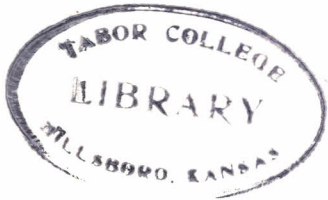


KANSAS FISH & GAME



JOYCE
HARTMANN

1965

Fight Dirty Water!

The theme of National Wildlife Week in March was "FIGHT DIRTY WATER." A poster provided by the NWF carried the wording, "POLLUTION—KILLS WILDLIFE—DESTROYS PROPERTY VALUES—ENDANGERS HUMAN HEALTH." Certain facts contained in a brochure are difficult to realize. For instance, total use of water today is 355 billion gallons per day. It is estimated the use in 1980 will be 600 billion gallons per day. A typical city of 100,000 people uses 70 million gallons of water per day resulting in this waste: 17 tons—organic suspended solids, 17 tons—organic dissolved solids (including a ton of detergents), 8 tons—inorganic dissolved solids, and 60 cubic feet of grit. Figures like these leave little doubt that pollution is a serious threat. The problem cannot be solved in this small space, but perhaps we can add a little food for thought.

We hear a great cry of protest when fish are killed in a stream somewhere in the state. Why do those same people remain silent when, as their community grows, adequate measures are not taken to provide sewer systems, sewage treatment plans providing secondary treatment, and adequate and properly trained personnel to maintain the plant. We must all join the fight against dirty water, not just because it threatens our fishing, boating and swimming but because it threatens our very existence.—John Polson.

Published Quarterly
by the
**KANSAS FORESTRY,
FISH AND GAME
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Pratt, Kansas

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Edited by Information-Education Division

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Antelope Prospectus, 1965

By **BILL D. HLAVACHICK**, *Game Biologist*

On Thanksgiving Day, 1964, seventy-five antelope were released in northwest Kansas in Wallace and Sherman counties. This was the partial culmination of a job begun under Federal Aid project W-23-R in July of 1962.

Supporting Federal Aid funds are made available to the several states through the distribution of monies collected from an 11 percent excise tax on sporting arms and sporting ammunition.

During the summer and fall of 1962 and 1963, several large areas of native pasture and rangeland in Wallace and Sherman counties were signed up, under a landowner/Fish and Game Commission Cooperative Agreement, to receive antelope as soon as they became available. This was but one of the many steps in the program of antelope restoration in Kansas. Rangeland areas were chosen on the basis of their size (exceeding 10,000 acres), remoteness, available food supply, historic antelope range and other factors.

Two areas in Sherman and Wallace counties, already harboring some eighty native antelope, were selected to receive antelope first in order to add to the native stock. Other areas that are to receive antelope are Barber County, Edwards County, and the Flint Hills of Eastern Kansas. There are two locations in Barber County, one in the southwest measuring some 43,000 acres and one in the northeast with 20,000 acres that are now under Cooperative Agreement. No release sites have been signed up in the Flint Hills or Edwards County as yet but work leading to this phase of the study will commence during the summer of 1965. It is felt that the Flint Hills, due to their large, remote pastures will become



Montana antelope arrive in Kansas and are ready for release.

one of the major strongholds of this fine game animal.

With landowner acceptance and support, the antelope restoration program may well provide many areas in Kansas with sufficient numbers of antelope to build up self-maintaining herds.

During the winter of 1962 and 1963, several attempts were made to obtain antelope from South Dakota and Montana. These attempts failed, however, due to the ever unpredictable weather. As antelope tend to congregate in large numbers only during the winter, trapping them at other seasons is not practical. Open winters with less than average snowfall in both

South Dakota and Montana during 1962-63 left the antelope scattered and any trapping attempts doomed to failure.

In November, 1964, following heavy snowfalls in northwest Montana, antelope trapping operations were again initiated. The area to be trapped was the National Bison Range near Moiese, in northwest Montana. Eighty-four antelope were trapped on November 24 and shipped to Kansas via commercial truck. Of the original eighty-four animals, nine were dead on arrival, thirty-five were released in Wallace County and forty were released in Sherman County. Subsequent follow up of the released

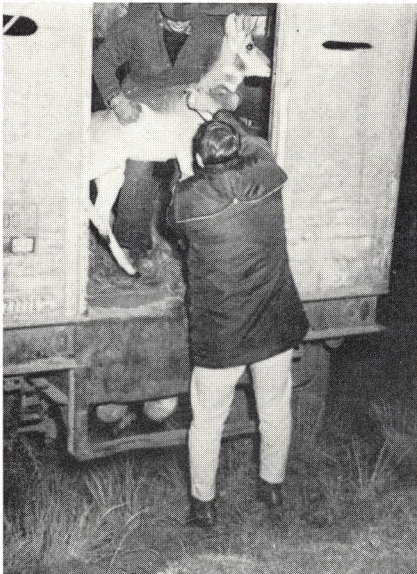


Following a long truck ride, the antelope were anxious to regain their freedom.

antelope showed that three more mortalities had occurred. The remaining seventy-two antelope seem to be in good condition and fast becoming familiarized with their new home. It is hoped that the new arrivals will extend their range eastward along the Smoky Hill river and into areas that have not seen antelope since the late 1800's. Other state agencies in states having antelope are being contacted in order to obtain more shipments of antelope for release. Negotiations with these states will be carried out during the coming months with the hope that additional antelope can be obtained during the winter of 1965-66.

If the transplanted antelope reproduce as expected we should see a gradual build-up in numbers over the next few years. Since antelope usually give birth to twin kids every year, often commencing with the first year of life, their reproductive potential is great. Whether this potential is realized or not is another matter. There are many factors acting on young antelope; such as, predation during the main kidding period, abandonment by

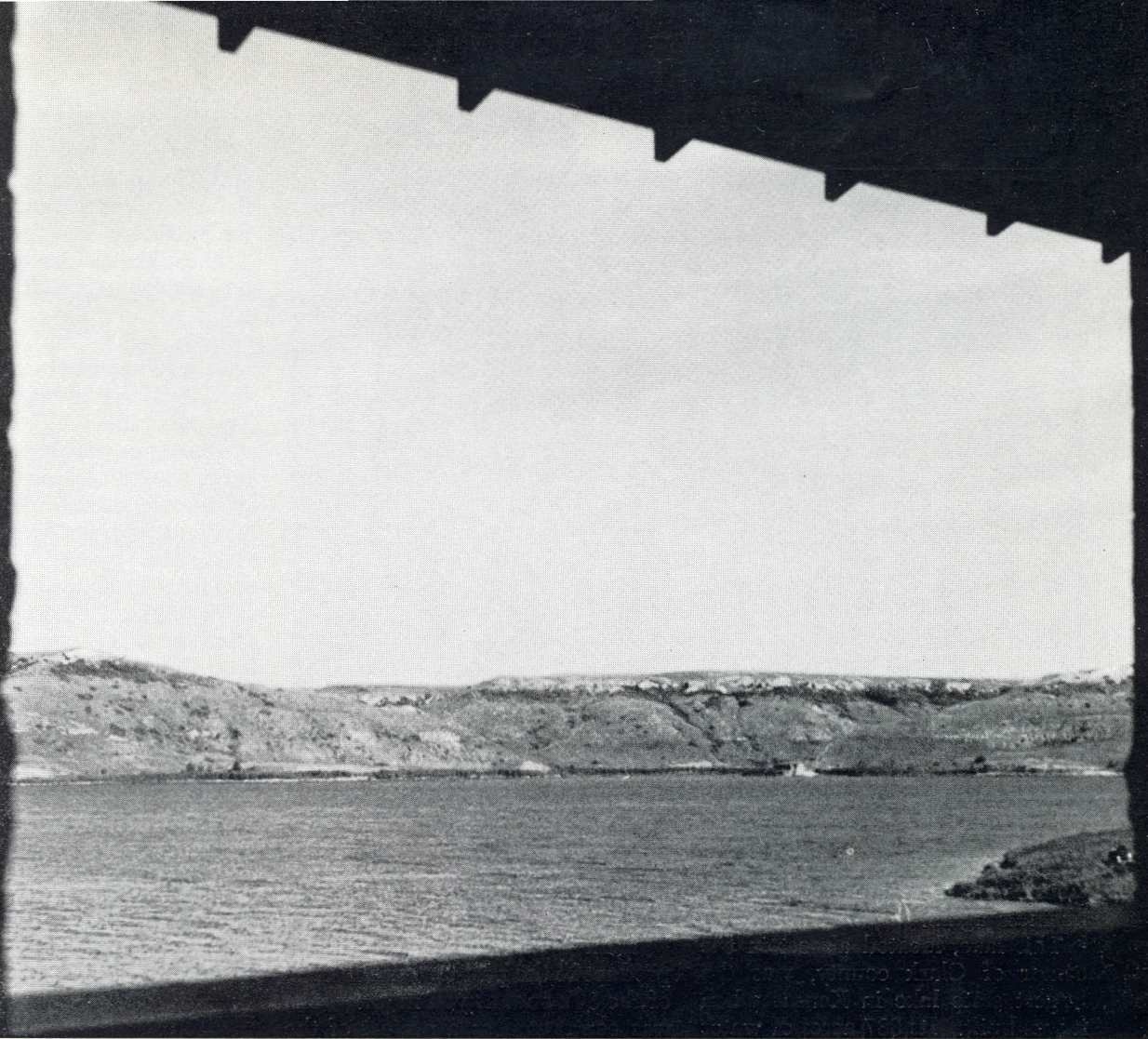
(Continued on page 16)



The animals were marked with paint for identification in later progress checks.



