77
BUTLER SFL	18.30	0.00	0.00	0.00	F	4.90
SHERIDAN SFL	18.25	1.25	0.00	0.52	F	2.00
EUREKA CITY LAKE	16.00	0.00	0.00	0.35	F	17.27
GREAT BEND-VETS PARK LAKE	15.50	0.00	0.00	0.36	G	3.50
JOHNSON CO. SHAWNEE MISSION LAKE	15.40	0.20	0.00	0.30	F	12.30
PLEASANTON WEST LAKE	15.00	0.00	0.00	0.33	F	2.27
OLATHE-CEDAR LAKE	14.30	0.00	0.00	0.30	P	9.03
SEDAN CITY LAKE-OLD	13.00	1.75	0.00	0.55	G	3.37
MADISON CITY LAKE	12.25	0.25	0.00	0.51	G	7.93
FORT SCOTT CITY LAKE	12.25	2.25	0.00	0.40	F	12.30
GRAHAM CO.-ANTELOPE LAKE	12.00	5.75	0.00	0.68	G	23.43
OTTAWA SFL	11.90	0.00	0.00	0.32	G	17.87
BROWN SFL	11.00	3.00	0.00	0.44	F	27.43
ATCHISON CITY LAKE #8	10.00	0.00	0.00	0.24	F	4.00
BOURBON SFL	9.80	0.40	0.00	0.44	F	6.43
HOWARD-POLK DANIELS LAKE	9.25	0.25	0.00	0.36	F	2.20
TOPEKA-LK. HAMMOND (YMCA)	9.00	2.00	0.00	0.40	G	9.50
SCOTT SFL	9.00	0.00	0.00	0.32	G	10.17
PAOLA CITY LAKE	8.75	0.00	0.00	0.28	F	4.80
SHAWNEE CO.-LAKE SHAWNEE	7.75	0.50	0.00	0.37	F	6.80
CLARK SFL	7.75	0.00	0.00	0.31	G	2.20
LENEXA LAKE - LENEXA	7.30	0.00	0.00	0.30	F	NS
NEOSHO SFL	7.00	0.00	0.00	0.35	F	8.47
PRESCOTT CITY LAKE	6.25	0.00	0.00	0.36	F	1.50
OSAWATOMIE CITY LAKE	6.00	0.00	0.00	0.27	F	14.50
MOLINE OLD CITY LAKE	5.75	0.25	0.00	0.31	F	8.05
SABETHA - PONY CREEK LAKE	5.50	0.75	0.00	0.49	G	12.87
MIDDLE CREEK SFL	5.50	0.00	0.00	0.30	P	1.60
PONDS						
GREENBUSH EDUCATION CENTER	75.00	0.00	0.00	0.20	P	1.90
OSAWATOMIE-BEAVER LAKE	49.50	9.00	0.00	0.39	G	11.00
OVERLAND PARK-SOUTH LAKE	48.70	0.00	0.00	0.30	F	NS
SEVERY CITY LAKE	13.50	7.25	0.00	0.27	G	11.43
TROY 4-H LAKE	6.00	0.50	0.00	0.42	F	10.50
ATCHISON CITY LAKE #7	5.50	0.00	0.00	0.17	F	1.00
JEWELL CITY LAKE - EMERSON LAKE	5.50	0.00	0.00	0.25	F	NS
BONNER SPRINGS-NORTH PARK LAKE	5.00	0.00	0.00	0.20	P	NS

REDEAR

IMPOUNDMENT	Density Rating (>7")	Preferred Rating (>9")	Lunker Rating (>11")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>7")
LAKES						
NEOSHO SFL	13.25	4.25	0.00	0.43	G	8.50
DOUGLAS CO.-LONESTAR LAKE	11.50	4.50	0.00	0.73	F	4.43
LYON SFL	9.50	1.50	0.00	0.73	G	8.50
BUTLER SFL	9.00	0.30	0.00	0.70	F	NS
MONTGOMERY SFL	9.00	4.80	0.00	0.70	F	3.93
OSAWATOMIE CITY LAKE	9.00	0.00	0.00	0.52	F	2.00
THAYER CITY LAKE (NEW)	8.50	0.00	0.00	0.41	G	3.80
BOURBON SFL	6.40	1.20	0.00	0.51	G	8.90
ATCHISON SFL	5.00	0.25	0.00	0.57	F	4.77
PLEASANTON WEST LAKE	4.00	0.00	0.00	0.56	F	NS
LEAVENWORTH SFL	3.25	0.75	0.00	0.73	P	11.70
COWLEY SFL	3.00	1.50	0.50	0.67	G	9.50
MOLINE OLD CITY LAKE	2.50	1.00	0.00	0.69	F	1.65
JOHNSON CO - KILL CREEK PARK LAKE	2.30	0.30	0.00	0.50	F	NS
DOUGLAS SFL	2.00	0.00	0.00	0.43	F	NS
BONE CREEK LAKE	1.50	0.00	0.00	0.26	G	1.55

