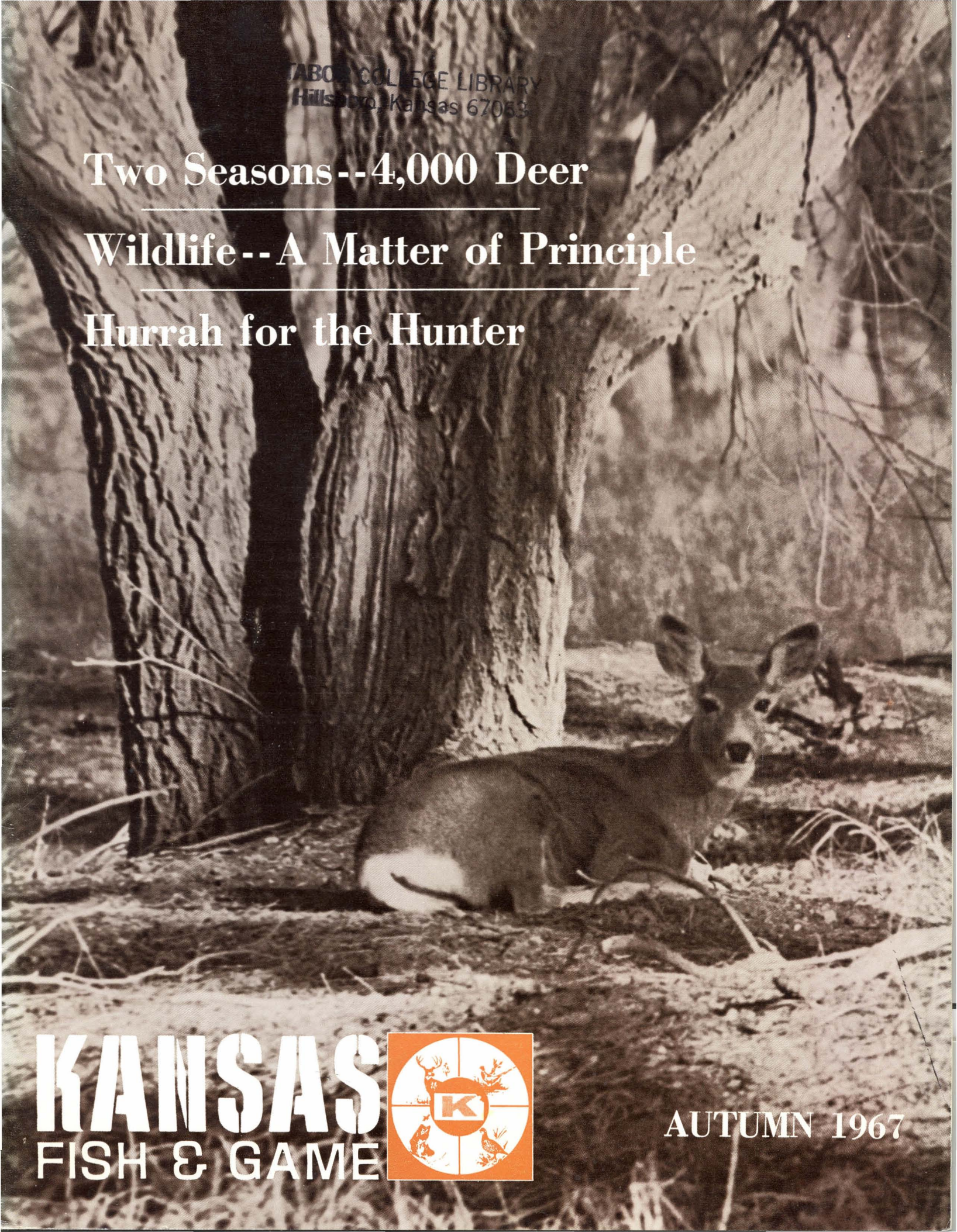
Two Seasons--4,000 Deer

Wildlife--A Matter of Principle

Hurrah for the Hunter



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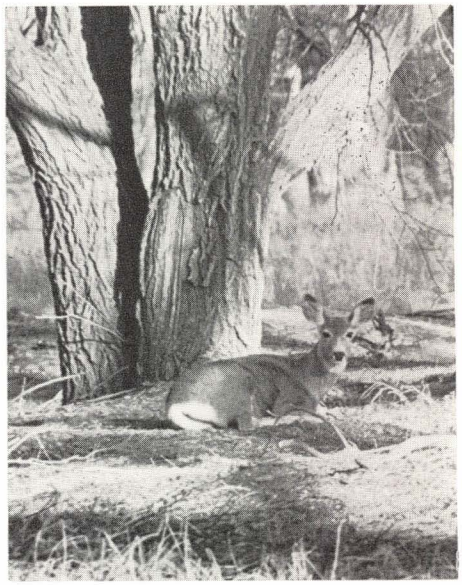

This Fall and Winter, more than 200,000 hunters—with 15,000 of them out-of-state visitors—will trek to the fields, woods and waterways of Kansas.

Small animals and upland game will be foremost in the minds of the nimrods, but not to be overlooked is the state's third annual deer season.

This year, 6450 firearms deer permits were offered to Kansas hunters, along with an unlimited number of archery permits, and all indications point to excellent prospects.

As you'll note in Bill Peabody's article on Kansas deer in this issue, the state now has more than 50,000 of these swift, colorful animals, and the number is growing rapidly each year.

Even with large numbers on hand, deer are not always easy to find, however.

Leroy Lyon, a member of the Information-Education staff of the Fish and Game Commission, had been "hunting" for one or more for several months, when he came across the scene on this month's cover in a wooded area near Meade State Park, south of Meade.

Luckily, he had his camera in hand, and his shooting eye proved perfect.

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Two Seasons—4,000 Deer

By BILL PEABODY
Big Game Project Leader

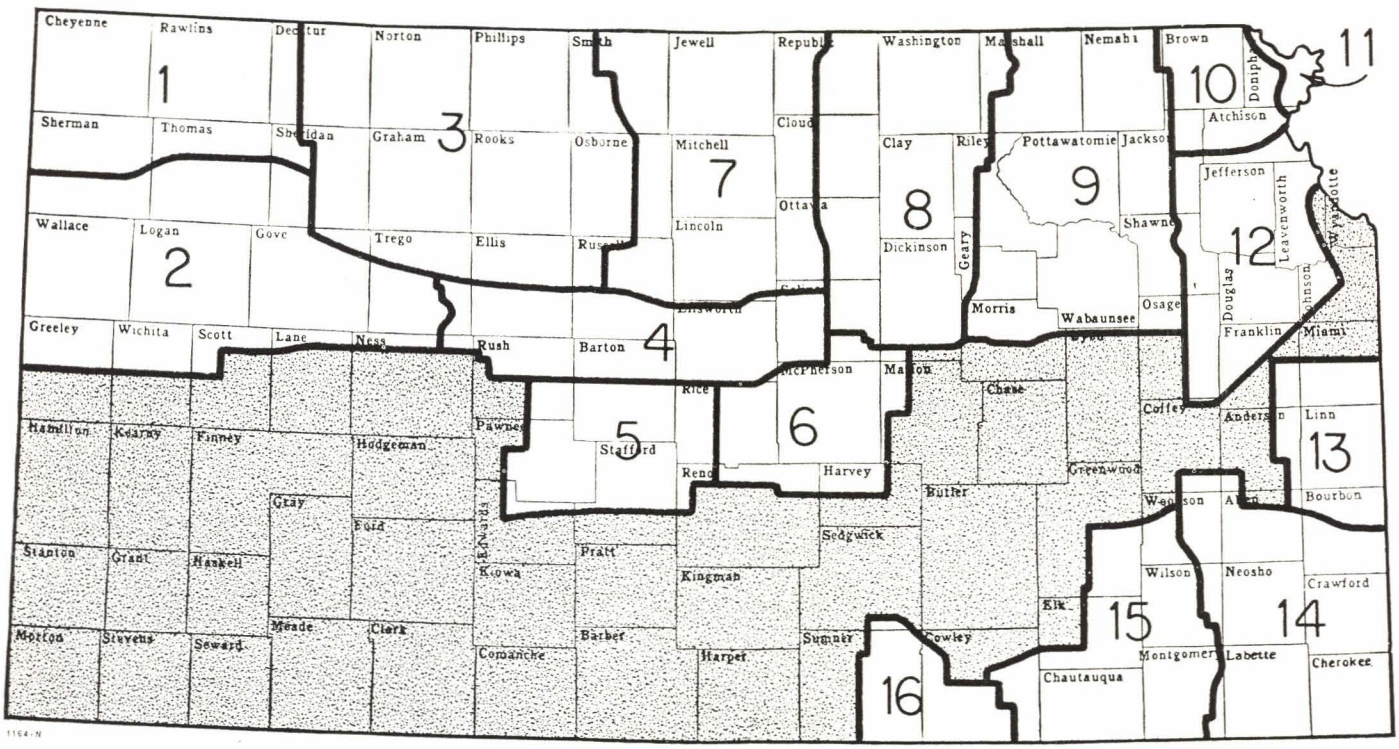
With the advent of Kansas' third firearms deer season upon us, let's look back and reflect briefly on the past and also, gaze into the proverbial crystal ball to see where deer herd management "Midway U. S. A." is headed. In the last decade the Kansas deer herd has come into its own, exhibiting a remarkable growth rate similar to that which produced "deer population explosions" in many midwestern states years earlier.

Deer were considered extinct in Kansas from about 1904 to 1933. In the years that followed, limited introductions were made by private individuals and the Fish and Game Commission. Trapping and transplanting programs in adjacent states contributed to these initial population "nuclei". Small herds began to be seen on the major drainages. As the number of deer increased, movement away from streams populated the smaller tributaries and available upland habitat. By 1956 the Commission estimated that there were 3,000 deer in the state. Nine years and 35,000 deer later, Kansas sportsmen were again hunting these animals.

Almost daily we hear about the human "population explosion". Administrators and economists are aware of the fact that as more people are produced they must be fed and provided with a "secure" place to live. These days, the meaning of "secure" appears to be lost in the din of "demonstrations, riots, and bombs". However, steps are being taken to control the number of new individuals that are being born. The "pill", other contraceptive devices and family planning are all gaining world-wide impetus. Does it not make sense that deer, like livestock and people, must have enough to eat and a secure place to live? Who is going to tell Mr. and Mrs. Deer how many fawns to have or not to have? What kind of a "pill" are they going to take?