The last one is marked and the cold winter's night job is done.



The stone shelterhouse on the east side of Clark County State Lake provides a frame for the pleasant scene.

Clark County State Lake

25th of a series on the State Lakes of Kansas

By **GEORGE VALYER**

Not long ago, I saw one of the funniest cartoons I have ever seen about fishing. It showed a man sitting on a dock, fishing rod in hand, and a fish hook through his thumb. The caption underneath read: "gosh, golly, gee whiz, ouch, jeepers, oh me." This cartoon immediately made me think of Clark County State Lake because it was at this location that I last saw a fellow with a hook in his hand. The biggest difference was in what he

was saying and it wasn't gosh, golly, etc. The words he was muttering are not printable here but he was a game chap anyway. He went right on fishing after he had removed the hook.

The incident mentioned above occurred in 1963 on the occasion of the reopening of Clark County State Lake after undergoing rehabilitation. That was quite a day and I suppose it will be remembered for many years by those who were there. The bass hit like crazy and it wasn't unusual for fishermen to take their limit in an hour or two.

The channel catfish also cooperated well at some locations, primarily near the dam. Not too many crappie and bluegill were caught but large bullheads graced many a stringer.

The weather also cooperated with the event. It was a beautiful late fall day and boats dotted the blue waters of the lake in some numbers. A constant procession of vehicles, cars, pickups with campers and even farm trucks, wound their way around the lake shore and up and down the entrance roads

(Continued on next page)



Nestled between canyon walls, Clark County State Lake lures anglers from all parts of southwest Kansas.

leading into the lake. Yes, Clark County State Lake was back in business again.

This lake, located almost in the center of Clark county, was the largest state lake in Kansas when it was built. Its 337 acres of water with a shoreline of seven miles made it a tremendous attraction for fishermen from all over the western half of Kansas. Before the advent of the federal reservoirs, this lake had regular visitations from as far away as Wichita and Hutchinson. It still remains the largest body of

water in the southwest quarter of Kansas since no large reservoirs are located there.

Clark County State Lake was a product of the post-depression days of the 30's and, as you might guess, was constructed as a project of the Civilian Conservation Corps. Work was begun by that agency in 1935 and the dam and roads were completed in 1938. A visitor today can still see the foundations of the buildings which composed the CCC camp on the east shore of the lake. The Kansas Forestry, Fish



This photo, taken in the 30's, shows the construction of the dam and spillway. It was the largest dam in Kansas at this time.

and Game Commission provided the money for the materials used in the project.

The lake itself is nestled between the sharply-rising bluffs of Bluff Creek. Entering from either the east or west sides, one descends nearly 200 feet before reaching the canyon floor at the base of the dam. The panorama which greets the eye of the rimside observer is sometimes breath-taking, especially when compared to the level countryside which lies to the north and east. The approach from the north, which is used by most visitors, is by way of U. S. 54 and then south from the small town of Kingsdown. The eleven miles from this village has recently been established as a state highway and a hard surfaced road now leads to the lake entrance.

When traveling in from the south, Ashland is the point where paved roads are left behind. A well-maintained county road winds northward through the Clark county hills and joins the state road just a mile from the entrance.

History and legend have woven many tales concerning the area. The canyon was supposed to have been the meeting place of various tribes of Indians prior to the coming of white man. It is evident even today that this was a popular spot for Indian encampments since artifacts may still be found in the area. Legend also states that this location was once the hideout of outlaws during the early days of the West. Some maintain that the notorious Dalton gang once camped there while traveling between Coffeyville and Mead. It is not hard to imagine such past scenes as one views the rugged, wild area of Bluff Creek canyon.

Fishing was excellent at Clark County State Lake for many years. Its depth, nearly 50 feet in places, helped to maintain good populations even in times of drouth. However, through the passing years, the fishing gradually became poorer as large populations of carp were built up and small crappie became too numerous to allow for growth. Many species of fish not suitable

for small lakes were also to be found in the waters. By the late 1950's, it was evident that something had to be done. It was decided to rehabilitate the lake completely through drainage, stabilizing the bottom with vegetative growth and then restocking following the refilling of the impoundment.

In 1960, the valve in the dam was opened and the lake began its slow death. The drainage operation produced many complications. Twice during the operation, the outlet became plugged with silt and pressure hoses brought in to open the passage. The salvage operation which followed the draining revealed that the decision to rehabilitate had been a wise one. Hoards of small, stunted fish were removed and only a relatively few good channels and bass were found.

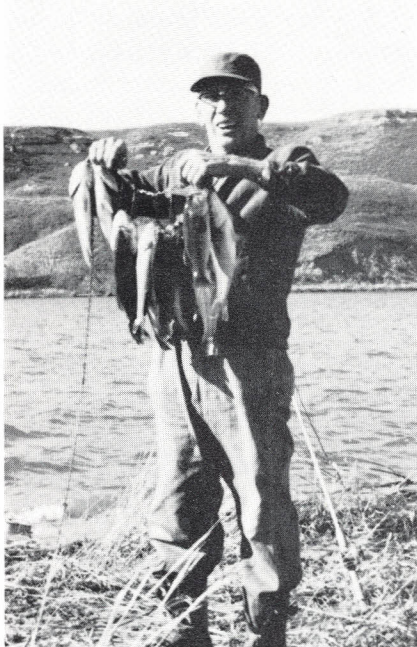
Completed extensive repairs to the spillway which had been previously damaged by high water. As soon as enough water had been impounded, the lake was stocked with channels, largemouth bass, bluegill and crappie. Present fishing success indicates that fishermen should be well pleased with a trip to this Clark county attraction.

Almost everyone who has fished this lake has run into genial Leslie Freeman, longtime caretaker at this location. Lee is quite helpful to all visitors and will gladly give you tips on what bait is currently best and where to drop it. He knows this lake intimately since he has lived there for the past 20 years.

Clark County State Lake has the usual camping, picnic and day-use facilities. One of the favorite camping spots for many is located below the dam in a grove of trees.

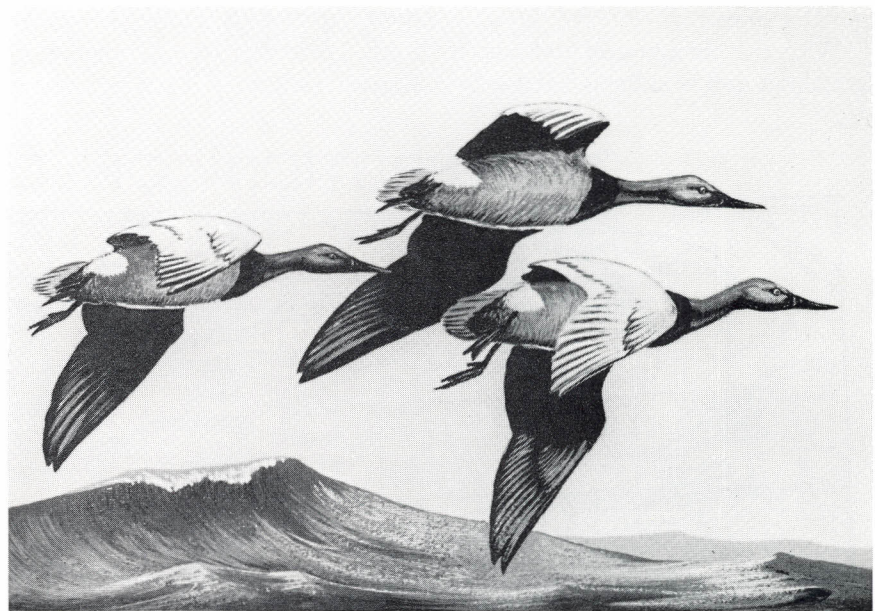
A shelterhouse is located on the east side of the lake close to the entrance. Numerous overlooks on both sides of the canyon provide inspiring views of the entire canyon. Although portions of the western shore and upper end of the lake are inaccessible to vehicles, paths and trails lead to these areas. Many fishermen appreciate the solitude which they find by walking these paths to a favorite angling spot.