BLACK CRAPPIE

IMPOUNDMENT	Density Rating (>8")	Preferred Rating (>10")	Lunker Rating (>12")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>8")
RESERVOIRS						
WEBSTER	20.88	0.38	0.00	1.24	G	1.7
SEBELIUS	7.63	5.63	1.50	1.51	G	5.2
CEDAR BLUFF	1.50	1.30	0.30	1.17	P	1.2
LAKES						
SABETHA CITY LAKE	53.50	50.00	0.75	1.29	G	0.7
PLEASANTON WEST LAKE	24.00	2.80	0.00	0.78	G	NS
GRAHAM CO.-ANTELOPE LAKE	21.75	15.75	1.00	1.22	G	35.9
BELLEVILLE-ROCKY POND	17.50	16.80	0.00	0.86	G	99.3
GARNETT CITY LAKE-NORTH	16.00	12.00	1.40	1.00	G	5.2
BOURBON CO LK (HIATVILLE)	15.25	1.25	0.25	1.40	G	16.4
ALMA CITY LAKE	11.50	0.75	0.00	0.58	F	1.3
DOUGLAS CO.-LONESTAR LAKE	11.25	2.00	0.00	0.79	F	3.1
HOLTON - BANNER CREEK LAKE	9.88	3.13	1.13	1.44	G	6.8
NEOSHO SFL	8.50	0.75	0.00	0.72	F	23.7
ATCHISON CITY LAKE #8	8.00	1.00	0.00	0.64	F	1.0
BLUE MOUND CITY LAKE	7.50	1.75	0.00	0.62	G	2.3
BOURBON SFL	7.20	4.00	1.20	1.90	G	2.8
MIAMI SFL	7.00	4.00	0.00	0.94	G	24.0
BROWN SFL	7.00	6.75	0.25	1.22	F	17.9
BOURBON CO. CEDAR CREEK	6.60	1.00	0.00	0.71	F	6.0
PRATT CO. LAKE	6.25	1.25	0.00	0.79	G	6.8
SHERIDAN SFL	5.75	0.75	0.00	0.69	F	4.0
KINGMAN SFL	5.75	1.25	1.00	1.18	F	9.6
CENTRALIA CITY LAKE	5.50	0.00	0.00	0.33	F	5.2
GARDNER CITY LAKE	5.20	0.60	0.40	1.40	F	1.6
JOHNSON CO - KILL CREEK PARK LAKE	4.80	0.50	0.00	0.60	F	NS
WYANDOTTE CO. LAKE	4.60	4.00	0.30	1.30	G	2.9
POTTAWATOMIE SFL #2	4.50	2.00	1.00	1.19	G	NS
FORT SCOTT CITY LAKE	4.25	3.25	0.75	2.50	G	NS
HOLTON-PRAIRIE LAKE	4.00	0.50	0.00	0.62	F	4.8
POTTAWATOMIE SFL #1	3.50	0.25	0.00	0.67	F	NS
MOLINE OLD CITY LAKE	3.00	2.00	1.25	0.95	F	2.2
SABETHA - PONY CREEK LAKE	2.75	2.00	1.25	1.43	G	21.2
SHAWNEE CO.-LAKE SHAWNEE	2.25	0.00	0.00	0.32	P	2.9
GREAT BEND-VETS PARK LAKE	2.25	0.25	0.00	0.48	F	NS
COWLEY SFL	2.20	0.83	0.17	1.10	F	1.5
THAYER CITY LAKE (NEW)	2.00	0.25	0.25	1.04	F	3.5
PAOLA CITY LAKE	2.00	0.75	0.00	0.58	F	2.3
CRAWFORD SFL	1.75	0.25	0.00	0.90	F	2.1
OSAWATOMIE CITY LAKE	1.67	0.67	0.00	0.76	P	3.3
LEAVENWORTH SFL	1.50	0.50	0.00	0.62	F	2.3
JOHNSON CO. SHAWNEE MISSION LAKE	1.00	0.60	0.40	1.30	F	5.9
SHAWNEE SFL	0.75	0.25	0.00	0.57	P	NS
NEBO SFL	0.75	0.00	0.00	0.23	P	1.9
CLARK SFL	0.63	0.63	0.13	1.02	P	1.0
PONDS						
GREENBUSH EDUCATION CENTER	5.00	0.00	0.00	0.32	P	11.1
HORTON-LITTLE LAKE	4.00	0.50	0.00	0.48	F	NS
BONNER SPRINGS-NORTH PARK LAKE	1.30	0.00	0.00	0.30	P	NS
TROY 4-H LAKE	0.50	0.25	0.00	0.69	F	0.5