The rapid build-up of Kansas' deer herds is evidence that they enjoy a high level of nutrition. They appear to be relatively secure in their woodland-prairie home, but the warning signs are out. Some of our deer range is fast approaching, if not al-

FIREARMS DEER MANAGEMENT UNITS, 1967



OPEN CLOSED

1. High Plains.
2. Smoky Hill.
3. Kirwin-Webster
4. Kanopolis.
5. Pawnee.
6. Middle Arkansas.
7. Solomon.
8. Republican.
9. Tuttle Creek.
10. Delaware.
11. Missouri River.
12. Kaw.
13. Marais des Cygnes.
14. Neosho.
15. Chautauqua Hills.
16. Lower Arkansas.

ready surpassing, carrying capacity. If not biological, then economic. In a recent study of deer food habits conducted with stomach samples obtained from road-killed deer in northeastern Kansas, researchers Dr. Robert Robel and students Phillip Watt and Gerald Miller from Kansas State University, found that 49 percent of the year-around diet of deer in that area consisted of agricultural crops with corn, sorghum, winter wheat, alfalfa, soybeans and apples of major importance. A similar study in Missouri revealed that the utilization of approximately 50 percent agricultural crops in the deer diet was the breaking point between crop depredation complaints or the lack of them.

The number of highway deer mortalities have continued to increase each year since records were maintained with 300 deer ending up on bumpers, fenders and windshields during the first six months of this year compared to 259 for the same period in 1966. A total of 569 deer were killed by motorists last year costing an average of $200 per collision.

When range becomes over-stocked with livestock and deer, both the animals and the range suffer. The farmer or rancher can sell or move some of his stock to new pasture if it is available—what happens to the deer? They will continue to increase with reduced productivity. Inferior physical specimens will result, and as the herd increases they will eat, and eat, and eat. Just what and how much they eat is fast becoming a matter of concern for farmers and ranchers raising crops in prime deer range. What will happen when the aesthetics of seeing deer no longer balance the concern caused by loss of crops and dollar values?

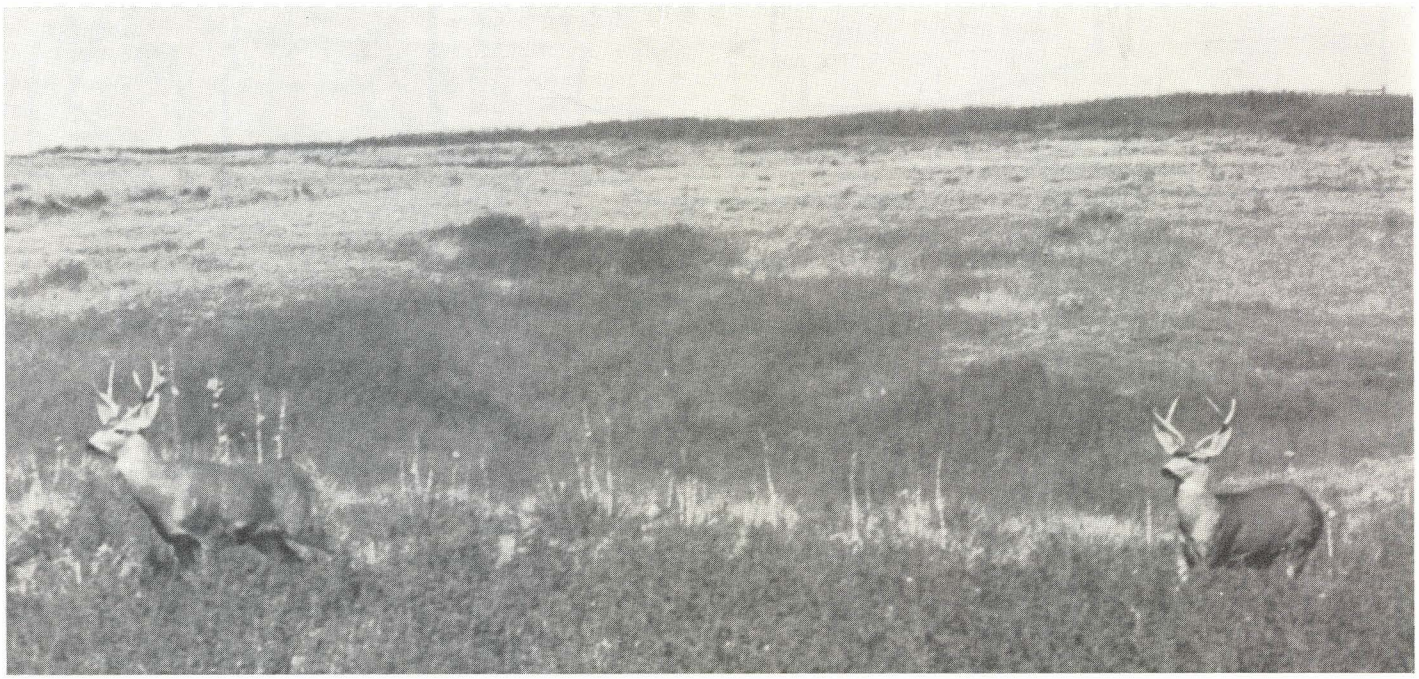
The only logical way to reduce the deer population to "levels" that are compatible with agricultural, biological and other human interests is through hunting seasons. Both antlered and antlerless deer must be harvested. This is the only "pill" that deer populations understand.

ARCHERY seasons can provide hunters with many hours of recreation with little drain on the deer resource. In two years of bow hunting the record speaks for itself. In 1965 with a 46-day season, 1,151 archers killed 164 deer. In the process they "logged" 7.4 days afield per man. That same year, 563 deer were killed by motorists on Kansas highways.

A record 1966 harvest of 376 deer is proof positive that Kansas archers have developed a keen interest in the sport. It is even more amazing when considering hunting conditions that prevailed throughout much of the state last fall. In general, it was dry and the woods were very "noisy," making it difficult to stalk deer and almost impossible to trail a wounded animal. "Any deer" were legal targets for bow and arrow hunters.

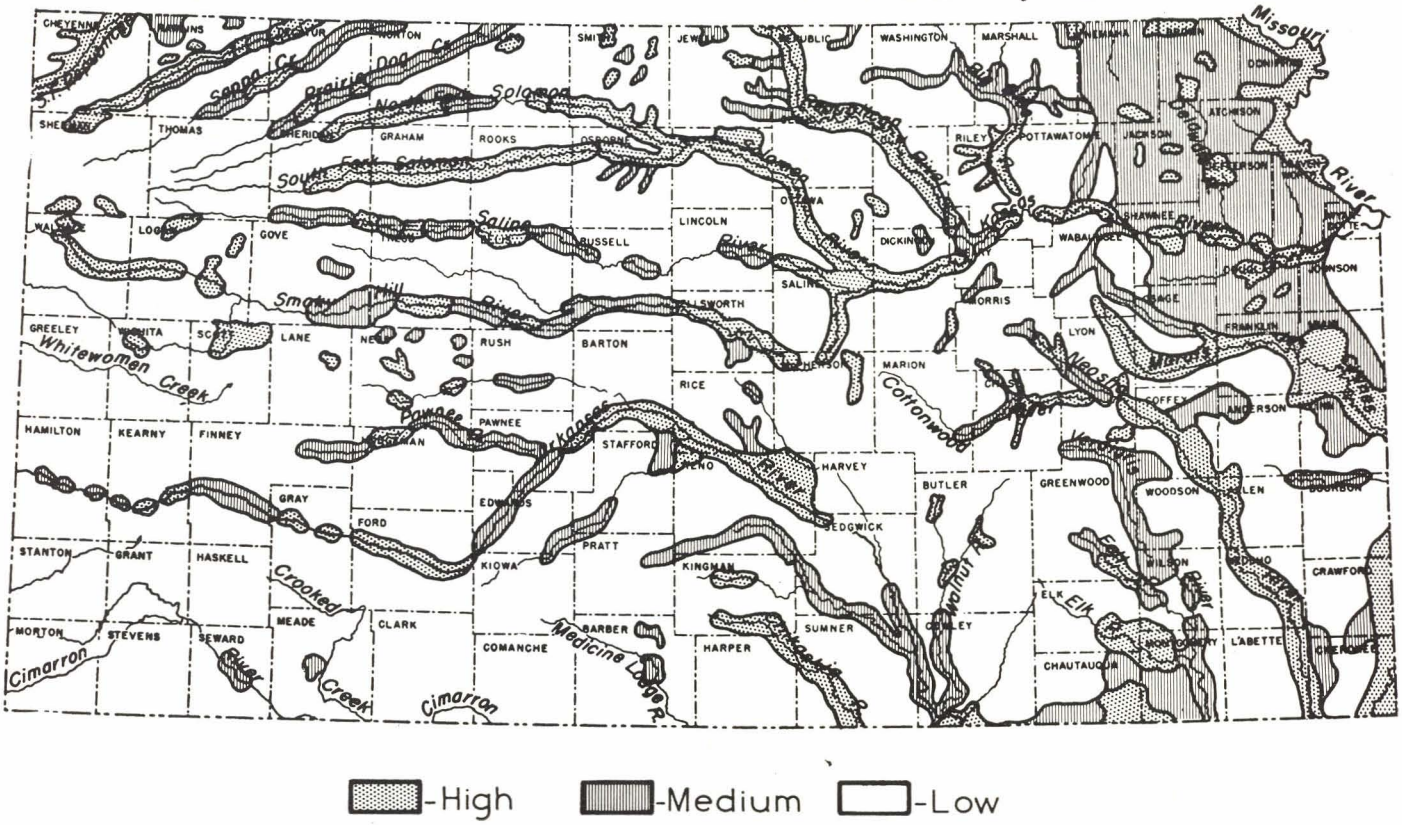
FIREARMS deer hunting in the Sunflower State comprises three basic types of regulations: (1) The harvest of antlered deer only, (2) the harvest of antlered deer, except on the last day of the season a previously unsuccessful hunter may take "any deer," and (3) the harvest of "any deer" throughout the season. By controlling the number of permits that are authorized and the type of season by deer management unit, the desired number of deer can be effectively harvested.