On a warm summer afternoon, the purple shadows come early to the canyon and provide a welcome break in the heat. As the last rays of the evening sun highlight the cliffs on the eastern shore, the coolness of the lake seems to spread its comfort everywhere. High on the canyon rim, a coyote echoes his wail of welcome to a rising moon.



Typical of the catches on reopening day in November of 1963, this string of fine bass represents two hours of angling by two fishermen.

Then began the rebirth. During the summer of 1961, a good growth of vegetation was established on the exposed lake bottom and the valve was closed in the fall of that year. During the time the lake was dry, construction crews of the Fish and Game Commission ac-



New Duck Stamp

Twenty-nine states and the District of Columbia were represented by 85 artists who competed in the 16th Annual Federal "Duck Stamp" contest annually conducted by the Department of Interior's Bureau of Sport Fisheries and Wildlife. The winner, selected from 138 designs, is a wash drawing of three canvasback ducks shown over open water. Honors

go to Ron Jenkins, of Carlisle, Pennsylvania. As customary, the new Migratory Bird Hunting Stamps go on sale July 1 and expire June 30 of the following year. About 1,500,000 stamps were sold last year. Nine artists from Minnesota submitted 18 drawings, putting that state ahead of all others. Illinois and Pennsylvania split second place honors with 10 entries each.

in selected areas of southeastern Kansas.

Mule deer are most common in the western one-third of the state, with white-tailed deer predominant in the eastern two-thirds of Kansas. The deer population in northeastern Kansas is rather evenly distributed, but in the western portions of the state, local deer concentrations are closely associated with the woody vegetation along major water courses. The Chautauqua Hills region of southeastern Kansas has a sizeable local deer population.

The Need for a Season

The rapidly increasing deer population in Kansas has begun to cause serious problems in some areas. There is limited wildland habitat, and as such, Kansas will never become a major deer producing state. The lack of wildland results in the increased utilization of agricultural crops by deer as the population increases. In 1964, the Commission conducted a survey of 3,500 farmers and ranchers concerning their attitudes toward deer and deer hunting. On the basis of this statewide survey, it is estimated that 6.5 percent of the landowners experienced some deer crop damage in 1963. In some northern counties, 15-20 percent of the respondents indicated some crop utilization by deer. As the deer population continues to increase, it is apparent that the carrying capacity for deer in Kansas is not primarily related to biological factors, but rather economic considerations of how much crop damage the landowners will tolerate.

Increasing highway deer-car accidents are another indicator of the need for an open hunting season.

In 1958, 118 deer were killed in such accidents; the number increased to 431 in 1964. This cost Kansas motorists between \$65,000 and \$85,000 in 1964 alone.

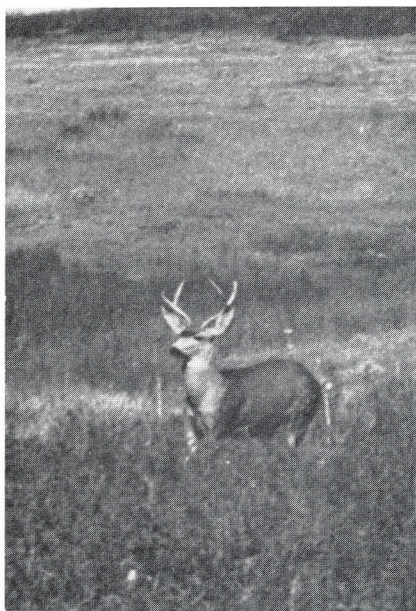
An effort must be made to control the rate of increase in the deer population in local areas, and the only logical approach to this goal is through an open season on deer.

Archery Deer Hunting

An open season for the taking of deer with bow and arrow has been set for the period of October 1, to November 15, 1965. The entire state with the exception of the southwest quarter will be open to the taking of deer through the archery season. That area south of State Highway K-96 and west of Federal Highway US-281 will be closed to all deer hunting.

There will be no limit on the number of archery deer permits issued, but each archer may receive only one permit. The legal bag and possession limit will be one deer of either sex during the archery season.

Legal equipment will be a long bow of not less than 35 pounds pull using broad-head arrows. Cross bows will be illegal, and archers will not be permitted to carry firearms.



Firearms Deer Hunting

The Commission authorized a firearms deer hunting season for December 11 through 15, 1965. All firearms deer hunting will be on a permit basis. A total of 4,575 firearms permits have been authorized.

Twelve deer Management Units (see map) have been planned, with boundaries on State and Fed-

eral highways. The maximum number of permits in any one unit is 600. In one unit, only 50 permits will be issued. The Management Unit approach will permit greater flexibility in deer management, as the number of permits and the legal target can be altered from year to year as specific conditions warrant.

Three of the Management Units will have only antlered bucks as legal targets; three will be "bucks only" except on the last day when previously unsuccessful hunters may take one deer of either sex. In six Units, hunters may take one deer of either sex.

After much consideration of the deer hunting safety factors, and the current use of rifles in the state, the Commission authorized the use of both shotguns and rifles for the taking of deer, at the option of the landowner on whose land the permit holder will hunt.

Firearms Specifications

Shotguns will be restricted to 20-, 16-, 12- and 10-gauge, using only rifled slugs; use of buckshot will be illegal. Legal rifles must have a bore 23/100 inches or larger in diameter (.23-caliber) and must be capable of firing a cartridge having an over-all length (case and bullet) of at least two inches.

Long term, nationwide deer hunting accident statistics compiled by the National Rifle Association show that the high-powered rifle is no more hazardous than the shotgun for taking deer, and in many cases is actually safer. Based on a recent survey of licensed hunters by the Commission, it is estimated that at least 22,000 hunters currently use high-powered rifles to hunt coyotes in the state. This number is far greater than the 4,575 firearms permits authorized for 1965.

Maximum deer hunter density will range from one hunter per 40 square miles in the Smoky Hill Deer Management Unit to one hunter per 2.6 square miles in the Missouri River Unit.

Several check stations will be

(Continued on page 21)

Tuttle Creek Reservoir Wildlife Management Area

By GRAYDON W. CLARK

Tuttle Creek Dam and Reservoir is located four and one-half miles north of Manhattan, Kansas, on the Big Blue River and was completed in 1962 as a flood-control project by the U. S. Army Corps of Engineers. The reservoir at conservation pool, elevation 1,075 feet, impounds a surface area of 15,800 acres of water. At this elevation, a body of water approximately 18 miles in length creates about 112 miles of shoreline above the dam site.

In 1964, the Kansas Forestry, Fish and Game Commission entered into a 25-year license with the Department of Army for administrative control of approximately 11,800 acres of land for fish and wildlife management purposes. The licensed wildlife lands are situated north of the bridge, crossing the reservoir, on K-16 highway one and one-half miles east of Randolph (see map inside). All of the government property situated north of the bridge is open to public hunting except the following areas: Three "Public Use Areas"; Fancy Creek and Randolph State Parks and Swede Creek Recreation Area and the two waterfowl sanctuary areas shown on the map. The Wildlife Management Area, open to public hunting, is marked with black-and-yellow signs denoting "Public Hunting Area." The two waterfowl sanctuaries are clearly identified by red-and-white signs stating "Stop—Refuge Area—No hunting."

A wildlife habitat program initiated in 1964, by the Kansas Forestry, Fish and Game Commission, includes the development of cover and food plantings for upland game and migratory waterfowl. These plantings include the use of corn, sorghums, millets, legumes, grasses

and woody plants beneficial to resident and migratory game. Agricultural fields are leased to local farmers on a share-crop agreement with the State's share of crops being left in the field, in various arrangements, for utilization by wildlife species.

Habitat development for game birds and mammals is being initiated on crop fields, other than the waterfowl feeding areas, and grass and timbered areas of the management unit. The purpose of this development is to improve the habitat to a point where the carrying capacity of the area is increased, thus resulting in good huntable populations of upland game species.

The basic game management principle of "edge" is being employed through the planting of grass-legume strips, as well as the establishment of woody plantings along field borders and as crop-field dividers (subdividing large cropfields into smaller field units).

The principal upland game bird in this area is the bobwhite quail; therefore, management practices being employed on the unit are directed toward this species. These same management techniques, however, directly benefit cottontail rabbits, squirrels and mourning doves. Deer and prairie chickens are to be found on the area and utilize crops that have been left in the field.