WHITE CRAPPIE

IMPOUNDMENT	Density Rating (>8")	Preferred Rating (>10")	Lunker Rating (>12")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>8")
RESERVOIRS						
FALL RIVER	23.81	16.56	3.81	2.65	E	15.87
PERRY	23.00	5.08	0.67	1.47	G	22.53
HILLSDALE	21.80	12.40	0.60	1.40	G	56.13
TORONTO	15.56	6.56	2.06	2.54	E	105.30
MARION	14.25	3.56	1.38	1.49	G	9.57
KANOPOLIS	12.00	0.38	0.06	1.07	G	3.07
KIRWIN	11.75	0.63	0.25	1.75	G	1.73
POMONA	11.20	5.30	0.70	1.60	G	13.87
COUNCIL GROVE	10.80	4.00	0.25	1.10	F	3.87
MELVERN	8.00	4.00	0.20	1.00	E	4.97
BIG HILL	7.50	2.10	0.80	1.00	G	13.80
GLEN ELDER	5.50	1.90	0.30	1.70	F	1.23
SEBELIUS	4.88	1.13	0.25	1.07	F	4.17
LA CYGNE	4.19	1.63	0.13	0.87	G	4.47
MILFORD	3.75	0.69	0.19	1.09	F	2.67
CLINTON	3.54	1.75	0.13	1.39	F	15.33
LOVEWELL	2.80	0.30	0.30	1.40	F	4.00
LAKES						
MOLINE NEW CITY LAKE	61.25	8.75	3.00	1.98	E	8.27
ESKRIDGE-LAKE WABAUNSEE	49.00	4.75	0.50	1.13	E	NS
SEDAN CITY LAKE-OLD	44.00	14.50	1.50	1.01	E	24.20
SCOTT SFL	37.25	0.25	0.00	0.47	G	13.37
OLATHE-CEDAR LAKE	34.00	6.00	1.80	1.50	F	23.90
ATCHISON CITY LAKE #8	31.50	8.50	0.00	0.86	G	NS
SHERIDAN SFL	27.50	14.50	1.00	1.41	G	8.10
COUNCIL GROVE CITY LAKE	26.00	6.80	0.00	0.70	G	5.75
MARION CO. LAKE	25.00	20.50	2.25	1.58	G	22.23
SPRING HILL CITY LAKE	23.00	3.00	1.00	1.30	F	13.30
SABETHA CITY LAKE	22.00	10.50	0.75	1.44	G	NS
SEDAN CITY LAKE-NEW	21.25	19.50	1.75	1.26	E	21.27
OTTAWA SFL	21.10	6.25	0.50	1.58	G	31.13
HERINGTON CITY LAKE-OLD	20.75	1.00	0.25	1.31	G	8.53
EUREKA CITY LAKE	20.75	7.00	0.25	0.82	G	33.20
KINGMAN SFL	16.00	10.50	1.75	1.50	G	4.30
NEOSHO SFL	13.75	1.00	25.00	0.99	G	15.77
PLEASANTON EAST LAKE	12.60	4.40	0.40	1.20	G	0.50
HARVEY CO. LAKE-EAST	10.75	2.25	0.75	1.16	G	9.80
HARVEYVILLE CITY LAKE	10.75	0.00	0.00	0.40	F	NS
SHAWNEE SFL	9.75	2.00	0.75	1.13	G	NS
OLATHE-LAKE OLATHE	9.70	3.00	0.30	0.80	F	13.23
HOWARD-POLK DANIELS LAKE	9.50	3.25	1.50	1.74	G	7.27
MADISON CITY LAKE	8.50	0.50	0.50	1.12	G	13.27
HORTON-MISSION LAKE	8.50	3.25	0.25	1.07	F	12.15
CARBONDALE CITY LAKE - EAST	8.50	1.00	0.00	0.61	F	55.77
CHASE SFL	8.00	7.20	1.00	1.20	G	1.73
WINFIELD CITY LAKE	7.80	1.50	0.13	0.93	G	8.80
CLARK SFL	7.00	0.88	0.38	1.04	G	1.20
CRAWFORD SFL	7.00	1.00	0.25	0.90	G	4.10
HERINGTON CITY LAKE-NEW	6.75	1.25	0.00	0.78	F	4.77
NEBO SFL	6.50	1.50	0.75	1.10	F	9.20
KIOWA SFL	6.25	1.25	0.50	1.65	F	1.65
THAYER CITY LAKE (NEW)	6.25	0.50	25.00	1.17	G	3.00
JOHNSON CO. SHAWNEE MISSION LAKE	5.20	0.40	0.20	1.70	F	3.95
GARDNER CITY LAKE	5.00	2.60	1.00	1.40	G	3.93
MCPHERSON SFL	4.25	1.25	0.50	1.59	P	3.00
GREAT BEND-VETS PARK LAKE	4.00	0.50	0.25	0.84	G	NS
PLEASANTON WEST LAKE	3.80	0.00	0.00	0.40	F	14.53
HOLTON-PRAIRIE LAKE	3.75	3.00	1.00	2.05	F	10.00
SHAWNEE CO.-LAKE SHAWNEE	3.75	0.50	0.25	0.93	F	1.43
PAOLA CITY LAKE	3.75	3.00	0.00	0.65	F	4.97
WASHINGTON SFL	3.75	1.50	0.00	0.55	F	11.13
ELLIS CITY LAKE	3.33	3.33	1.00	1.31	F	17.00
MEADE STATE LAKE	3.25	0.75	0.75	1.26	G	10.87
PRATT CO. LAKE	2.75	1.00	0.00	0.80	G	2.00
MIDDLE CREEK SFL	2.70	1.50	0.00	0.80	F	5.63
LEAVENWORTH SFL	2.25	2.00	0.50	0.86	F	4.43
OLPE CITY LAKE	2.00	1.25	1.00	1.79	P	1.20
GEARY SFL	2.00	1.25	0.00	0.80	F	15.03
CHANUTE CITY LAKE	2.00	0.50	0.00	0.45	F	3.83
PONDS						
HORTON-LITTLE LAKE	31.00	11.00	1.00	1.57	G	1.50
OVERLAND PARK-SOUTH LAKE	4.70	2.00	0.00	0.60	F	NS
ATCHISON CITY LAKE #7	2.00	0.00	0.00	0.25	P	NS
SEVERY CITY LAKE	1.50	1.25	0.25	0.83	P	5.50