The deer-management-unit concept currently utilizing a system of limited permits based on a knowledge of the deer population and local conditions within each unit, appears best suited for Kansas. Generally, management units comprise one or more major drainages and/or ecological areas such as the "Chautauqua Hills" and the "Missouri River Bluffs." Within



A pair of fine buck mule deer, their antlers shining in an early-morning sun, race across a draw in a Northwest Kansas pasture. They'll be targets for Kansas hunters in the state's third firearms deer season, December 8-12.

DISTRIBUTION and DENSITY of DEER, 1967



-High -Medium -Low

each unit, regulations can be enacted to "fit the needs" of that area. Where the deer population can be allowed to increase unchecked, and in portions of predominantly mule deer range, "bucks only" restrictions will be authorized initially. However, consistently "good" harvests can be maintained by killing a number of antlerless deer each year. In management units where it is desirable to limit the yearly increase and/or "stimulate" production," antlerless deer will be legal targets on one or more days of the season. Still, there will be other areas where, because of difficult hunting conditions or where it is necessary to stabilize the population by actually harvesting the annual increment, antlerless deer will be legal game throughout the hunting season.

In two years of firearms hunting rifles were used by approximately 96 percent of the permittees with the remaining 4 percent using shotguns. There were no known hunting accidents in 1965 or 1966 attributed to deer hunters. Approximately 87 percent of all deer killed were taken within 200 yards of the hunter. At those ranges a deer hunter should know his target and be relatively certain that the bullet will strike where aimed.

Simple arithmetic will tell even the inexperienced hunter that under the existing regulations, number of permits authorized and legal kill, we are not taking as many deer as could be harvested. In most management units we are allowing the deer population to increase and extend their range. Actually, 8,000 to 10,000 deer could have been removed from the herd in 1966 without adversely affecting the hunting prospects for 1967. However, it would have required the efforts of at least three times as many permittees as were in the field last winter and excessive hunting pressure would have resulted in certain localities.

Hunter success in 1966 was 37 percent with 5,806 permittees harvesting 2,139 deer. Whitetails comprised 75 percent of the kill with 1,608 carcasses ending up in the freezer. A total of 531 mule deer was harvested as compared to 514 in 1965.

Kansas deer are healthy. This has been shown by the impressive weights of adult bucks, a relatively "high" rate of productivity, and by the fact that three diseases common to domestic livestock leptospirosis, brucellosis and anaplasmosis—were found in only 1 percent of 1,243 deer tested by the Diagnostic Laboratory, Kansas State University.

Our deer herds are becoming more widespread as shown by the deer distribution map. Two years of hunting have made deer more secretive and has influenced movement to new range previously unoccupied. The 1965 and 1966 deer kill distribution is closely correlated with the "high," "medium" and "low" density areas indicated on the map.

With a growing deer population, Kansans can look forward to an annual deer season when a portion or all of the yearly increase can be harvested. Continued liberalization of the regulations will be needed to keep deer populations below the problem level. With proper herd management, we can look forward to many a good fall hunt and an ample supply of venison for the table.

Wildlife—A Matter of Principle

By BOB WOOD, *Game Biologist*

Since Man first began to realize he would have to adequately manage his wildlife endowment to insure his sons and his son's sons they would enjoy wildlife in its natural environment, he has strived to learn more about the lives of animals and how to conserve their numbers.

To implement sound game management in Kansas, the Fish and Game Commission has been charged with the responsibility of properly administering the State's game resources. Our game management programs have followed a well known path in history—a path of trial, error, learn, correct, retrial and success.

A general picture of the game management principles which are guidelines by which we work might be of interest.

Kansas game management has run the gamut of all time-worn efforts to increase game populations. Heavy hunting restrictions, predator control, refuges and stocking have all been tried to one degree or another.

For the first thirty to forty years of this century, conservationists believed the best way to have more game was to prevent or restrict the take by man. Hunters were restricted more than fishermen because of the nature of the resource.

Game birds and animals are readily observed and quickly draw attention from the general public. Animals do not have the reproductive capabilities of fish, therefore, concern for their well-being is more evident. During those early years, Kansans were saddled with many laws that actually discouraged outdoor sports, especially hunting.

This is not to say regulations are unnecessary. Seasons and bag limits are required to protect game from exploitation and to give everyone an equal opportunity to harvest a share. Closed seasons are also important to protect a game population that is reestablishing itself. For instance, Kansas' deer herds were once nearly gone. Due to protection from hunting and improved habitat conditions, herds grew and we are again enjoying an annual deer season. We have great hopes that wild turkeys will follow the same path.

The point is, although game harvest must be regulated, early-day small game hunting seasons were much too restrictive. For example, quail seasons near the turn of the century were held only every other year. In 1925, seasons were held annually, but amounted to only 11 days in November. This November quail season remained unchanged for 20 years, regardless of fluctuations in the number of birds.

Another innovation was spawned in 1945, a staggered-day season. Quails hunters could be in the field only on Tuesdays, Thursdays, weekends and holidays. Surprisingly, there is still considerable support for staggered-day hunting, although such a season serves no practical management purpose, is discriminatory, and creates a law enforcement problem.

All early-day seasons were effective in restricting harvest, but they had little effect on game populations. Nearly all of Kansas' important small game species had similar assortments of hunting regulations at one time or another. Fortunately, knowledge was continually being gathered and soon proved that our resident small game can withstand liberal hunting seasons. With annual death rates of 50 to 80 percent of the population, varying with species, it became clear that more of these animals were being lost to natural causes than were taken by hunters. In fact, studies on areas where hunting was controlled or completely forbidden revealed that high death rates of small game did not vary with changes in hunting pressure.

Each year, animals produce more young than can be supported by the available food and cover. If you will, *a surplus of game!* This surplus is

Excellent habitat for quail, pheasant and other wildlife are plantings of multiflora rose, which is used extensively by the Fish and Game Commission in game management units located throughout the state.

harvestable. It followed that if the surplus 80 percent were dying with or without hunting, hunters could be permitted to harvest more of that 80 per cent. In other words, *hunting take could be substituted for some of the natural losses!*

Hunting activity on study areas also revealed there need be no worry that liberal hunting seasons would cause an over-harvest. The "Law of Diminishing Returns" comes into play long before an over-harvest occurs. As game becomes harder to find, the less effort man is willing to put into finding it! This law is well illustrated each pheasant season. Opening weekend finds a rush of hunters beating every bush in western Kansas. Any available birds are easy to find and flush. By Sunday afternoon, birds are getting wary and hard to find. The second weekend of hunting, only about a third as many hunters are in the field trying to corner even spookier birds. Naturally, success is poor! By the third weekend of the season, hardly any pheasant hunters can be found. The surviving pheasants are, for all practical purposes, secure from hunters until the next year's opening weekend.

Hunting pressure on all game follows a similar trend, holding up a little longer on some species, dropping off more rapidly on others. Even though today's hunting seasons are liberal, compared to those of the '40's and '50's, game harvest will remain at a safe level. Facts learned by studying results of early-day hunting regulations now let us set annual seasons based on game supply rather than emotion.

Since it was evident hunting seasons were having little effect on game numbers, another cause for game shortages had to be found. Enter the predator! Predator control in Kansas took form as bounties, crow-roost bombing, cat trapping, shooting "chicken" hawks and sundry other activities.

With exception of bounties on coyotes, all of our predator control programs have now ceased. Knowledge can again take credit. Predator control by bounties was found to be a lazy man's game management. Predator populations produce annual surpluses, too. Bounty hunters merely skim available surpluses, having little effect on predator populations and resulting in no increases in game populations. Logic tells us bounty hunters would be foolish to drastically reduce predator numbers as they would be cutting their sustained income.

A good day is evident for hunters Lynn Burris, Jr., of Topeka (left), and Paul States, Toronto. They bagged their limit of ringneck pheasants on Fish and Game Commission public hunting land at Cedar Bluff Reservoir, near Ellis.

Predators were also found to be opportunists, feeding on animals that are most abundant and most easily caught. As such, they are a key factor in preventing over-populations of rodents and other small pests. The cottontail is the only small game animal in Kansas that is an important source of food for predators.

Because of knowledge gained about predator-prey relationships, nearly all hawks and owls are now protected by law. Although it has been proven beyond all doubt that bounties will not control anything, public pressure keeps them on the books for coyotes. In recent years, however, coyote hunting has become more of a sporting activity than a predator control program. Perhaps someday, coyote bounties will be dropped as the waste of public moneys they are.

Game refuges have also been tried as a cure for Kansas' game shortages. A program was devised where cooperating landowners signed agreements with the Fish and Game Department to prohibit all hunting on their land for a period of five years. The idea was, to cause such an increase in game on the refuge that surrounding nonrefuge lands would continually be stocked.

Again, results proved that for resident small game, refuges do little more than prevent hunting. Game increases resulting from mere exclusion of hunting were nonexistent. The cooperative-refuge program was dropped when it failed to work.

While game managers found that a refuge would not mean more quail and pheasants, they did learn resting sanctuaries were important to migratory waterfiowl management. By giving ducks and geese a little protection, they tend to remain in the vicinity of the sanctuary longer, giving hunters more opportunity to hunt them on surrounding lands. The sanctuary-

public hunting area complex is the basic plan of all of the state's waterfowl management areas. Without it, the birds would soon be "burned off" the marshes by constant hunting.

About the same time restrictive hunting regulations were in effect, another seeming "cure all" for game shortages was introduced—artificial propagation and stocking. It seemed only reasonable. To have more birds, simply "raise a bunch" and turn them loose. Over the years, there has been much controversy about benefits of stocking. The controversy will undoubtedly continue, but let's face facts!

So far, there has been only one success story from stocking in Kansas —the ring-necked pheasant! The ringneck was introduced from Asia into *suitable new habitat* that offered him *no competition* for living space. The result was a well-established population of birds that now supports an annual hunting season.

Attempts at stocking other exotic game birds like chukar and Hungarian partridges failed because there is no suitable habitat for them in Kansas. Supplemental stocking of native birds wastes time and money since established wild populations are more than adequate to fill existing habitat.