Waterfowl management on Tuttle Creek Reservoir includes techniques which are used nationwide, but sometimes not fully understood by the hunter. The refuge (sanctuary) areas where no hunting is allowed on certain waters and lands, are an integral part of the overall plan for improving water-

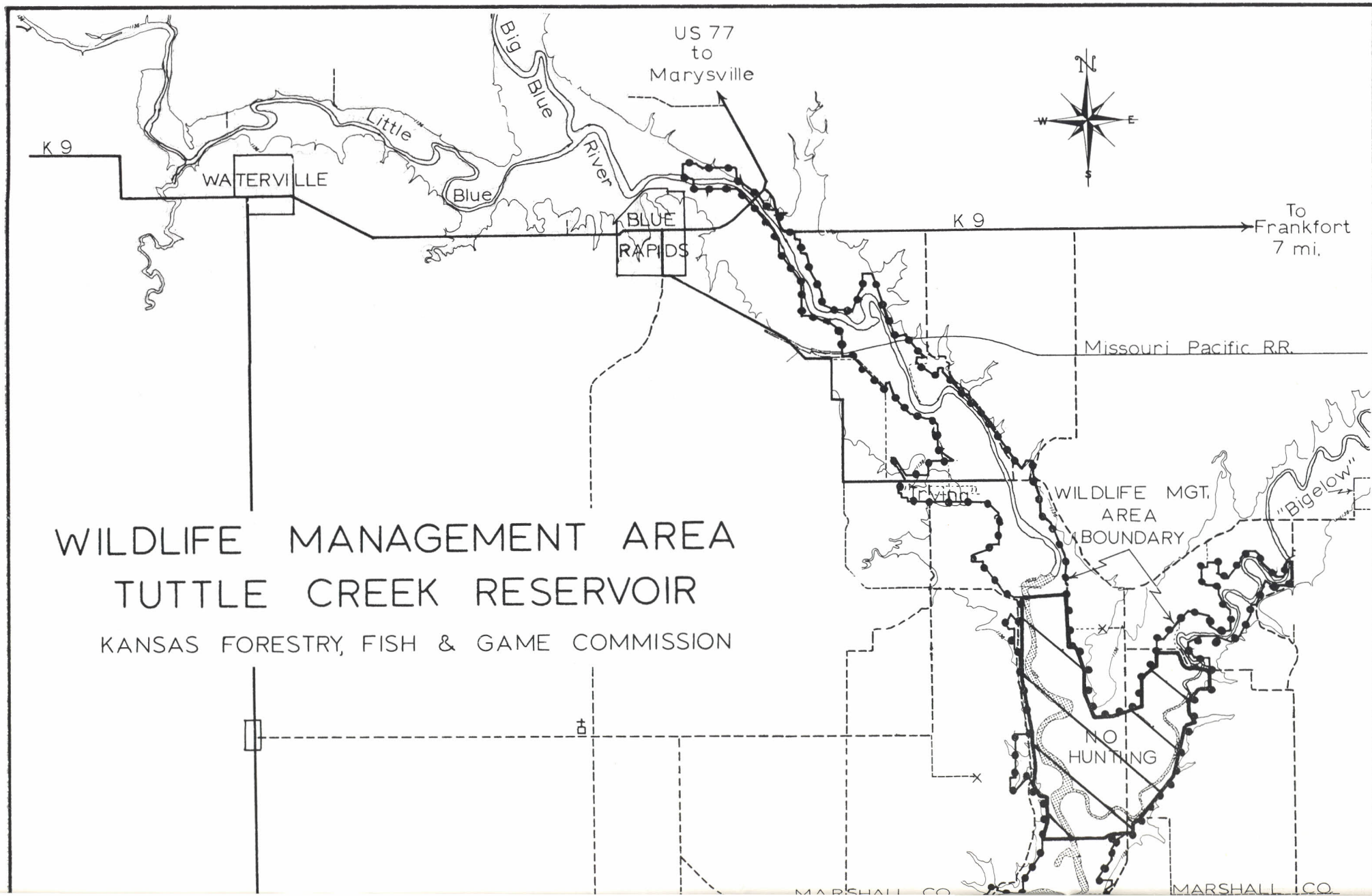
fowl hunting. The purpose of the refuge areas is to hold greater populations of waterfowl in the area for a longer period of time, thereby increasing the opportunity to hunt these species. Waterfowl crops are left unharvested in many fields on the reservoir lands which are open to hunting, as well as in the refuge, thus providing an opportunity for excellent feed-field shooting.

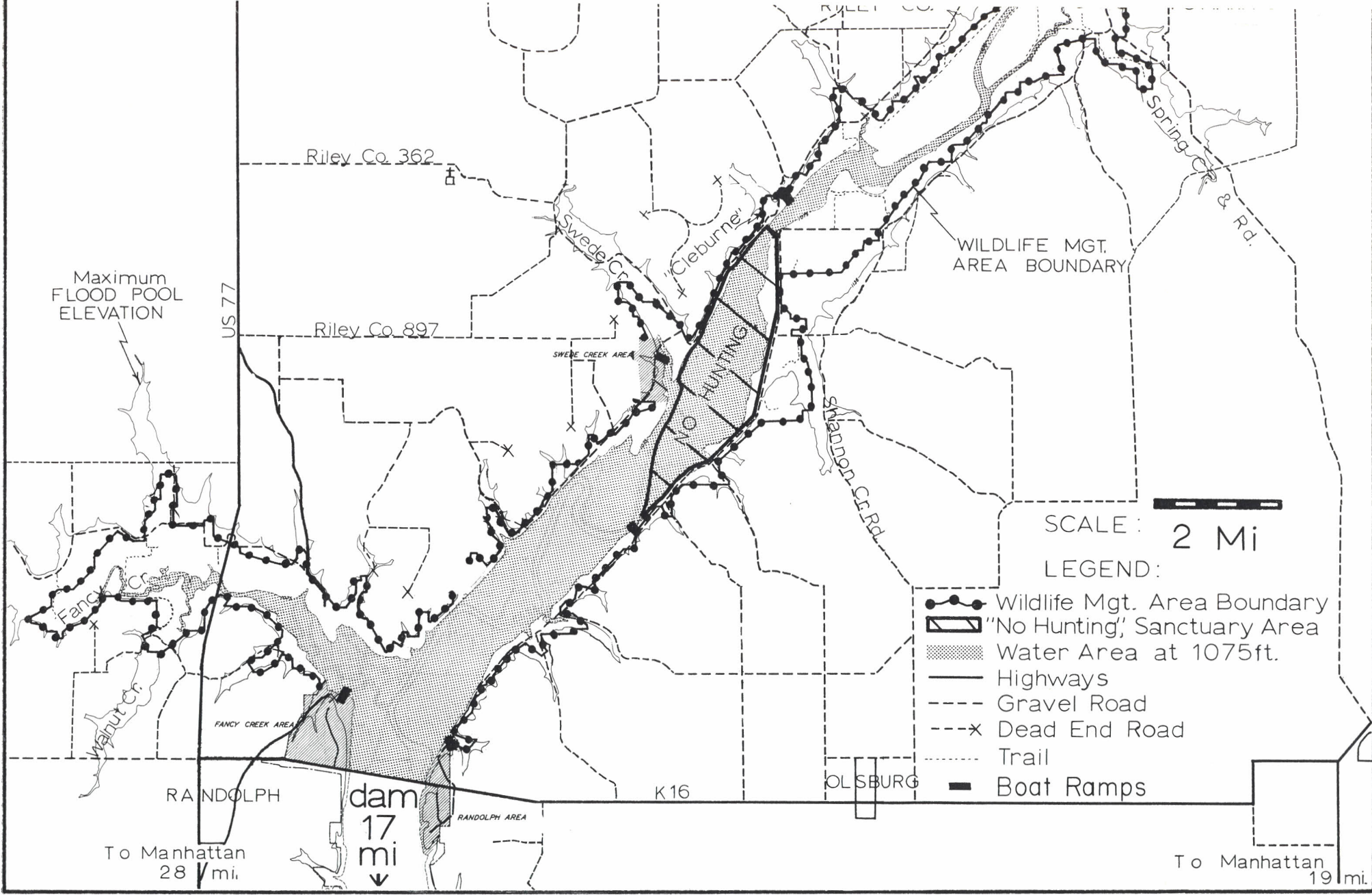
Caution should be exercised when entering upon what are thought to be "public lands," as the boundaries of the reservoir area are not fenced. In many instances, private lands are located between the public roads and government boundary lines; therefore, permission from landowners must be obtained before crossing these private areas.