LARGEMOUTH BASS

IMPOUNDMENT	Density Rating (>12")	Preferred Rating (>15")	Lunker Rating (>20")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>12")
RESERVOIRS						
LA CYGNE	80.49	48.78	2.44	5.68	E	51.87
HILLSDALE	32.20	17.40	1.30	6.80	G	25.63
PERRY	19.70	11.90	0.90	6.10	G	15.30
SEBELIUS	17.65	6.86	0.00	3.13	F	26.40
BIG HILL	13.90	6.50	1.90	5.70	G	17.17
CEDAR BLUFF	12.94	8.47	0.47	5.31	F	19.33
MILFORD	4.20	1.70	0.13	4.95	F	5.75
LAKES						
POTTAWATOMIE SFL #1	128.00	18.00	0.00	3.70	G	114.33
MOLINE NEW CITY LAKE	124.51	28.43	0.00	4.19	G	125.13
GARNETT CITY LAKE-NORTH	120.00	42.00	0.00	3.20	E	132.33
LYON SFL	116.67	17.65	0.98	5.51	G	118.70
MOLINE OLD CITY LAKE	111.76	1.96	0.00	3.86	F	27.60
SHERIDAN SFL	106.00	22.00	1.00	5.73	G	97.33
SEDAN CITY LAKE-OLD	104.71	16.47	2.35	5.18	E	109.43
CLARK SFL	89.68	53.55	6.45	5.50	E	76.70
EUREKA CITY LAKE	83.33	17.65	1.96	5.95	E	112.20
MCPHERSON SFL	79.17	55.00	2.50	6.72	G	58.00
OLATHE-CEDAR LAKE	77.90	37.70	2.60	6.60	G	64.73
PLEASANTON WEST LAKE	77.50	54.90	4.23	5.43	E	131.13
PRATT CO. LAKE	77.46	33.80	0.00	3.85	E	138.80
HOLTON - BANNER CREEK LAKE	76.90	45.40	0.00	4.00	G	66.33
JOHNSON CO - KILL CREEK PARK LAKE	75.90	22.20	0.00	3.10	G	NS
MIAMI SFL	74.80	36.40	0.00	4.00	G	54.53
ALMA CITY LAKE	73.00	27.00	0.00	4.30	G	50.00
ALTAMONT CITY LAKE-EAST	73.00	28.60	7.90	7.10	E	28.57
DOUGLAS CO.-LONESTAR LAKE	72.00	28.70	1.80	5.90	F	63.83
LEBO CITY LAKE	72.00	48.00	0.00	3.90	E	57.00
WYANDOTTE CO. LAKE	71.90	5.50	0.00	3.10	F	72.57
MADISON CITY LAKE	71.57	32.35	3.92	5.51	E	85.50
GRAHAM CO.-ANTELOPE LAKE	71.00	20.00	0.00	3.20	G	76.33
ATCHISON SFL	70.00	25.50	0.00	3.60	G	73.00
SEDAN CITY LAKE-NEW	69.61	13.73	0.00	4.41	G	107.73
GARNETT CITY LAKE-SOUTH	67.00	28.00	0.00	4.10	F	95.00
SCOTT SFL	66.67	10.00	0.00	3.69	F	78.83
BROWN SFL	65.40	11.50	1.50	4.70	G	95.37
BUTLER SFL	65.40	42.50	2.40	5.70	G	147.27
SPRING HILL CITY LAKE	62.70	31.30	1.50	4.60	G	62.70
MELVERN RIVER POND	62.00	27.00	0.00	3.90	E	101.50
LENEXA LAKE - LENEXA	61.80	38.20	0.00	3.50	G	NS
BONE CREEK LAKE	61.72	18.66	0.00	4.19	G	44.07
FORT SCOTT CITY LAKE	61.50	15.40	0.00	3.40	G	38.90
JOHNSON CO. SHAWNEE MISSION LAKE	60.40	21.90	2.10	4.70	G	69.03
POTTAWATOMIE SFL #2	55.00	34.00	0.80	3.70	G	35.10
NEOSHO SFL	54.62	16.15	3.08	7.39	G	50.20
SHAWNEE CO.-LAKE SHAWNEE	54.40	8.80	0.70	6.50	G	40.23
OSAWATOMIE CITY LAKE	53.70	0.00	0.00	1.20	F	72.00
OTTAWA SFL	53.18	12.14	5.78	7.80	G	43.17
POTTAWATOMIE CO. LAKE	52.00	7.00	1.00	4.00	F	45.00
NEBO SFL	50.60	29.70	7.70	6.50	G	41.53
GOODMAN SFL	50.00	31.94	4.17	6.37	F	33.83
YATES CENTER CITY LAKE-NEW	49.00	15.00	0.00	2.50	E	85.33
GARDNER CITY LAKE	48.80	14.40	2.40	6.10	G	82.13
OLATHE-LAKE OLATHE	48.60	20.40	1.10	5.60	G	48.30
SABETHA CITY LAKE	48.50	30.00	2.30	5.70	G	62.95
KIOWA SFL	48.39	12.90	0.00	2.96	G	45.55
BOURBON SFL	48.30	6.70	0.00	4.00	G	35.07
BARBER SFL-LOWER	47.69	18.46	0.00	2.75	G	28.37
PAOLA CITY LAKE	47.30	5.50	1.40	5.90	F	22.93
HOWARD-POLK DANIELS LAKE	46.08	23.53	1.96	6.06	G	65.40
THAYER CITY LAKE (NEW)	46.00	5.50	0.50	5.59	F	29.50
SHAWNEE SFL	44.90	18.37	3.40	4.69	E	NS
GREAT BEND-VETS PARK LAKE	44.12	5.88	0.00	2.71	G	24.50
LEAVENWORTH SFL	43.60	11.30	0.00	3.80	G	55.80
MEADE STATE LAKE	40.74	27.78	1.85	4.86	F	91.33
HOLTON-PRAIRIE LAKE	40.00	13.30	2.50	6.60	G	56.70
LOUISBURG CITY LAKE	39.60	30.20	3.80	5.40	G	56.43
OSAGE SFL	37.00	11.00	2.20	5.50	F	24.33
ATCHISON CITY LAKE #8	34.00	18.00	0.00	4.30	G	116.00
BELLEVILLE-ROCKY POND	34.00	3.00	0.00	3.90	F	13.60
BLUE MOUND CITY LAKE	33.30	3.03	0.00	3.89	G	33.30
PLEASANTON EAST LAKE	33.30	11.70	0.00	3.30	F	21.13
ATCHISON CITY LAKE #23	32.50	25.00	0.00	3.70	F	105.00
BOURBON CO LK (HIATVILLE)	32.00	7.00	0.00	4.30	G	23.77