As we discussed various attempts that have been made to increase game, you will note most were neither complete failures, nor complete successes. In each case, something limited the effect of the effort. What could it have been? Only one answer comes to the front—habitat! Living conditions on the land were controlling game abundance. Two of the most significant limiting factors controlling game populations are poor habitat and inter-specific tolerance.

We found that with a short hunting season and low bag limit, or even with no season at all, quail numbers did not increase. The birds' environment had room for only so many individuals and no more. We discovered that on the average, 70 to 80 percent of the quail die each year. Why? Because available habitat can carry only 20 to 30 percent of the birds through the most critical period of the year—usually winter. Even with today's liberal hunting seasons, we harvest 30 percent or less of the fall quail population. Since hunting merely replaces natural mortality, in most years, another 40 to 50 per cent will die from natural causes. The 20 to 30 percent that survives each year can be termed the land's "carrying capacity."

Predators are able to kill a significant number of animals in a given area because prey is abundant or has nowhere to escape. As a rule, game species are too wary for many to be taken by predators. But, lack of escape cover makes game animals more available to predators, resulting in higher losses. Thus, the land's carrying capacity for game is lowered because of poor habitat, not an abundance of predators.

Farmers who signed up their land as a game refuge found little if any more game after five years of no hunting than they did prior to the refuge period. Mother Nature was able to overstock their land with game every year, but without improving existing habitat—increasing carrying capacity—the refuge supported the same amount of game as before. Since a quail can use a patch of ungrazed timber or a shrubby fencerow to escape a hunter just as easily as he uses it to escape a hawk, it was the amount of good cover on the refuge that limited the number of quail, not hunting pressure.

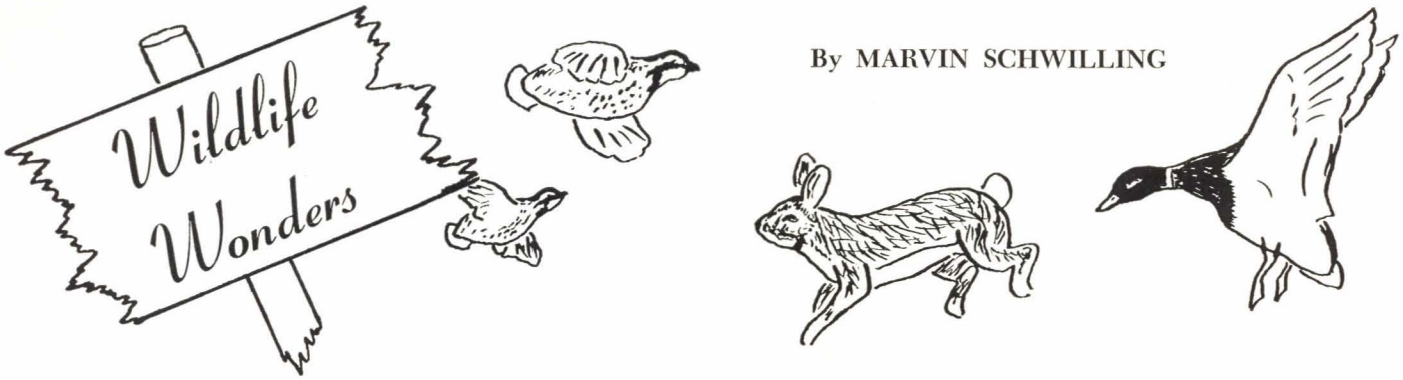
At first glance, it would appear we could have a covey of quail under every plum thicket by continually improving quail habitat. But, there is more to this phenomenon of "carrying capacity" than how many seeds are produced for food or square feet of ground is occupied by vegetative cover. Studies on refuges revealed a limiting effect of inter-specific tolerance. All animals are territorial, even humans. We all like to stake our claim on a piece of property and call it our own. The big difference between human and wild-animal territorialism is that humans are willing to reduce the boundaries of their territories, or create new territories, to tolerate a higher population. Witness apartment house complexes, where each man's territory may be nothing more than one or two rooms. Wild animals cannot follow man's example. They have a limit to how much they will be crowded and they are unable to create new territories.

During breeding seasons, males of most game species will establish well defined and well defended territories. Individuals of the same species will fight for their respective territories, sometimes to the death. Due to this lack of tolerance, a 40-acre field will support only so many quail or pheasants or meadowlarks, even if the entire 40 acres is prime quail, pheasant or meadowlark habitat. As wildlife populations grow, extra individuals are pushed into less and less desirable habitat. We already know poor habitat will result in higher mortality.

Eventually, annual production in these marginal habitats will be less than annual mortality, causing a drop in the overall population because of the inability of the habitat to support the high population. If a natural catastrophe like drouth, occurs at a time of high game numbers, habitat is reduced and a sharp decline in game will be evident. The pheasant decline in 1963, from 1962's high, was caused by severe drouth that reduced nesting cover and increased summer chick mortality.

Today's game abundance or lack of abundance is keyed to current environmental conditions. By undertaking a program of habitat evaluation, protection, improvement and management, any wildlife population can be increased. Even in the city! By putting up a bird house, wren habitat is improved by increasing available nesting space. A series of brush piles and a strip of unmowed grass on a farm does the same thing for cottontails and quail.

It is only through realization of the principle that, in order to have a larger number of any wildlife species, that species must have more of its everyday life requirements. Nature cannot tolerate a vacuum. As habitat is improved to support more animals, the existing population of animals will expand to fill the new habitat. By managing the improved habitat, higher wildlife populations can be maintained for the benefit and pleasure of Mankind.



By MARVIN SCHWILLING

No one need be told it's Fall. All that's required is to look out-of-doors. Autumn foliage is not short of beautiful.

A trip to eastern Kansas—particularly east-central Kansas—is most rewarding in early October. It's a good time to catch this "Ozark" portion of Kansas at its color peak. Golden-leafed sugar maples dominate the colors on hills, blending into nine species or more of red-leafed oaks on lower and bottomland. This, along with yellow-leafed elms, golden-leafed cottonwoods, red-leafed sumac, mixed colors of the pecan, hickories, sycamores and many other trees and shrubs.

Many people credit early frost for this array of color, but the processes involved are far from being that simple.

Yellow, gold and orange pigments are present all summer in the leaves, but are covered by the chlorophyll green color that is dominant during the growing season. As the weather cools these plants cease to manufacture chlorophyll, the green fades and other colors are revealed. Brown and bronze are products of oxidation during death and decomposition of the leaf. However, some colors are actually produced only in the Fall. These are the pinks, reds and purples, produced most abundantly by alternating cool nights and sunny days.

Our own state tree, the majestic Cottonwood, does not bloom attractively in the spring but is garbed in golden splendor in the Fall.

Changing color is only one of the obvious trademarks of Fall. Birdlife that was scarce and quiet during late summer heat is again abundant and restless.

Have you ever stopped to notice how the changing seasons also seem to affect human activity? It seems that people living in Kansas are spurred to activity because of the changing seasons—they must get the house painted before the frigid cold prevents them from doing so. The family car must be winterized. The corn must be planted before a definite date lest it freeze before maturing. Could it be that the lazy, slow life of our neighbors in the southern states is because they have no deadline laid down by the seasons?

In early October, each day seems to bring larger numbers and new kinds of ducks to our favorite marsh to swell the ever-growing populations. I have not yet seen or heard migrating geese, but we can expect them any time. I seem to have lost some of the enthusiasm of searching for different species that I had at the beginning of the Fall movements.

I began my daily early morning tour of the marsh watching for the first migrant blue-winged teal the first day of August. The first group showed up on August 5th. They were a welcome sight playfully twisting and swooping in perfect unison as they flew low over the marsh. These first migrants as always were adult males. It's common practice for the drake to desert the hen once she begins incubation, and collect in groups on moulting areas. Here they moult and regrow new flight feathers earlier than the hens and their young. Thus the adult males group together and migrate ahead of the females and young. This is a migration pattern followed by several other species of ducks.

In late October, it's squirrel hunting with a .22 for me. Seems I always begin the hunt determined to take only good head shots but sometimes resort to longer shots if the bag is low. I drove by the house after work, picked up my rifle and a box of shells and headed for the timbered ravine just south of Cedar Creek.

I picked a spot that gave me a good field of view, sat down and leaned back against a large oak.

There was still two hours of shooting time left so I just sat and watched the living woodland for quite a spell. The squirrels were active and after watching a total of six in easy rifle range I picked off three in quick succession then moved down the draw to another stand. Time was running out, so I squeaked number four into the open and dropped him from high up in a sycamore. The mosquitoes were pestering too much to remain still, so with four fox squirrels in my game bag I started back to the car feeling more content with the world after a most relaxing hunt.

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KEEP 'EM FLYING
HUNTING
CREDENTIALS
1970
OFF
LIMITS

A Look At . . .

Duck Season--1970?

OPENING:

September 2, at 10:14 a. m.

CLOSING:

September 16, 8:17 a. m.

Shooting will be allowed from 10:40 a. m. until noon on every other day during the season, provided the wind velocity does not exceed 4.5 mph.

LIMITS:

Bag limits are simplified this year. Two female coots may be taken or one male coot and one female sawbill. Hunters who have not taken one day's limit as explained above and after making a sworn statement to that effect in federal court, may apply for the Audubon Permit to kill one four-year-old spoonbill. Hunters will be notified when the Spoonbill quota is reached in the principal flyway.

Due to the increase in Mallard ducks in Canada, one mallard may be killed on the third day of the season, *provided* it is not an Ontario Mallard. All Ontario Mallards have slightly bloodshot eyes, which are readily observable by watchful hunters. When a legal mallard is bagged, it must taken immediately to a conservation office where a picking and cleaning permit (costing an additional $2) will be applied.

GEESE:

As hunters have observed, there are thousands of black-fronted Canada geese in the flyway this year. However, whitefronts are in short supply. In the interests of equality, no Canada black-fronts can be shot until an equal number of whitefronts are available.