A state regulation *prohibits the digging of pits* for building of blinds or any other purpose. Duck blinds must be either constructed from natural materials found at the site of the blind or of a portable nature.

Fisheries management of Tuttle Creek Reservoir has included the stocking of walleyes, northern pike, largemouth bass, bluegill, crappie, and white bass. Stocking of channel catfish and flathead catfish was not done, as sufficient native stock of these species were to be found in the river.

Additional information relative to public hunting lands is available from the I & E Division of the Kansas Forestry, Fish and Game Commission, Box F, Pratt, Kansas. Inquiries concerning recreational facilities at Tuttle Creek Reservoir should be directed to the Kansas Park and Resources Authority or the U. S. Army Corps of Engineers Project office located at the dam.





WILDLIFE MGT. AREA BOUNDARY

Maximum FLOOD POOL ELEVATION

Riley Co. 362

Riley Co. 897

US 77

SWEDE CREEK AREA

FANCY CREEK AREA

RANDOLPH

dam
17
mi
↓

RANDOLPH AREA

K 16

OLSBURG



SCALE : 2 Mi

LEGEND:

- Wildlife Mgt. Area Boundary
- "No Hunting", Sanctuary Area
- Water Area at 1075ft.
- Highways
- Gravel Road
- Dead End Road
- Trail
- Boat Ramps

To Manhattan
28 mi.

To Manhattan
19 mi.

Deer Hunting with Bow and Arrow

By DR. ARNOLD O. HAUGEN, *Leader*

Iowa Cooperative Wildlife Research Unit
Iowa State University, Ames, Iowa

Arnold O. Haugen has been closely identified with organized archery for many years and has held numerous posts in connection with state and regional wildlife and game conservation. He is Past President of the National Field Archery Association and recipient of this organization's top award, the Compton Medal of Honor. Dr. Haugen has co-authored with Dr. Harlan G. Metcalf, a book entitled "Field Archery and Bowhunting" (The Ronald Press Co., 1964). Dr. Haugen is Professor of Zoology at Iowa State University, Leader of the Iowa Cooperative Wildlife Research Unit, and Biologist of the U. S. Bureau of Sport Fisheries and Wildlife.

Before the coming of white man to Kansas, the bow and arrow was the principal hunting weapon in the state. With his bow and arrows tipped with sharp stone arrow points, the Indian killed enough game to provide much meat for food and hides for clothing and shelter. Deer and elk along the wooded borders of streams and bison on the prairies were common to abundant in those presettlement times.

The herds of game likewise provided many of the necessities of life for pioneers while they were establishing their homesteads.

As a result of increasing pressure from improved weapons, the conversion of wild game range to agricultural use, lack of adequate game laws, and little public appreciation for game animals, Kansas, like many other states, lost its big game heritage in the late 1800's.

As a result of diligent work on the part of game authorities and cooperation from landowners over the years, Kansas, again has the opportunity to hunt deer. A valuable heritage has been restored, one which when managed wisely, can allow an annual harvest of part of



Both the challenge and reward in bowhunting are great. The real fun, however, comes in getting ready for and in carrying on the hunt. Here the author grins with satisfaction.

the herd of deer, just like the annual production and marketing of live-stock.

Bow and arrow deer hunting will return to Kansas this fall when deer hunting again becomes legal. Kansas is the last of the continental states to provide for bow and arrow deer hunting, a way for providing maximum recreation with a limited resource. Oregon and Wisconsin led the way in bowhunting. They were first to recognize the merits of bow hunting as a way to get more fun out of the big game resource at little expense to the herd. It was in 1934 that Oregon set aside a refuge area, and Wisconsin provided the first separate season for archery deer hunting.

Modern-day bow and arrow hunting got its first major emphasis from such stalwart outdoorsmen as Maurice and Will Thompson from north Georgia, Dr. Saxton Pope and Wm. "Chief" Compton of the west coast and Art Young a Midwesterner. The exploits of these pioneering bowhunters were widely publicized in nationally circulated magazine articles and books. They laid the foundation on which today's bow hunting is based. Their exploits included the bagging of such large game animals as deer, lions and black and grizzly bears.

Proper Equipment Important

A well-equipped bow and arrow deer hunter needs a bow, broad-head arrows, a quiver, an armguard and a shooting glove or fingertab. His bow needs a pull of at least 30 pounds when used with the length of arrow the archer effectively draws in shooting. Modern bows of laminated construction and fiberglass are the choice weapons, but time-tested bows of osage orange or yew wood are acceptable. Lightweight hickory or lemonwood bows are inefficient and are avoided by experienced archers. To carry such a bow is a waste of time and effort because the high trajectory of hunting arrows shot from these cheaper bows makes it difficult to score a hit.

Any straight arrow of wood, fiber-



Cottontails provide excellent bowhunting sport and "sharpen" your ability to hit the mark.

glass or aluminum when properly matched to the weight of the bow and when tipped with a sharp broadhead arrow-point is adequate for deer. For adequate penetration, the arrows ought to be about an ounce or slightly more in weight. Any arrow if it is to shoot properly must have the proper degree of stiffness (spine) for the weight (pull) of the bow from which it is to be shot. When buying arrows, be sure to check the box the arrows came in for information on the weight of the bow they are to be shot in. Wood arrows should also be checked for straightness before purchase. If they are crooked, don't accept them.

An armguard not only helps protect the archer's arm from painful slaps from the bow string, but also keeps loose sleeves out of the way

so the string will have a free and clear passage in speeding the arrow on its way. A clear passage for the string contributes to a straighter shot and the delivery of the full power of the bow to the arrow.

The shooting glove or fingertab protects the string-pulling fingers from blisters and soreness, and helps the archer accomplish a smooth release, thereby contributing to improved accuracy in shooting.

Quivers for carrying extra arrows are of three principal types, one fastens onto the bow, one is carried over the shoulder and the third fastens to the hunter's belt. Each type has its good points and some disadvantages.

Where an experienced archer is available, consult him before you

(Continued on page 19)

Two New Bass Records

Two more Kansas anglers now have their names recorded in the elite register which logs record fish for the state. They join the fifteen others who have previously established or broken such records in Kansas.

The new record-holder in the largemouth black bass classification is Charles "Shorty" Prewett of Pittsburg, who caught an 11-pound, 3-ounce whopper on January sixth of this year. His fish exceeded the old record by one pound, two ounces. It was taken from a private 17-acre lake in southern Bourbon County using a Johnson silver minnow with a pork rind trailer.

The other new record was established for the spotted bass by John I. Waner of Newton. His 3-pound, 12½-ounce specimen was the first of this species to be officially registered. It was taken at Marion County Lake on April 5, 1964, but registration was not finalized until recently.

Personnel Attend Departmental School

Employees of the Kansas Forestry, Fish and Game Commission attended the third annual departmental training school at Rock Springs 4-H Ranch, near Junction City, January 18-22. Four states including Kansas were represented on the program. Personnel from fish and game departments in Oklahoma, Missouri, Georgia and Kansas, representatives of departments of state and local government and universities and various manufacturers presented to the Kansas fish and game employees a most extensive program.

The purpose of the annual departmental training school is to further the basic knowledge of the employee in his particular field and help him to more thoroughly understand the operation of the other divisions of the commission and to keep abreast of what other groups are accomplishing.



Charles Prewett, Pittsburg, Kansas with new state record largemouth bass.

Antelope Prospectus

(Continued from page 4)

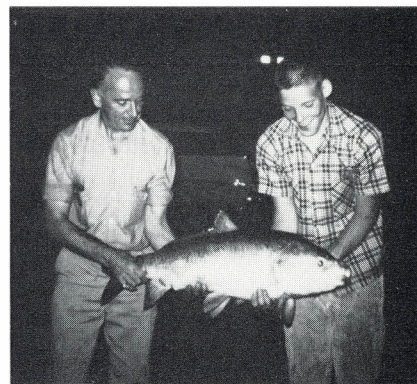
the doe (either intentional or because the doe had been killed) and other factors. Since about 90 percent of the antelope are born within a ten-day period, one can see the effect of a cold, lengthy rain during this period could have on that year's kid crop.

A recent aerial survey of all the antelope range in northwest Kan-

sas showed a total of 140 animals. This takes into account the native stock wintering in the state plus those that were transplanted from Montana. With the coming of spring, if they follow the usual pattern, about 30 of the native antelope will move into Colorado for the summer. The remaining animals will break up into small groups and singles, bear their young and come back together in the fall. At this time another survey



John I. Waner, Newton, Kansas with state record spotted bass.



A. J. Bertram and son hold state record buffalo.

Correction

In the last issue of *KANSAS FISH AND GAME*, there was a column about the new record on buffalo fish for Kansas. Due to an error, the picture which accompanied the column showed the current white bass record rather than the buffalo.