LARGEMOUTH BASS

IMPOUNDMENT	Density Rating (>12")	Preferred Rating (>15")	Lunker Rating (>20")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>12")
LAKES CONTINUED						
GRIDLEY CITY LAKE	32.00	1.00	0.00	1.50	G	132.67
COWLEY SFL	31.80	10.60	0.00	3.50	G	60.30
PRESCOTT CITY LAKE	27.30	14.50	7.30	6.99	G	8.30
KINGMAN SFL	25.00	15.30	0.00	4.45	F	29.17
CHANUTE CITY LAKE	24.00	14.67	0.67	5.60	G	51.63
SABETHA - PONY CREEK LAKE	23.10	20.00	0.60	4.50	G	66.23
WILSON SFL	23.10	16.30	1.40	5.50	G	30.33
GEARY SFL	22.14	6.43	0.00	3.04	G	16.60
HORTON-MISSION LAKE	21.80	12.70	2.70	6.00	F	21.40
FORD SFL	21.62	5.41	0.00	4.21	P	48.50
CARBONDALE CITY LAKE - EAST	21.57	13.73	0.00	3.75	P	20.57
PONDS						
SEVERY CITY LAKE	176.27	30.51	1.69	5.29	E	118.17
EMPORIA-PETER PAN PARK	132.00	42.00	0.00	4.40	G	69.67
EMPORIA-JONES PARK NORTH	130.00	0.00	0.00	1.05	G	103.83
OVERBROOK CITY LAKE	93.00	25.00	0.00	3.20	F	74.67
NEW STRAWN CITY LAKE	92.00	12.00	0.00	3.60	E	73.67
HORTON-LITTLE LAKE	80.00	33.75	2.50	5.00	G	46.00
TROY 4-H LAKE	62.00	0.00	0.00	1.20	F	7.00
OVERLAND PARK-SOUTH LAKE	39.40	24.20	3.00	4.70	G	39.40
EDGERTON CITY LAKE	32.50	20.00	10.00	6.60	G	32.50
JEWELL CITY LAKE - EMERSON LAKE	30.80	0.00	0.00	2.10	F	NS
EMPORIA-JONES PARK WEST POND	30.00	20.00	0.00	2.98	G	160.67
BALDWIN - SPRING CREEK LAKE	28.90	13.50	1.90	5.90	G	51.27
ATCHISON CITY LAKE #7	25.70	7.40	1.40	5.40	G	NS
OVERLAND PARK - KINGSTON LAKE	20.70	3.50	0.00	2.70	F	33.90
OSAWATOMIE-BEAVER LAKE	20.00	5.00	0.00	2.60	F	30.70
BLACK KETTLE SFL	16.00	6.00	0.00	2.36	F	19.83

NORTHERN PIKE

IMPOUNDMENT	Density Rating (>21")	Preferred Rating (>28")	Lunker Rating (>34")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>21")
LAKES						
KINGMAN SFL	14.00	3.00	1.00	10.50	E	8.00

STRIPER

IMPOUNDMENT	Density Rating (>20")	Preferred Rating (>30")	Lunker Rating (>35")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>20")
RESERVOIRS						
WILSON	17.90	0.13	0.13	28.28	G	8.23
GLEN ELDER	0.20	0.00	0.00	9.40	P	1.87
LA CYGNE	NS	NS	NS	2.20	P	0.20

SMALLMOUTH BASS

IMPOUNDMENT	Density Rating (>11")	Preferred Rating (>14")	Lunker Rating (>17")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>11")
RESERVOIRS						
COFFEY CO. LAKE	28.00	19.00	3.00	2.80	E	17.37
GLEN ELDER	11.20	3.60	0.40	5.10	G	15.83
BIG HILL	9.30	6.90	0.50	2.40	G	8.80
CEDAR BLUFF	7.58	1.52	0.00	1.48	F	8.05
MELVERN	3.80	1.00	0.00	1.50	G	7.60
LAKES						
BOURBON CO LK (HIATVILLE)	9.00	6.00	1.00	3.80	G	2.13
WYANDOTTE CO. LAKE	3.50	0.00	0.00	1.10	F	9.30
POTTAWATOMIE SFL #2	3.15	3.15	0.79	3.18	F	NS
JEFFREY EC-MAKE UP LAKE	2.70	0.00	0.00	0.90	F	11.13