BLINDS AND CLOTHING:

A blind will consist of three branches from local trees or bushes and may be no larger than the hunter's thumb at the first joint. Club blinds, where hunters rotate between blinds, must use the thumb of the smallest member for measurement of all branches. Blinds must be 41.8 yards from the nearest vegetation. As in past years, all wearing apparel (boots, pants, coat, gloves, etc.) must be either Highway Yellow or Stoplight Red in color. The official government "Keep 'Em Flying" cap, with appropriate and approved emblem attached, and the battery-operated blinker light on the bill, is mandatory and may be purchased at any post office. Hunters are warned that game wardens may search their persons for the mandatory three spare batteries. This measure is necessary in light of the many dead batteries used as excuses last year.

GUNS AND AMMUNITION:

All gauges of shotguns may be used up to and including 28 gauge, any barrel length. Stocks, however, may not exceed six inches in length, regardless of hunter's arm length.

CALLING REGULATIONS:

Manufactured duck calls, mouth or hand actuated, are illegal again this year due to the high degree of proficiency attained by a number of hunters in imitating ducks by voice alone. It is now necessary, also, to place minor restrictions on the activity of voice calling. Any hunter (or guide) who shall endeavor to attract waterfowl by emitting misleading sounds by mouth, must hold in his oral cavity not less than two one-inch ball bearings while doing so. To avoid hardship to the hunter should either or both ball bearings be swallowed during the shoot, continued calling by mouth will be considered legal if each imitating utterance is followed by the cry, "Powder River," uttered in the same degree of sound and intensity.

HUNTER, WARDEN REGULATIONS:

Remember that the warden is your friend. This year to further promote this fact, you need not address state wardens as "Your Majesty." Only federal wardens are to be addressed as such. You will, of course, share your coffee and lunch with these jolly fellows so that they may, in a congenial atmosphere, check your licenses, stamp, permits, citizenship papers, bank account, fingerprints, church affiliation, political connections and I. Q.

Waterfowl for the Future

Since the dawn of civilization waterfowl have held a unique and wondrous fascination for mankind. Watching flocks of migrating ducks darken the sunrise of a crisp autumn morning; seeing a graceful vee of geese silhouetted high against a yellow Harvest Moon; following a flight of mallards as they wheel and drop into a wind-swept marsh — these are memorable and pulse-quickening moments.

Back at the century's beginning it was a commonplace experience, when the color-splashed days of fall arrived, to see massive numbers of ducks and geese literally blanketing the sky as they winged southward to their traditional wintering grounds, pulled by the mysterious magnet of their migratory instinct.

This breathtaking vision of seemingly endless flocks of waterfowl in flight was a noble heritage graciously endowed upon man by nature — a heritage for him to enjoy, to protect and to hand down as a legacy for the generations to follow. Those who thrilled at the awesome sight of these countless thousands of wildfowl gave little thought to any possibility of the skies ever becoming almost devoid of ducks. It was unbelievable that the glorious tradition of waterfowling could ever be pushed to the brink of becoming just a memory of the bountiful "good old days." Yes, fantastic as the possibility seemed, within a few fleeting years such grim prospects came dangerously close to reality.

Shortly after World War I civilization rapidly sprawled westward across the North American continent, like a huge wave encompassing the prairie areas of both Canada and the U. S. Among sportsmen-conservationists there soon arose a disturbing observation—the vast, sky-darkening flocks of ducks were rapidly disappearing. As the waterfowl populations continued their downward plunge toward oblivion, the concern mounted into full-scale alarm — the drastic decline gave rise to dire predictions of the death of our duck-hunting heritage.

So it was, in this black hour, that the solid foundation for Ducks Unlimited was carved, in 1929, with the formation of the "More Game Birds in America Foundation." Searching for the answers to the dark problems responsible for the tragic decrease of continental waterfowl populations, the Foundation launched an intensive study, lasting several years. Among the survey's conclusions: (1) Over 65 percent of the continent's waterfowl began life in the three rich Canadian Prairie Provinces of Alberta, Saskatchewan and Manitoba; (2) the irresistible onslaught of civilization, through draining and cultivation, was steadily ravishing the prime breeding grounds; (3) natural droughts and floods were becoming increasingly critical as a limiting factor in waterfowl production. Finally, the study concluded that if the duck and geese populations were to be maintained and restored, then immediate efforts must begin in the gigantic task of rehabilitating and preserving the primary nesting areas of Canada.

To attack this monumental task, a group of far-sighted American sportsmen banded together to form Ducks Unlimited. It was January 29, 1937, that DU was incorporated in the Nation's Capital as a unique nonprofit membership organization dedicated to the wise conservation of waterfowl and the perpetuation of the noble heritage of waterfowling.

The U. S. government, realizing that federal funds could not be spent for conservation in Canada (even though American sportsmen gained primary benefit), granted tax exemption for contributions to DU's ambitious programs of reclaiming and preserving the prime waterfowl breeding grounds. To actually construct the projects, and to handle the many facets of such a gigantic building program, a companion Canadian corporation called Ducks Unlimited (Canada) was formed, under laws of the Dominion.

Needless to say, DU was sternly faced with problems of immense proportion when dirt was turned on its first wetlands project, Manitoba's Big Grass Marsh, in 1938. Even though a serious depression lingered in both the U. S. and Canada, the determined outdoorsmen pulled up their boots and waded in. To the whole-hearted support of American sportsmen was added the invaluable cooperation of Canada's Provincial and Dominian governments, plus that of ranchers, landholders, communities and industries, who generously granted long-term land leases on wetland areas.

The result—a program of truly international cooperation in conservation, in a brotherhood that has been unrivaled anywhere. The noble cause of Ducks Unlimited—pioneering in the wise conservation of North America's valuable waterfowl resources—has, from the very beginning, been championed by sportsmen who have made the future of our ducks and geese the concern of all, from the highest government agency to the "one-gallused" hunter.

Since this extraordinary conservation movement was initiated some three decades ago, Ducks Unlimited has led the way in the perpetuation of waterfowl, utilizing all facilities at its command to restore, preserve and create nesting habitat for ducks and geese. DU has expended over 11 million dollars to plan, build and develop some 800 "duck factories," as its projects are appropriately called by sportsmen and wildlife officials. All told, since work first began in 1938, almost 1,000 water-control structures such as dams, dikes and levies have been constructed. Today, Ducks Unlimited has, under lease, almost one and a quarter million acres of prime wetland habitat, with total shoreline (a vital ingredient of top quality production) measuring over 7,000 miles.

DU's water-control projects range from valuable small units of less than 50 acres to huge marshland complexes up to a half-million acres in area. Field surveys are currently

The Ducks Unlimited Story

A great moment in the life of any hunter—when a flight of Mallards set their wings for landing among some well-placed decoys, and the hunter jumps from the blind to squeeze off his first shot.

underway on one of the largest and most ambitious programs ever tackled —the 512,000-acre Mawdesley area, near The Pas in Manitoba.

While the majority of projects are built in the rich Prairie Provinces of Manitoba, Saskatchewan and Alberta, Ducks Unlimited production units stretch across Canada, from the Serpentine River Flats Project in southwest British Columbia to the prime 6,000-acre Delaware State Project at Missaquash Marsh, on the border between Nova Scotia and New Brunswick.

DU (Canada)'s highly trained biologists and engineers regularly inspect projects, evaluating production, supervising planting of aquatic food plants, and directing the numerous other tasks essential to insuring top utilization of the areas. Field crews have banded over 140,000 ducks and geese as part of the continuing wildfowl research studies.

DU has clearly illustrated, by example, that the rehabilitation of prime nesting grounds across Canada is a vital factor in the preservation of our waterfowl—and in the process has achieved the equally important goal of instilling a solid awareness among citizens and government agencies alike (on both sides of the border) of the urgent need for wise conservation programs.

With the return of abundant water to the primary breeding regions, Ducks Unlimited is faced with a highly unusual opportunity and challenge. Forging ahead with an aggressive "master plan" of project construction now will enable us to provide and protect much valuable

A drawing of a pair of Pintail ducks, by John A. Ruthven, for Ducks Unlimited, 1967.

habitat from future floods and drought.

Through contributions of time, service and money to their local and state committees, DU members are doing their part in enlarging their own memorable enjoyment of a day in their favorite marsh, while at the same time aiding the preservation of our priceless waterfowl heritage for their sons and grandsons to follow. The wise conservation of our waterfowl is the responsibility and obligation of all who thrill to the sight and sound of these noble creatures.

Any interested person may join Ducks Unlimited and receive the organization's quarterly magazine by sending a donation to Ducks Unlimited, Inc., P. O. Box 8923, Chicago, Ill. 60666. All contributions are tax deductible, and the organization will forward additional information about Ducks Unlimited upon request.

"Assisting nature to aid the birds to multiply must be the first consideration of all of us."

This significant quotation truly exemplifies the goals and purposes of Ducks Unlimited, in the past, the present and in years to come.

Young dragonflies, living as nymphs underwater, dine chiefly on mosquito wrigglers. They continue this mosquito diet as adults by devouring thousands of mosquitoes on the wing.

Hunting Accidents Can Be Avoided

Kansas is a relatively safe state in which to hunt. This is a fact which is revealed by examining hunting accident statistics on a nationwide basis. Still, hunting accidents do occur in the Sunflower State and these accidents can be prevented with proper care on the part of all hunters.

With the fall hunting seasons now at hand, the Kansas Forestry, Fish and Game Commission offers some rules for safe gun handling which should be observed by all sportsmen.

1. Treat every gun as if it were loaded.
2. Always point the muzzle in a safe direction.
3. Be sure of your target and what is beyond it.
4. Never place a loaded gun in a vehicle and make sure that all firearms are unloaded before they are carried into a home or a camp.
5. Never cross a fence with a loaded gun.
6. Make sure your gun is in good mechanical condition.
7. Refuse to hunt with someone who is careless in his gun handling.

These seven rules will cover almost all potentially dangerous situations. Kansas has a good record for safe hunting but it can be improved—with the help of all hunters.

The heavy antlers cast off annually by deer are usually eaten by rodents to satisfy their craving for calcium and other minerals.

Although a young cottontail rabbit has only one chance in twenty of reaching its first birthday, it is one of our most common animals.

Young opossums, at birth, are blind little blobs of meat the size of bees, with only their front paws developed.

Male mosquitoes live on saps and nectar. The shape of their mouths makes it impossible for them to bite.