Here is the picture of A. J. Bertram and his son as they hold the 23-pound, 1-ounce buffalo. Our apologies to Mr. Bertram for the error.

**Get the Landowner's
PERMISSION
to HUNT or FISH**

will be made that will determine how many young were born to how many females, thereby indicating reproductive success. This information and that obtained in the winter survey is used to determine whether or not the herd is increasing, decreasing or remaining stable.

With this first transplant of antelope successfully carried out, the Forestry, Fish and Game Commission is looking forward to future transplants with great expectations. So, too, should the people of Kansas, who once again may have the opportunity of seeing this native of the plains back in his original domain.

Hunting Safer Than Church Socials

Hunting may be safer than church socials, says the National Wildlife Federation. A five-year study by the Travelers Insurance Company of claims paid for accidents in recreational participation showed more persons who took part in recreational activities and games at church socials filed claims than did hunters and shooters. The study showed, in fact, that hunting and shooting accident claims were 16th on the list—far below baseball, football, golf, fishing and other sports.

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(In compliance with Statement of Ownership, Management and Circulation Act of October 23, 1962; Section 4369, Title 39, United States Code.)

Date of Filing: **September 23, 1964.**

KANSAS FISH AND GAME is a quarterly magazine owned and published by the Kansas Forestry, Fish and Game Commission, Box F, Pratt, Kansas, Zip Code 67124. (State Agency.)

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I certify that the statements made by me above are correct and complete.

JOHN D. POLSON.

Individual Anglers to Receive Awards in State-by-State Program

Kansas anglers will have an opportunity to receive recognition for their individual abilities during the year as a result of a program being initiated by a national sportsman's magazine. "SPORTS AFIELD" recently announced a Fishing Awards Program to give recognition of individual angling achievement.

To qualify, you register a fish of at least the established minimum weight, hooked and landed by you. Emphasizing one point, the announcement stated, "This is not a fishing contest to see who can catch the biggest fish. Rather, it is a presentation of individual awards to anglers in each state, in the belief that this is more in keeping with the true spirit of fishing."

The minimum weights for Kansas in the contest are as follows:

Channel Catfish	15 pounds
Largemouth Bass	7 pounds
Black Crappie	3 pounds
White Crappie	3 pounds
White Bass	4 pounds
Bluegill	1½ pounds
Walleye	7 pounds
Northern Pike	8 pounds
Black Bullhead	3 pounds
Flathead Catfish	60 pounds

The angler submitting each qualifying entry will receive a handsome parchment Certificate of Merit soon after the entry is accepted. Shortly after the first of each year, the angler submitting the previous year's "Best in State" of each species will receive a sterling-silver Sports Afield Sport Fish Pin, plus a special parchment Certificate of Merit—and recipient's name will be listed in Sports Afield.

Award Rules

1. Fish must be caught on sporting tackle, hooked and landed by entrant.
2. Fish must be caught in state where it is entered.
3. All aspects of catch must conform to state laws.
4. How to measure: Close fish's mouth and measure from tip of jaw to tip of tail; this is the length. For girth, measure around fish at thickest portion.
5. How to weigh: Fish must be

weighed on accurate scales which will be subject to verification at any time.

6. Fish must be entered within 30 days after being caught. Entries received after December 31 will be entered in following year's program.

7. Each entry must be accompanied by clear side-view photograph which becomes property of Sports Afield.

8. How to enter: (1) Have fish weighed, measured and entered at any Official Sports Afield Awards Dealer Station; or (2) if no such station is available, have fish weighed and measured in presence of two witnesses who sign official entry blank or facsimile.

Boating Pointers to Check and Remember

With another boating season all but underway for some and already underway for others, there are certain things that should be checked to make this a safe and enjoyable year for Kansas boaters.

First, and one of the most important, is the condition of your lifesaving devices. The Kansas Boating Act requires that the operator of any boat or vessel shall have aboard one life preserver, buoyant vest, ring buoy or buoyant cushion, of the type approved by the United States Coast Guard, in good and serviceable condition for each person on board.

The Coast Guard has reminded recreational boatmen that as of January 1 of this year, it will not accept lifesaving devices in which kapok or fibrous glass buoyant material has not been encased in sealed plastic bags. This action is the result of extensive tests made by the Coast Guard which have shown that kapok or fibrous glass lifesaving devices without the protection of plastic bags lose their buoyancy after several years and cannot be depended on in an emergency. The use of these unprotected lifesaving devices was extended from the original cut-off date of July 1, 1963, to January 1, 1965. This was intended to give

all interested parties ample opportunity to conform with the new requirement. Any life saving device under Coast Guard approval with specification number attached will meet this requirement. Boatmen should carefully check their life-saving equipment in addition to the regular chores of cleaning, painting and overhauling. Because buoyant cushions are used both as seats and lifesaving devices, they tend to wear out more rapidly than other equipment. Therefore, they should be inspected more frequently.

Registration and Identification

Motor boats or vessels powered by machinery of ten (10) horsepower or greater must be registered with the Kansas Forestry, Fish and Game Commission. No person shall operate or give permission for the operation of any such motorboat or vessel unless such vessel is numbered in accordance with the State Boating Act and such number certificate issued shall be carried on the vessel at all times when such vessel is in use.

The registration fee is \$5 for a three-year period. Since the anniversary date of the registration is used instead of a calendar year, be sure and check the expiration date of your present certificate.

The number assigned by the certificate shall be painted or secured to each side of the forward half of the vessel in such position as to provide clear legibility for identification. The numbers shall read from left to right and shall be in block characters of good proportion with the primary color not less than three inches in height. The numbers shall be of a color which will contrast with the color of the background and so maintained as to be clearly visible and legible.

Other information concerning the Kansas Boating Act is contained in the KANSAS SYNOPSIS OF BOAT AND WATER SAFETY LAWS distributed by the Kansas Forestry, Fish and Game Commission or marine dealers.

Safety provisions of the Kansas Boating Act will continue to be strictly enforced.



How to be unpopular in a hurry! These people were at anchor enjoying some leisurely refreshment when a boat traveling at high speed buzzed them. Poor etiquette surely. Just as poor common sense.

Three Rehabilitated State Lakes Opened to Fishing March 6, 1965

Three rehabilitated state lakes were reopened to fishing March 6, 1965 at 7:00 a. m. Neosho and Ottawa County State Lakes underwent fishery rehabilitation in the spring of 1962 and were restocked the following fall. Logan County State Lake was rehabilitated in September of 1963 and restocked in the spring of 1964 with intermediate sized channel catfish.

Ice, cold weather and high winds put the damper on fishing the opening day at the three lakes. Fishing success was very low with the fish per angler rate being somewhat below one fish to four anglers. According to the Fisheries Division of the Kansas Forestry, Fish and Game Commission, nearly all of the fish taken were channel catfish which averaged about one and one-half pounds each.

Special creel limits will be in effect on these three state lakes un-

til June 30, 1965. The special creel limits are as follows: the daily creel limit for largemouth black bass and channel catfish will be six bass or channel catfish, or not more than six fish in aggregate of both species.

Be Alert for Obstacles When Boating in Shallows

When boating on shallow and unfamiliar waterways, keep both eyes on the water dead ahead and one hand on the throttle. Be alert for underwater obstacles such as submerged logs, stumps and rocks.

If you see you are going to run onto something, cut back on the throttle until you have passed over the obstacle. Engineers caution that even though your outboard motor may be equipped with a slip clutch, damage to the propeller or even the motor itself can occur if it strikes a solid object.

Deer Hunting with Bow

(Continued from page 15)

buy your equipment. He can save you money and help you immensely in learning good shooting techniques.

Hunting Your Deer

Drab-colored or camouflage clothing helps the archer remain hidden from his game so he can get close enough to deliver a fatal arrow. Such clothing, however, is safely used only where the bow season is separate from the gun season for deer. To get close enough to deer to shoot successfully, you must be able to locate the deer before it sees you and then must draw and shoot without getting caught at it. This requires ability to remain unseen, and stealth that will come only from training and experience. In the case of gun hunting, distance helps the hunter escape detection. At closer bow and arrow shooting distances, however, this advantage is lost and the hunter must outsmart the deer (or find a "dumb" one). During the breeding season or rut, bucks often become bold or careless, thereby presenting the hunter with improved chances for shooting.

The average distance at which whitetails are taken in the Midwest is roughly 30 yards. Beginning archers, especially, will improve their chances if they wait and do not shoot until the deer is within 30 yards. It is better not to shoot at all than to shoot and miss or not hit a vital spot. Information from Michigan and Wisconsin indicates that crippling losses are no greater in bowhunting than they are in gun hunting for deer.