SPOTTED BASS

IMPOUNDMENT	Density Rating (>11")	Preferred Rating (>14")	Lunker Rating (>17")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>11")
RESERVOIRS						
CEDAR BLUFF	24.24	1.52	0.00	1.34	F	40.10
SEBELIUS	19.61	11.76	0.00	2.03	F	24.27
TORONTO	NS	NS	NS	NS	P	2.00
LAKES						
BOURBON SFL	45.00	8.30	0.00	1.50	G	22.90
CHASE SFL	31.50	3.90	0.00	1.40	G	38.87
HOWARD-POLK DANIELS LAKE	18.63	8.82	0.00	2.20	F	10.13
FORT SCOTT CITY LAKE	15.40	0.00	0.00	1.00	F	2.50
WILSON SFL	15.00	5.40	0.70	1.70	G	30.73
EUREKA CITY LAKE	8.82	0.00	0.00	1.05	P	5.07

SAUGER

IMPOUNDMENT	Density Rating (>11")	Preferred Rating (>14")	Lunker Rating (>17")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>11")
RESERVOIRS						
CLINTON	4.00	3.50	1.25	2.41	F	7.37
MELVERN	3.70	3.70	0.00	2.20	E	5.87
PERRY	0.40	0.40	0.40	1.97	F	1.50
LAKES						
HOLTON - BANNER CREEK LAKE	24.00	23.50	20.00	4.31	G	21.17

SAUGEYE

IMPOUNDMENT	Density Rating (>14")	Preferred Rating (>18")	Lunker Rating (>22")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>14")
RESERVOIRS						
SEBELIUS	22.10	7.38	0.82	6.27	G	25.43
KANOPOLIS	6.00	2.00	0.25	4.05	F	8.10
COUNCIL GROVE	5.40	3.80	1.00	5.70	G	14.50
LAKES						
GRAHAM CO.-ANTELOPE LAKE	17.00	3.00	0.00	3.67	F	48.33
SHERIDAN SFL	16.00	12.00	5.00	5.98	G	9.00
MARION CO. LAKE	14.00	2.00	1.00	4.66	G	15.67
OTTAWA SFL	12.50	6.00	0.00	3.31	F	10.50
CHASE SFL	11.50	4.50	0.00	2.80	G	21.17
OLATHE-LAKE OLATHE	11.00	0.00	0.00	1.60	F	16.50
ESKRIDGE-LAKE WABAUNSEE	8.00	1.50	0.00	1.59	F	NS
CENTRALIA CITY LAKE	7.50	3.50	0.00	3.25	G	NS
GARDNER CITY LAKE	7.00	2.50	1.50	5.70	G	4.77
GEARY SFL	7.00	0.00	0.00	1.84	F	6.33
HARVEYVILLE CITY LAKE	6.00	2.00	0.00	2.29	F	NS
MADISON CITY LAKE	5.00	1.00	0.00	2.31	F	1.50
PAOLA CITY LAKE	4.50	0.50	0.00	1.96	F	7.67
MIDDLE CREEK SFL	4.00	1.00	1.00	5.30	G	5.17
HARVEY CO. LAKE-EAST	4.00	3.00	1.00	5.05	G	31.00
OLATHE-CEDAR LAKE	4.00	2.00	0.00	3.20	F	6.50
WELLINGTON CITY LAKE	4.00	3.00	2.00	2.70	G	13.67
CARBONDALE CITY LAKE - EAST	3.00	3.00	2.00	4.63	P	2.00
EUREKA CITY LAKE	3.00	2.00	0.00	3.31	F	7.67
SEDAN CITY LAKE-OLD	2.00	2.00	2.00	4.74	P	2.33