"Quail Stamp" in 30th Year

PRATT—Kansas' upland game bird stamp, often called the "quail stamp" is celebrating its 30th anniversary.

The stamp, originally required only for the hunting of quail, was started by the state Legislature in the fall of 1937.

It voted that all persons hunting quail in the state, who were required by law to possess a hunting license, must affix a quail stamp to his license and cancel it by writing his name across the face of the stamp in ink.

Each stamp subsequently issued carried an expiration date printed in the lower right corner of the stamp. The first one expired on June 30, 1938, corresponding to the fiscal year for which licenses were issued.

Following is a list of the fiscal years for which the stamps were issued and the number sold for each year:

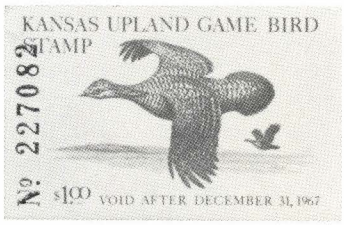
1938—11,715	1949— 52,314
1939—15,390	1950— 60,624
1940—22,036	1951— 69,364
1941—20,255	1952— 76,620
1942—24,425	1953— 73,192
1943—25,254	1954— 59,892
1944—23,027	1955— 64,909
1945—24,338	1956— 71,446
1946—37,720	1957— 73,151
1947—50,041	1958— 75,483
1948—53,777	1959—104,737

The legislative session early in 1959 enacted laws to transfer all licenses from a fiscal to a calendar year basis. Beginning July 1, 1959, a special six months license was issued. Expiration dates on quail stamps were not changed at that time and continued to be issued on a fiscal year basis. In the six months period between July 1, 1959 and December 31, 1959, 115,492 quail stamps were sold bearing the expiration date of June 30, 1960.

During the complete calendar year of 1960, 70,254 quail stamps were sold bearing the expiration date of June 30, 1961.

During the first part of calendar year 1961, quail stamps bearing the expiration date of June 30, 1962 were printed and distributed to county clerks and license vendors. However, the legislature, meeting at the same time as the distribution was being made, abolished the quail stamp and instituted in its place the upland game bird stamp. Subsequently, the Kansas Forestry, Fish and Game Commission withdrew from distribution the quail stamps and issued the upland game bird stamp bearing the expiration date of December 31, 1961. Persons who had already purchased the 50c quail stamp were allowed to trade in those stamps on the purchase of the $1 upland game bird stamp.

First Quail Stamp.



1967 Upland Game Bird Stamp.

Sales of the new game bird stamp during the calendar year 1961 amounted to 179,344. Subsequent sales of this stamp are as follows: 1962—183,076; 1963—168,476; 1964 — 160,998; 1965 — 168,323; 1966 — 180,622.

All of the above figures are for calendar years to correspond with the license period.

In 1963, consecutive numbers were applied to the upland game bird stamps at the printing plant in order to keep a closer accounting for audit purposes. Prior to this time, the 1961 and 1962 stamps were not numbered.

Small supplies of both quail and upland game bird stamps have been retained following the expiration date in order that collectors can be accommodated. These are available at the original face value of the stamp. Proceeds derived from the sale of expired stamps are placed in the petty cash fund and no accurate records of the numbers sold are maintained. Supplies of expired stamps are still available for all years except 1939, 1941, 1942, 1944 and 1945. Stamps of 1943 and 1947 are in short supply.

The future of the upland game bird stamp in Kansas is uncertain. Last year, the Fish and Bame Commission requested that the Legislature abolish the stamp and transfer the $1 charge to the hunting license. The move met with widespread support, and the bill to make it a reality is pending in the House Fish and Game Committee, awaiting action by the 1968 Legislature.

Red squirrels are vegetarians for the most part, dine chiefly on pine cones and tree buds and are able to eat many mushrooms that would kill humans.

New Guinea's Greater Bird of Paradise, noted for its magnificent and multicolored plumes, is a cousin to the common crow.

A baby moose weighs between 15 and 35 pounds at birth, and is dark reddish brown in color with a dark stripe down the back.

The average cache of a chipmunk is a half-bushel of food stored in five or six niches along its 30-foot burrow.

A trout does not swim with its fins, as is commonly believed, but with its entire body. The fins are used as stabilizers to direct its body upward or downward and to prevent it from rolling over.

Hurrah for the Hunter

By THAYNE SMITH

PRATT—Imagine, if you will, four million quail! That's a lot of birds, and totals a lot of recreation for Kansas hunters. They represent a lot of shells bought and sold and used, and reloaded.

Add, if you please, 71,000 prairie chickens, 644,000 pheasants, 923,000 rabbits, several thousand squirrels, a big dove harvest, thousands of coyotes and varmints, and other birds and animals.

That was, in a nutshell, the accomplishment of Kansas hunters during the fall of 1966 and the first few weeks of 1967.

It was a banner hunting year, and this year's prospects are as bright.

However, there's more to hunting than harvesting game, and shooting. Hunters tramping fields and waterways over a period of six months for one type of game or another, have a big impact on the state's economy. They spend thousands of dollars each year not only for firearms and ammunition, but for foodstuffs, motels, gasoline, auto repair and upkeep to keep them rolling to new hunting grounds, and sundry other items connected with "being outdoors."

While the farmer on whose land they hunt is responsible for raising the crops of birds and animals they pursue, they in turn aid the farmer by buying his products—eggs, bacon, ham, steak, meats of all sorts, wheat breads, and all other popular commodities. They provide a better market for his grains, and a bigger demand for his garden crops, his fruits and dairy products.

In fact, the hunter is sometimes an "unsung" benefactor to many conservation and resourceful programs and projects. The list of "aids" for which he is responsible is long, and impressive.

It matters not whether the hunter is on his own land, private property, or on some of the fine public hunting lands in Kansas, his money—in many ways—is helping provide better hunting, fishing and general outdoor recreation for the future.

With special taxes on fishing tackle, arms, ammunition and other sportsman items, the sportsmen of Kansas are paying big sums each year into federal aid programs which are eventually returned to the state.

In turn, the state has many projects supported by funds from the federal aid programs—projects which include such things as the purchase of more land around some federal reservoirs to make better public hunting areas and game management units. The building of roads, toilets, basic camping facilities, water wells, shelters and planting of foods, cover plants and other items has been carried out at many places in the state for hunting and fishing improvement, and the enjoyment of "John Q. Sportsman."

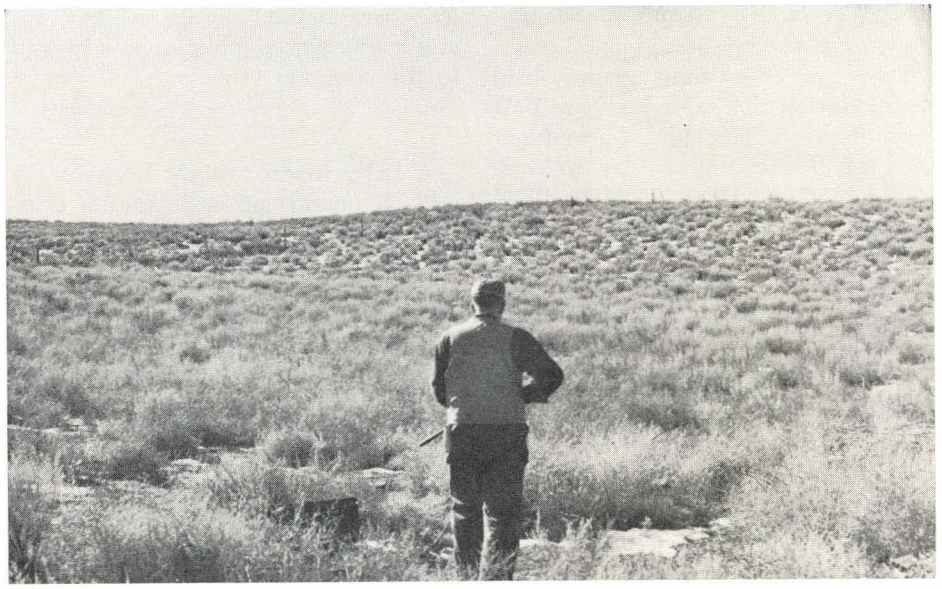
The hunter is often not given his "due." Following are some of the items he supports with his money and his heart, for which he should be given credit:

1. Hunters and fishermen pay for the support of all 50 state fish and game departments through license purchases. The money does not come from general revenue as most people believe.

These fish and game departments are charged by law with the protection of all wildlife. Hunters' money pays for law enforcement personnel to protect hundreds of non-hunted species such as shore birds, song birds, certain hawks and owls and mammals which everyone enjoys.

Refuges bought and paid for by hunters' money support more species of non-hunted wildlife than game. In most cases, the refuges are open to the general public which pays nothing. The nature lover is seldom aware that the preservation and increase of wildlife he enjoys is made possible only through funds supplied by hunters.

All states have programs of land acquisition with hunters' money. The non-hunting public usually has free access to these lands for picnics, hiking and camping. The hunter is glad that his money pays for outdoor recreation enjoyed by the non-paying public. However, the hunter seldom gets any thanks or credit from the public.



Wide open spaces of the vast Cimarron National Grassland, near Elkhart, provide excellent public hunting. The 107,000 acre grassland area abounds in pheasant, rabbits, squirrels, and both the Bobwhite and Scaled quail.

Roy McKinsey, Holton, a state game protector, gives hunter safety and firearms instruction to a group of Scouts at a recent camp. Many state game protectors are qualified National Rifle Association hunter safety instructors, and give similar training to hundreds of youngsters throughout the state each year.

2. Hunters spend millions of dollars developing private lands in wildlife habitat. Although exact figures are not available, a conservative estimate is that hunters spend over $100 million a year improving private lands. Thousands of sportsmen devote countless hours planning and working on habitat development. This habitat supports more non-hunted species, such as song birds, than game species. As 80 percent of the land in America is privately owned, it is obvious that much of the future of wildlife depends on private development of habitat.

3. No game species in America is in danger of being over-harvested by hunters. The public, and too often the hunter, does not understand the careful surveys made by state and federal agencies before hunting seasons and bag limits are set. Many species of game, such as white-tailed deer and mourning doves, are more abundant than when the white man first came to this country.