Most deer hit in the chest cavity will collapse and die before they have gone 200 yards from where hit. Diligent and earnest effort in tracking the animal to recover it is important. Most archers, however, wait about an hour before going after their animal. This is most important where escape cover is thick

(Concluded on next page)

Bonus Teal Season for Kansas Waterfowl Hunters

A bonus teal season for waterfowl hunters is planned for Kansas hunters early in September, according to the Kansas Forestry, Fish and Game Commission. All teal, blue-winged, green-winged and cinnamon teal, will be legal game. However, few green-winged or cinnamon teal will be in the state this early in the season and the hunters bag will include mostly blue-wings.

Records show blue-winged teal to be one of the most abundant ducks in North America with a breeding population averaging about four million birds in recent years. They have a high reproductive rate when conditions are favorable. Being our earliest migrating duck, they have escaped most of the hunting pressure in recent years due to the late hunting seasons. Present information indicates that blue-winged teal could withstand an early season, thus it is being offered this fall.

Plans specify a nine day season, probably one full week plus an extra weekend, with a bag and possession limit of eight teal. Shooting hours will be sunrise to sunset.

All hunters hunting teal will be required to have a current Kansas hunting license, a federal duck stamp if 16 years of age or older, and a "free" special teal season permit. The procedure for obtaining the "free" teal permits will be announced at a later date. It is anticipated that applications for these special permits will be available from the Pratt office of the commission by June 15.

John Gottschalk, Director of Interior's Bureau of Sport Fisheries and Wildlife said, "Since a relatively small portion of the blue-winged teal population is taken by hunters, the natural mortality of these birds is obviously quite high, judging from our annual counts. We hope to determine if a greater kill will take birds that would die

anyway, or whether it would add to the overall annual mortality rate and how much."

The "special" permit is the key to the success of the project. Duplicates will be sent to the Bureau of Sport Fisheries and Wildlife to provide a count of hunters who are interested in an early teal season. More important still, the permits will provide addresses from which will be selected hunters for a duck wing survey and a hunter questionnaire.

Wings collected by hunters and sent to the Bureau will be used to determine the age, sex, and species of ducks killed during the special seasons. The questionnaire will show such things as hunter interest, participation, and success. Approximately 800 teal permit holders in each participating State will receive packets of envelopes for the wing collection survey and about 1,000 others in each State will receive the hunter questionnaires.

Federal and cooperative banding of blue-winged teal will be stepped up during the summer to get more data on migration and natural mortality for these birds. Banding also can show the effect of hunting on the blue-wing population. This is done by comparing the number of bands returned by hunters with the total number of birds banded. It will also show how the hunter's take varies according to age and sex of the birds.

Basically, the regulations will permit each of the 24 states in the Mississippi and Central Flyways to select a nine-day season between September 1-30, 1965. The bag limit will be four birds per day and eight in possession. These limits can include blue-winged, green-winged and cinnamon teal, singly or in the aggregate. Shooting hours will be from sunrise to sunset.

The kill of green-winged and cinnamon teal is expected to be small

because green-wings are late migrants and cinnamon teal are uncommon in the Central and Mississippi Flyways.

Unless summer population surveys show a pronounced decline in bird numbers, the special teal season will be conducted for three years. Statistics collected for the three seasons will be used to decide whether an early teal season could become a regular part of the waterfowl management program.

Dear Hunting with Bow

(Continued from page 19)

and where the stricken animal may move on to elude the pursuing hunter, and then die where it will be more difficult to find.



Practice does make perfect, well almost, because buck fever may change everything.

For more detailed information on hunting techniques, equipment, how to shoot or teach shooting, etc., consult an up-to-date book on the subject. Even experienced bowmen would do well to refresh their memories on the techniques for successful bowhunting.

Now is the time to start getting ready to enjoy the 1965 Kansas bow and arrow deer hunting season. By getting your equipment now, you can practice all summer to improve your shooting accuracy and chances for success this fall.

When you go hunting next fall,

let your best sportsmanship be your shining example for other hunters to follow. After all, the fun is in the hunt. If it were otherwise, who would ever want to handicap himself with a bow when hunting for deer?

Modern Day Deer Season

(Continued from page 10)

operated in each of the management units to provide successful hunters with weight and other information about their deer, and to collect biological data pertinent to future management of Kansas' deer resource.



Issuance of Permits

All persons must apply for deer permits through the Forestry, Fish and Game Commission, and there are no exemptions due to age or property ownership.

Archery deer permits will be issued on a first-come, first-served basis. Firearms permits will be issued on a drawing basis in those Management Units where the number of applications exceeds the number of authorized permits. Whenever a drawing is necessary in a particular management unit, the services of Kansas State University's electronic computer will be utilized to provide equal opportunity for all applicants.

It is expected that permit application materials will be available about July 15, 1965. All applicants will submit the permit fee with their application. Unsuccessful applicants will receive a refund on the permit fee.

Safety Factors

The National Rifle Association (NRA) assembled and published statistics of all hunting accidents occurring in the United States and southern Canada during the 10-year period, 1951-1960. A general summary of these statistics as they apply to deer hunting only, follows:

The total number of firearms accidents involving deer hunters during this 10-year period was 2,642.

Rifle	2,003	75.8%
Shotgun	498	18.8%
Handgun	141	5.4%
	2,642	100.0%

The next logical question is "What proportion of hunters use each type of firearm?"

Rifle	92.5%
Shotgun	7.0%
Handgun	0.5%

(These figures are based on information obtained from various Fish and Game Departments.)

It is quite obvious that the proportion of accidents resulting from the improper use of these firearms is not in the same proportion as their use by hunters. Shotgun accidents occur about two and one-half times more often than their proportional use indicates they should. Handgun accidents occur almost 11 times more often than their normal use indicates. The rifle, on the other hand, has only about four-fifths as many accidents as the proportional use by hunters indicates it could have. According to these figures the rifle has the safest record of the three types of firearms in relation to their total use.

The circumstances which surround the majority of deer hunting accidents indicate that for all types of firearms used, it is primarily a case of hunter carelessness, and that the type of weapon used has little bearing on the accident.

Other Archery Regulations

Only one archery deer permit will be issued to each applicant.

Any person submitting more than one application for an archery deer permit shall be deemed ineligible to receive any archery deer permit during that year.

Any person unsuccessful in obtaining a firearms deer permit shall still be eligible to apply for an archery deer permit.

Each archery deer permittee will be supplied with a metal locking tag which the hunter must permanently affix to his deer upon being taken, to show legal possession.

An archery deer permittee must have in his possession a hunting license, a deer permit, and a deer tag whenever hunting deer under a valid archery permit.

A report card (provided by the commission) will be furnished each archery permittee to report hunting success within 10 days of the close of the archery season.

All hunting arrows shall be equipped with steel broadhead points.

Other Firearms Regulations

Legal rifles shall be restricted to those firing a bullet which is greater than 23/100 inches in diameter, and using a cartridge having an over-all length (case and bullet) greater than two inches (with the exception that the .44 Magnum would be a legal cartridge in a rifle or carbine.)

Only soft point, hollow point, or other expanding bullets may be used. All tracer, armor-piercing and full-jacketed bullets shall be illegal.

Fully automatic weapons shall be illegal.

Handguns shall be illegal for the taking of deer.

Miscellaneous Regulations

All prospective deer hunters must previously purchase a current year's hunting license. The serial number of said license will constitute a portion of the archery or firearms deer permit application, and must

be recorded to make the application complete.

A check, money order, or bank draft for the price of the deer permit must accompany the application in order to be considered for a permit.

The deadline for acceptance of resident firearms deer permits shall be August 15, 1965.

All nonresidents must apply directly to the Forestry, Fish and Game Commission for firearms-deer-permit application forms. Applications made by nonresidents on resident permit application forms will not be considered.

Nonresident firearms-deer-permit applications shall not be considered for a permit until after August 15. Nonresident firearms-deer-permit applications shall be considered only in management units where the number of permits exceeds the number of resident applications.

The drawing of names of applicants who are to receive deer permits shall be conducted through the use of an electronic computer, through the services of the Statistics Department, Kansas State University, Manhattan.

No permit, once issued, shall be transferable to another person.

It shall be illegal to use dogs for the purpose of pursuing, chasing, hunting or taking of deer.

No person under 16 years of age shall be eligible for a firearms deer permit.