WALLEYE

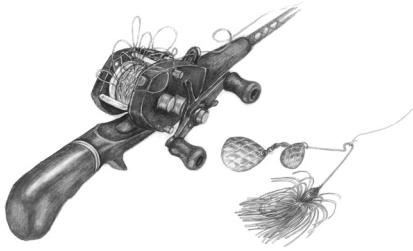
IMPOUNDMENT	Density Rating (>15")	Preferred Rating (>20")	Lunker Rating (>25")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>15")
RESERVOIRS						
WEBSTER	37.20	1.12	0.46	10.52	G	7.00
WILSON	16.90	0.63	0.00	4.97	G	9.00
GLEN ELDER	13.70	2.80	0.00	5.10	G	3.77
LOVEWELL	12.70	1.80	0.00	4.20	G	4.47
KIRWIN	10.23	0.43	0.21	4.37	F	6.37
CHENEY	10.00	5.50	1.67	8.28	G	10.50
CEDAR BLUFF	9.25	1.50	0.50	7.13	F	9.10
MILFORD	7.50	1.83	0.17	6.01	F	6.53
EL DORADO	6.20	1.20	0.00	3.90	F	11.23
HILLSDALE	5.00	2.80	0.30	6.90	G	11.60
SEBELIUS	4.11	1.06	0.21	4.39	F	3.40
MELVERN	2.80	0.30	0.00	4.10	G	2.13
MARION	2.67	0.33	0.17	7.12	F	6.60
LAKES						
SCOTT SFL	27.00	13.00	2.00	9.44	E	13.00
HOLTON - BANNER CREEK LAKE	17.00	9.00	1.00	7.94	G	14.50
COUNCIL GROVE CITY LAKE	17.00	0.00	0.00	2.10	F	10.00
PRATT CO. LAKE	16.00	4.00	0.00	3.43	F	13.33
LEAVENWORTH SFL	7.00	0.50	0.00	5.36	F	7.67
BOURBON CO LK (HIATVILLE)	6.00	0.50	0.00	4.10	G	2.33
WINFIELD CITY LAKE	5.70	5.30	2.00	9.00	G	5.70
SABETHA - PONY CREEK LAKE	5.00	2.00	0.00	3.64	F	3.50
JOHNSON CO - KILL CREEK PARK LAKE	4.00	0.00	0.00	2.10	F	NS
JEFFREY EC-MAKE UP LAKE	4.00	0.00	0.00	1.29	F	7.00
SHAWNEE CO.-LAKE SHAWNEE	3.50	0.50	0.50	4.32	P	4.00
ALMA CITY LAKE	3.00	0.00	0.00	2.00	F	22.00
BOURBON SFL	2.00	2.00	0.00	3.25	F	1.50
BARBER SFL-LOWER	2.00	0.00	0.00	1.53	F	3.33
BONE CREEK LAKE	1.50	1.50	0.00	5.49	F	1.33
WYANDOTTE CO. LAKE	1.50	0.00	0.00	1.70	F	4.50
HERINGTON CITY LAKE-NEW	1.00	1.00	0.00	3.84	F	3.00
CLARK SFL	1.00	0.00	0.00	2.50	F	2.50
BROWN SFL	1.00	0.00	0.00	1.82	P	5.33
JEFFREY EC.-AUX. MAKEUP LAKE	1.00	0.00	0.00	1.80	F	2.33

WHITE BASS

IMPOUNDMENT	Density Rating (>9")	Preferred Rating (>12")	Lunker Rating (>15")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>9")
RESERVOIRS						
MARION	54.00	13.00	1.17	2.04	G	33.63
HILLSDALE	44.00	13.00	0.30	1.70	G	19.53
PERRY	39.40	7.60	0.20	1.76	G	20.70
CEDAR BLUFF	38.75	33.00	5.25	1.98	G	54.17
LOVEWELL	38.50	20.00	3.30	2.30	E	16.20
BIG HILL	26.70	21.70	0.70	1.53	G	51.00
TORONTO	22.25	11.50	5.75	3.97	E	73.83
LA CYGNE	22.25	3.25	0.00	1.45	G	11.43
COUNCIL GROVE	20.80	4.20	0.00	1.40	G	8.23
FALL RIVER	14.00	8.25	4.50	2.98	G	39.10
KANOPOLIS	13.50	8.50	0.75	1.79	G	41.37
CLINTON	12.00	11.75	0.25	1.77	G	33.83
MELVERN	11.00	5.00	0.10	1.60	F	14.20
WILSON	8.25	6.25	0.63	1.90	F	9.67
MILFORD	6.83	4.50	0.00	1.53	F	13.30
GLEN ELDER	6.70	4.20	0.10	1.90	F	45.60
CHENEY	6.67	6.67	1.83	2.78	F	3.30
LAKES						
HERINGTON CITY LAKE-NEW	59.00	7.00	0.00	0.97	F	6.00
GARDNER CITY LAKE	49.00	20.00	5.50	2.40	G	3.00
SHAWNEE CO.-LAKE SHAWNEE	38.00	9.50	0.00	1.19	G	2.70
HERINGTON CITY LAKE-OLD	29.00	0.00	0.00	1.20	F	2.00
CHASE SFL	24.00	21.00	2.50	2.10	G	20.33
CENTRALIA CITY LAKE	16.50	1.00	0.00	0.62	G	NS
PAOLA CITY LAKE	13.50	11.50	0.00	1.09	G	18.50
COUNCIL GROVE CITY LAKE	13.00	9.00	0.00	1.50	G	19.00
JEFFREY EC.-AUX. MAKEUP LAKE	8.50	8.50	0.00	1.41	G	21.67
WINFIELD CITY LAKE	7.00	2.70	0.00	1.50	G	5.70