When a game species is in short supply, the hunter not only yells for action but puts up the money to employ biologists and make sure this species is protected and increased.

The species of wildlife that are endangered in America are not game species. The population of blue birds, which has never been hunted, has declined drastically the last decade. If this had been a game species, hunters would have put up millions of dollars to find the cause of decrease and remedy it.

4. Wildlife cannot be stockpiled. One of the most difficult biological facts to explain to the public is that hunting has very little to do with the population of most species. For instance, the bobwhite quail and mourning dove have an annual mortality of about 75 percent whether they are hunted or not.

5. Hunters and fishermen have been the leaders in every conservation movement the past 75 years. The hunter is the first to notice a shortage of game and do something about it.

For decades, the hunter has been a voice in the wilderness calling for programs that are only just now being popularized in Washington by the current administration. But while the outdoorsman got little help or sympathy from the general public, he paid for the organization and support of state fish and game agencies. The hunter has been a strong force for all conservation for over half a century but has received almost no credit from the public.

6. Hunters, along with other outdoorsmen, support such excellent organizations as the National Wildlife Federation, Ducks Unlimited, Izaak Walton League of America, Wildlife Management Institute and hundreds of regional and local organizations.

The hunter has never received recognition by the general public for his countless hours of work and generous dollars in supporting the programs of these outstanding organizations. The public, which is an increasingly traveling public, enjoys the fruit of the hunters' work but has no inkling who planted the seed.

7. Hunters and the shooting industry asked to be taxed on the sale of sporting arms and ammunition in 1937 with the money to be used for wildlife development. Hunters and the shooting industry are unique in all of America in asking that this excise tax *not* be removed during the 1965 reductions made by Congress at the request of the administration.

Over $300 million has been collected through the tax on sporting arms and ammunition and prorated back to the states for wildlife work under the Pittman-Robertson Act. The general public, which enjoys wildlife but pays nothing, benefits as much as the hunter who picks up the tab.

8. Hunters pour about $1.5 billion a year into the general economy, much of the amount being for conservation projects. The other is spent for hunter travel, food, guides, hunting clothes, boats, camping equipment and related expenses. Many rural states and areas greatly depend on hunter expenditures to maintain and improve their economy. In some areas, hunter money is the number one income.

Rare Duck Finds Kansas Home

GREAT BEND—For the third straight year, a duck which is "rare" to Kansas and inland waters, has successfully nested at the sprawling Cheyenne Bottoms Waterfowl Management Area near Great Bend.

It is the Mottled duck, a close relative of the Mallard and "Black" Mallard.

Marvin Schwilling, Great Bend, waterfowl project leader of the Kansas Fish and Game Commission, said a Mottled duck nest containing seven eggs was located in a clump of cattails far out in the marsh of pool number three at the Bottoms on June 17 this year.

Five of the seven eggs hatched on June 27, he added. One young died in the nest and four left with the mother. "The four young and the female were observed again on July 3 about 700 yards from the nest site," Schwilling said.

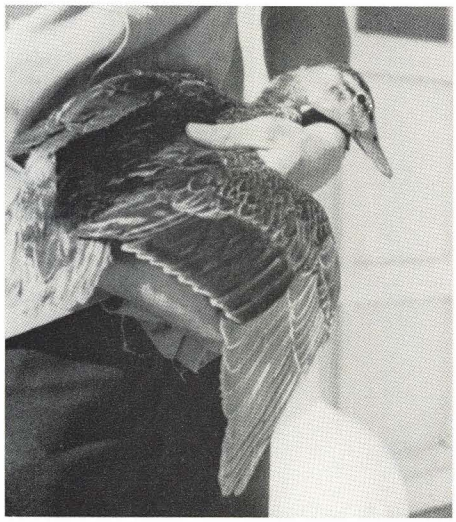
Until the fall of 1963, the Mottled duck (Anas Fulvigula) was considered an "accidental" in Kansas, being one of our rarest waterfowl, Schwilling said. "In fact," he stated, "this duck is rarely found anywhere inland. It is considered a non-migratory duck of the coastal marshes of Texas and Louisiana."

Banding statistics and studies made along the Gulf Coast support his statements. Of 351 mottled ducks banded in Texas, 57 were eventually recovered. Only four had moved over 100 miles from the banding site. Maximum movement was 140 miles, all of it along the gulf coast marshes. In Louisiana, the bird seldom ranges northward in the state above the coastal tier of parishes (counties).

Prior to 1963, only one Mottled duck specimen was known to visit Kansas—a female collected by the late Dr. N. S. Goss of Topeka, near Neosho Falls in Woodson County on March 11, 1876.

During a waterfowl nesting study at Cheyenne Bottoms on July 27, 1963, a nest containing nine Mottled duck eggs was found. It was in a dry bullrush just south of pool number four. Unfortunately, Schwilling said, the nest was destoyed by a skunk a few days later, but not before the find was confirmed.

On Aug. 20, the same year, a flightless young Mottled duck was captured during banding operations in pool number four, proving there had been other nesting by Mottled ducks in the area.



Driven into a banding trap at Cheyenne Bottoms Wildlife Area this summer was this rare and unusual Mottled Duck, one of several seen at the Bottoms in recent years.

On October 26, the same year, a hunter brought an adult female Mottled duck into the hunter checking station at Cheyenne Bottoms headquarters. The duck in flight greatly resembles the Mallard.

During the summer of 1964, several pairs of Mottled ducks were observed regularly at Cheyenne Bottoms, but no nests were located. On July 29 the same year an adult flightless male in eclipse moult condition was caught in a banding trap along with other ducks in pool number five. This bird was photographed, banded and released.

On Oct. 11, 1964, another adult female was brought into the hunter checking station at Cheyenne Bottoms, and a juvenile male was checked at the hunter station on Oct. 24, 1965.

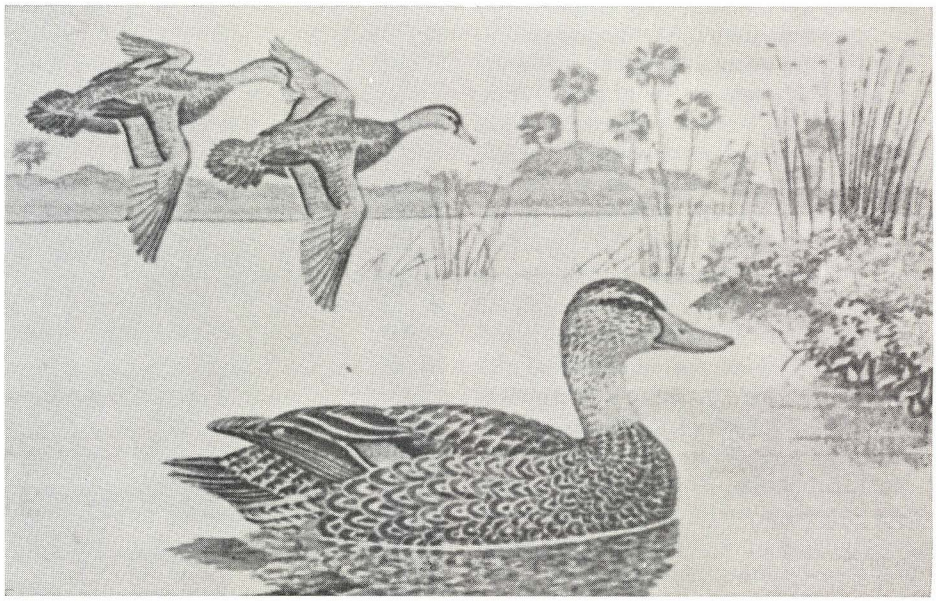
This leaves no doubt that a breeding population of the rare Mottled duck has established itself in central Kansas, but many questions about it are unanswered.

How long have they been here? Have they been mistaken for black ducks—which are sometimes found in Kansas—possibly for many years?

Where did they come from? How did they get here, considering they are not "distance" fliers?

More important, are they migratory?

Maybe the future will yield some answers.



Artist's sketch of rare mottled ducks seen in recent years at Cheyenne Bottoms Wildlife Refuge.

Conditioning for the Hunt

This fall nearly 200,000 hunters will take to the woods, fields and waterways in pursuit of the rich variety of game which Kansas offers. All of them will have fun, but many will find their joys diluted by blisters, bruises and assorted sprains and contusions.

Today's mechanized society deprives folks of the physical labors which keep the body fit, and the sudden switch from assembly line and office chair to rigors of the hunt is bound to result in discomfort. But a minimum of conditioning will add immeasurably to your ability and comfort in the field.

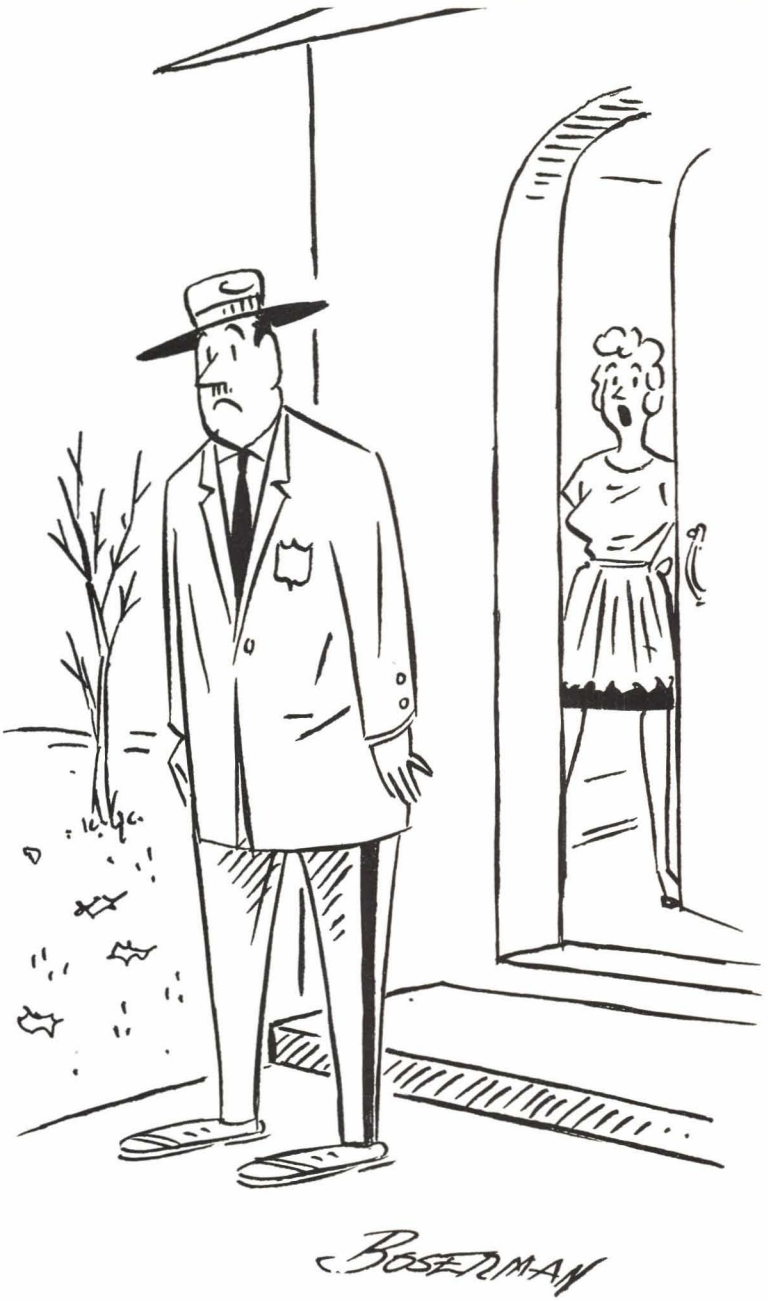
Kansas Fish and Game officials offer the following suggestions for limbering and toughening muscles that bear the brunt of a day's hunt.