Firearms Deer Management Units

High Plains Deer Management Unit—3,577 square miles; 400 permits; only antlered bucks legal. Cheyenne and Rawlins counties, and those parts of Decatur, Sheridan, Sherman and Thomas counties bounded by a line from the Nebraska-Kansas boundary south along Federal Highway US-83 to its junction with State Highway K-23, thence east and south along State Highway K-23 to its junction with Federal Highway US-24, thence west along Federal Highway US-24 to its junction with the Colorado-Kansas boundary, *except* Federal

and State sanctuaries or refuges.

Smoky Hill Deer Management Unit—6,048 square miles; 150 permits; only antlered bucks legal. Logan and Wallace counties, and those parts of Gove, Greeley, Scott, Sheridan, Sherman, Thomas, Trego and Wichita counties bounded by a line from the Colorado-Kansas boundary east along Federal Highway US-24 to its junction with State Highway K-23, thence south along State Highway K-23 to its junction with Interstate Highway I-70, thence southeasterly along Interstate Highway I-70 to its junction with State Highway K-147, thence south along State Highway K-147 to its junction with State Highway K-4, thence west along State Highway K-4 to its junction with Federal Highway US-83, thence south along Federal Highway US-83 to its junction with State Highway K-96, thence west along State Highway K-96 to its junction with the Colorado-Kansas boundary, *except* Federal and State sanctuaries and refuges.

Kirwin-Webster Deer Management Unit—6,523 square miles; 600 permits; only antlered bucks legal except on the last day when deer of either sex are legal game. Graham, Norton, Phillips and Rooks counties, and those parts of Decatur, Ellis, Gove, Osborne, Russell, Sheridan, Smith and Trego counties bounded by a line from the Nebraska-Kansas boundary south along State Highway K-8 to its junction with Federal Highway US-36, thence east along Federal Highway US-36 to its junction with Federal Highway US-281, thence south along Federal Highway US-281 to its junction with Federal Highway US-40, thence west along Federal Highway US-40 to its junction with Interstate Highway I-70, thence continuing west along Interstate Highway I-70 to its junction with State Highway K-23, thence north and west along State Highway K-32 to its junction with Federal Highway US-83, thence north along Federal Highway US-83 to its junction with the Nebraska-Kan-

sas boundary, *except* Federal and State sanctuaries and refuges.

Solomon Deer Management Unit—4,743 square miles; 400 permits; only antlered bucks legal. Jewell, Lincoln and Mitchell counties, and those parts of Cloud, Ellsworth, Osborne, Ottawa, Republic, Russell, Saline and Smith counties bounded by a line from the Nebraska-Kansas boundary south along Federal Highway US-81 to its junction with Interstate Highway I-70, thence west along Interstate Highway I-70 to its junction with Federal Highway US-40 (near Dorrance), thence continuing west along Federal Highway US-40 to its junction with Federal Highway 281, thence north along Federal Highway 281 to its junction with Federal Highway US-63, thence west along Federal Highway US-36 to its junction with State Highway K-8, thence north along State Highway K-8 to its junction with the Nebraska-Kansas boundary, *except* Federal and State sanctuaries or refuges.

Republican Deer Management Unit—4,026 square miles; 500 permits; only antlered bucks legal except on last day when deer of either sex are legal game. Clay and Washington counties, and those parts of Cloud, Dickinson, Geary, Marshall, Morris, Ottawa, Republic, Riley and Saline counties bounded by a line from the Nebraska-Kansas boundary south along Federal Highway US-77 to its junction with State Highway K-4, thence west along State Highway K-4 to its junction with Federal Highway US-81, thence north along Federal Highway US-81 to its junction with the Nebraska-Kansas boundary, *except* Federal and State sanctuaries or refuges.

Tuttle Creek Deer Management Unit—4,076 square miles; 600 permits; only antlered bucks legal except on last day when deer of either sex are legal game. Pottawatomie county, and those parts of Brown, Geary, Jackson, Marshall, Morris, Nemaha, Riley, Shawnee and Wabunsee counties bounded by a line from the Nebraska-Kansas bound-

ary south along Federal Highway US-75 to its junction with State Highway K-4, thence west and southwest along State Highway K-4 to its junction with Federal Highway US-77, thence north along Federal Highway US-77 to its junction with the Nebraska-Kansas boundary, *except* Federal and State sanctuaries or refuges.

Missouri River Deer Management Unit—1,327 square miles; 500 permits; deer of either sex are legal game. Doniphan County, and those parts of Atchison, Brown and Jackson counties bounded by a line from the Nebraska-Kansas boundary south along Federal Highway US-75 to its junction with State Highway K-116, thence east along State Highway K-116 to its junction with Federal Highway US-59, thence northeast along Federal Highway US-59 to its junction with the Missouri-Kansas boundary (Missouri River), *except* Federal and State sanctuaries or refuges.

Kaw Deer Management Unit—2,082 square miles; 600 permits; deer of either sex are legal game. Jefferson County, and those parts of Atchison, Douglas, Jackson, Johnson, Leavenworth, Osage, Shawnee and Wyandotte counties bounded by a line from the Missouri-Kansas boundary southwest along Federal Highway US-59 to its junction with State Highway K-116, thence west along State Highway K-116 to its junction with Federal Highway US-75, thence south along Federal Highway US-75 to its junction with Federal Highway US-56, thence east along Federal Highway US-56 to its junction with State Highway K-7, thence north along State Highway K-7 to its junction with State Highway K-92, thence east along State Highway K-92 to its junction with the Missouri-Kansas boundary, *except* Federal and State sanctuaries or refuges.

Marais Des Cygnes Deer Management Unit—269 square miles; 50 permits; deer of either sex are legal game. Those parts of Bourbon and Linn counties bounded by a line from the Missouri-Kansas

boundary west along State Highway K-52 to its junction with Federal Highway US-69, thence north along Federal Highway US-69 to its junction with State Highway K-135, thence west along State Highway K-135 to its junction with State Highway K-7, thence south along State Highway K-7 to its junction with State Highway K-31, thence east along State Highway K-31 to its junction with Federal Highway US-69, thence north along Federal Highway US-69 to its junction with the Little Osage River, thence east along the course of the Little Osage River to its junction with the Missouri-Kansas boundary *except* Federal and State sanctuaries or refuges.

Neosho Deer Management Unit—991 square miles; 75 permits; deer of either sex are legal game. Cherokee County, and those parts of Crawford, Labette and Neosho counties bounded by a line from the Missouri-Kansas boundary west and north along State Highway K-57 to its junction with Federal Highway US-59, thence south along Federal Highway US-59 to its junction with the Oklahoma-Kansas boundary, *except* Federal and State sanctuaries or refuges.

Chautauqua Hills Deer Management Unit—2,216 square miles; 600 permits; deer of either sex are legal game. Chautauqua County, and those parts of Cowley, Elk, Greenwood, Montgomery, Wilson and Woodson counties bounded by a line from the Oklahoma-Kansas boundary north along Federal Highway US-75 to its junction with Federal Highway US-54, thence west along Federal Highway US-54 to its junction with State Highway K-99, thence south along State Highway K-99 to its junction with Federal Highway US-160, thence west along Federal Highway US-160 to its junction with State Highway K-15, thence east and south along State Highway K-15 to its junction with the Oklahoma-Kansas boundary, *except* Federal and State sanctuaries or refuges.

Lower Arkansas Deer Manage-

ment Unit—823 square miles; 100 permits; deer of either sex are legal game. Those parts of Cowley and Sumner counties bounded by a line from the Oklahoma-Kansas boundary north along Federal Highway US-81 to its junction with State Highway K-55, thence east along State Highway K-55 to its junction with State Highway K-15, thence continuing east and south along State Highway K-15 to its junction with the Oklahoma-Kansas boundary, *except* Federal and State sanctuaries or refuges.

TRIANGULATION

One of the best exercises to assure the novice rifle shooter's development of proper sight picture is called *Triangulation*. Though the exercise requires the assistance of another person, it is simple. The only equipment needed, besides an unloaded rifle, is a sandbag, or other steady rest and a three-inch disc of metal or cardboard. Punch a hole in the center of the disc and attach a short strip of wood for a handle. Tack a sheet of paper to any flat surface on a level with the unloaded rifle's muzzle. Now, the assistant, armed with disc and pencil stands by the target while the shooter assumes his position behind the rifle. Sighting on the center of the paper, the shooter directs the assistant to move the disc right, left, up or down, until it appears properly aligned as a bull's eye in his stationary sights. Through the hole in the disc, the assistant makes a mark on the paper with his pencil, then shifts the disc to another position. The process is repeated twice more. Straight lines are drawn between each pencil mark to form a triangle. If the triangle cannot be covered by a 25-cent-piece, the shooter has not developed a proper sight picture and needs more practice.

**GET PERMISSION
BEFORE YOU ENTER**



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