WIPER

IMPOUNDMENT	Density Rating (>12")	Preferred Rating (>15")	Lunker Rating (>20")	Biggest Fish (lbs.)	Bio Rating	3-Year Average (>12")
RESERVOIRS						
MARION	22.67	22.50	1.67	4.99	G	31.80
CHENEY	19.17	18.50	6.83	6.46	G	13.67
MILFORD	18.50	16.67	2.67	5.24	G	16.63
CLINTON	17.75	17.50	0.25	4.28	G	21.03
POMONA	15.25	14.25	6.50	7.09	G	9.93
SEBELIUS	14.21	13.06	4.69	6.31	G	45.30
CEDAR BLUFF	13.25	13.25	7.75	10.47	G	17.70
LOVEWELL	11.70	11.70	2.70	7.20	G	5.53
KIRWIN	9.45	7.44	2.29	5.14	G	18.43
WEBSTER	8.52	7.19	4.82	6.65	G	17.50
EL DORADO	6.20	6.00	0.80	3.50	G	16.83
GLEN ELDER	4.80	4.80	0.10	4.40	F	10.70
LA CYGNE	4.25	2.75	1.50	7.30	G	9.90
LAKES						
HERINGTON CITY LAKE-NEW	56.00	2.00	0.00	2.37	F	5.67
SABETHA - PONY CREEK LAKE	53.00	7.00	5.00	8.05	G	53.00
PRATT CO. LAKE	24.00	10.00	4.00	5.22	F	11.67
OLATHE-LAKE OLATHE	21.50	1.00	1.00	4.70	G	3.33
LEAVENWORTH SFL	20.00	4.50	4.00	5.57	G	13.00
SHERIDAN SFL	19.00	19.00	6.00	6.34	G	6.33
GREAT BEND-STONE PARK LAKE	19.00	14.00	12.00	5.46	E	23.00
JEFFREY EC-MAKE UP LAKE	18.00	10.00	5.00	4.11	E	30.33
COLDWATER LAKE	17.00	17.00	0.00	1.92	G	83.67
GRAHAM CO.-ANTELOPE LAKE	17.00	0.00	0.00	1.75	P	3.00
MARION CO. LAKE	15.00	15.00	1.00	4.28	G	21.33
WYANDOTTE CO. LAKE	11.00	11.00	2.00	4.60	G	11.00
PAOLA CITY LAKE	10.50	8.50	0.00	2.01	F	24.33
KIOWA SFL	9.00	5.00	0.00	3.56	G	3.00
DOUGLAS CO.-LONESTAR LAKE	7.50	7.50	4.50	4.90	F	7.67
PLEASANTON EAST LAKE	6.50	2.50	0.00	3.00	G	3.00
JOHNSON CO. SHAWNEE MISSION LAKE	6.00	6.00	2.00	6.40	G	11.83
WINFIELD CITY LAKE	5.70	5.70	3.30	6.30	G	9.00
MIDDLE CREEK SFL	5.50	4.00	0.50	4.30	G	14.67
SHAWNEE CO.-LAKE SHAWNEE	3.50	3.00	0.50	3.51	P	18.67
JEFFREY EC.-AUX. MAKEUP LAKE	3.00	2.00	0.00	3.34	G	NS
PONDS						
NEW STRAWN CITY LAKE	12.00	6.00	0.00	3.40	F	19.00
HORTON-LITTLE LAKE	1.00	1.00	0.00	4.19	P	NS



Backlash

by Mike Miller

ProcrastoNation

We are a culture of procrastinators. I know, some personalities are more prone. I'm a good example. I've always been a model procrastinator, putting off what could be done today for tomorrow. It's not something I'm proud of, but it's my nature. However, I believe conveniences of our modern society allow all of us to be what I'll call practical procrastinators.

In the last issue, Secretary Hayden wrote about the department's need to increase revenues and cut budgets. As we've examined our constituent base to learn about license sales, we've discovered that a surprising number of hunters and anglers buy a license just one of out of three years. On one hand, that was good news because it shows that hunter and angler numbers weren't accurately reflected in one year of license sales, and there were more of them than license sales reflected. On the other hand, it means that for a given year, our agency takes in less money.

There is no arguing that the number of Kansas hunters and anglers has declined in the past 20 years. The department has been working to stop that trend through recruitment programs, which are designed to provide Kansas youth hunting, fishing and other outdoor experiences. But our rural communities continue to decline and our urban communities continue to grow. Hunter demographic research clearly shows that someone who lives in a rural community is much more likely to hunt than someone who lives in an urban community. And a hunter who moves to an urban home is more likely to hunt less or even quit. It takes more time and effort to enjoy the outdoors when you live in a urban community, and there are many more activities that vie for your time.

Time, in fact, is the number one reason given by hunters and anglers who don't hunt and fish as much as they used to; they simply don't have as much leisure time as they once did. Many other time-consuming outdoor recreation activities are experiencing similar declines in participation.

Urban communities also lack the hunting culture that is evident in rural areas. In western Kansas towns, people go pheasant hunting in November. The restaurants and motels welcome hunters, and the churches hold hunters' breakfast fundraisers. In that hunting culture, we usually bought our hunting licenses on January 2 because last year's license expired Dec. 31. You wanted it in your pocket when the next hunting opportunity came up. Buying a license required a trip to the local hardware/outdoor store or courthouse. Forget and you might miss out because stores closed at 5:30 p.m. and weren't open on Sunday.

Today, we don't have to plan that far ahead. Some of our license vendors are open until 9 or 10 p.m. -- some are even open 24 hours. And if that doesn't fit your schedule, you can buy from home on your computer, 24 hours a day, seven days a week.

So what we may be dealing with is an increasingly urban society that has a blinding array of activities demanding their time. Even those who desire to hunt may find it difficult to find the time. And as technology has made getting licenses and permits easier and more convenient, we can put our procrastination to work. We don't have to buy our license or permit until the day before we tentatively plan to go. Heck, we can wait until after the weather on the ten o'clock news. If it looks favorable and the bird forecast is good and we have time tomorrow, we can get online and purchase everything we need, then print it out on our home printer. It's easy, but it's also easy to put it off. If the weather takes a turn for the worse or our job requires extra hours, we wait, and the next thing you know, the season is over.

So maybe our license purchasing has become too convenient. Not only is it easy and convenient to buy a license, it's easy to put it off. The department will be looking at ways, perhaps incentives, to convince people to buy their licenses and permits. Stable license sales is important to our funding, and maybe even participation rates. If you purchase your license and permit early, you may be more determined to get into the field when the season opens. And that's really all we are after: generating revenue to pay for the outdoor opportunities we provide.

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