Hunting is mostly walking. It stands to reason that this exercise, above all others, should be engaged in regularly for several weeks before the first trip. Walking without a purpose can be a bore. Substitute shank's mare for short trips on which you normally drive—to and from work, to the store and post office, and on the many small errands required by routine living. Begin easily and add gradually to the distance and speed of hiking. In two or three weeks you should be clipping off three or four miles without strain, and with head high and arms swinging. Walking is one of the most healthful yet least strenuous of exercises. It can hardly be overdone on flat terrain.

For a week prior to hunting wear your regular field boots or shoes. The added weight helps in conditioning but more than that, it may reveal tightness, creases, or other shortcomings that can spoil a trip. If you're opening the season with new foot gear, by all means wear them regularly ahead of time to allow for gradual breaking in.

A few flights of stairs daily will bring muscles into play that you never knew you had. And, later, the first hill on a deer drive won't come as such a horrible surprise. As with any exercise, begin gradually—a leisurely flight or two the first day; then add steps and speed of climbing until you're handling five or six flights without blowing like a porpoise.

If you're overweight, slack off on the groceries along with your exercising. Shedding even a few pounds will add noticeably to your endurance in the field. The combination of reduced poundage and increased vigor may even put you in reach of "condition" for the first time in years. You'll be a better man going into the season and pleasures of the hunt will be multiplied when you find you can take it in stride.



"What would you like for dinner, in case you don't find someone with more than a limit of ducks?"

Take a Dog Hunting

Whatever game species you find of main interest, there are one or more breeds of dogs which will help you gain greater efficiency and satisfaction in the hunt.

"Selective breeding through many generations has produced types with amazing aptitudes for their assigned work. And while individual abilities will vary, the characteristics of any given breed are inherited and appear with greater or lesser intensity in practically all individuals," hunting experts say.

"If your specialty is upland birds—pheasants, quail, prairie chicken—you have a great variety of breeds from which to choose. English Setters and Pointers are the old standbys and continue first in popularity. But there are a number of other pointing dogs, also capable of doing a good job. And if you've thrilled to the wild thrashing of a pheasant flushing unexpectedly from a fencerow, just try hunting the wily ringneck using an intense, hard-working, pointing dog. You'll get a double thrill when, from break-neck speed, he skids to a stiff legged stop, tail high, and then with a hypnotic stare he tells you, 'He's right there, boss.'

"And don't let your dog assistant quit his job with merely finding game. Some will retrieve naturally, while others may require a little coaxing—even urging. But any effort given over to sharpening up the retrieve will pay off handsomely in the recovery of game which would otherwise be lost. Several of the spaniel breeds come naturally by the retrieving chore and at the same time do a bang-up job at sniffing out close-sitting birds.

"For the serious hunter of waterfowl, a good retriever is a must. He'll save plenty of ammunition, and even more important—birds, most every time out. If you're the kind of gunner who doesn't believe that you have to be miserable to have a good time, then a strong water dog is what you want. He'll save you many a weary step plodding through the mud—and find

A good point . . . And a good retrieve . . .

the bird when you wouldn't. If wading out over your boot tops to pick a downed bird out of the decoys, or taking fifteen minutes to pull the boat out of hiding to get one further out, is not to your liking, just remember there's an easy way out. One of the non-slip retrievers will do it all for you and enjoy every second of it. And how many times have you spooked an incoming flight by being caught out of the blind while trying to corner a cripple?

"And as for rabbit hunting," continues the wildlife authority, "the man who hasn't dropped his game in front of a pack of beagles, just hasn't hunted rabbits. If there's a gun dog breed born with everything they need to do their job right, it's this diminutive hound. Unlike pointers, retrievers and other sporting breeds, their mission in life is not to find and mark game for the hunter, but to chase it. And the beagle doesn't bring his quarry around in a circle. He just chases and yaps. The rabbit circles of his own accord and only for the reason that he wants to stay on familiar terrain.

"While his specialty is rabbits, the beagle will do a commendable job on upland birds as well. After a few days of hunting, ringnecks will develop a few tricks to confuse the best pointing dog—but not a beagle. He'll bury his nose in the ground and put them out of the densest cover. And you can't beat him for a breed to live with the year around.

"One of the best reasons for using a dog is the fact that you're more apt to find a bird after it's hit and you won't leave as many cripples in the field. It's the mark of a good sportsman and a good conservationist to hunt over a dog."

. . . Means hunting pleasure for Alma editor Bob Stuewe and "Molly."

Crickets' chirps have surprising carrying power. One cricket barely an inch long sounds a note audible for almost a mile.

The only mammal that is purple in color is the blesbok, a small South African antelope.

Before the screw-worm was wiped out in Texas it killed up to 80 percent of the annual fawn crop in some areas.

Nature provides the Alaskan fox with a tail large enough to be used as a blanket for its nose and feet during cold nights.

Herons fly with their necks drawn in and their feet extended. Cranes, on the other hand, extend their necks in flight.

Sex in the Wild Is Weird

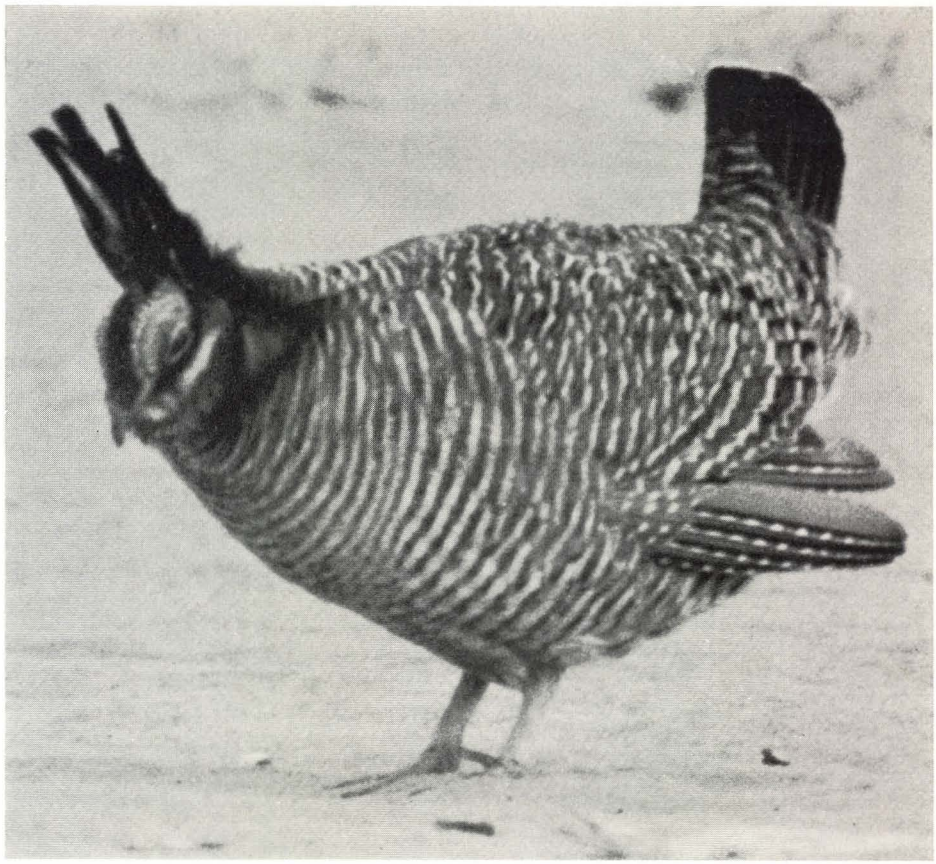
A discerning naturalist once observed that, "Nature's way is any way that works." And when it comes to replenishing their kind, the workings of wild things occur in endless variety, some so weird that you marvel at the continued existence of the species. Consider, for example, the case with most birds. Fertilized eggs are laid at daily intervals, yet they all hatch at about the same time. The reason is temperature. In the egg-laying process the female is away from the nest for extended periods, and with variable temperatures, growth of the embryo is halted. But when the last egg is laid the clutch is held at a uniform temperature by the setting bird. Then, and only then, does embryonic growth begin—for the first egg laid as well as the last. And a good thing it is.

Without such control over beginning incubation, hens of large-brood species, such as pheasants, quail and ducks, would have real problems. The first born would be two weeks older than the last, and trying to tend the fleet-of-foot while incubating others yet in the egg would bring neurosis to the mother and high mortality to the young.

Mammals, too, can blow the whistle on pre-natal development. Minks, weasels and certain others will mate at various times of the year, yet the young are born during a given period in the spring when the weather is warm and food is more readily available. In these instances fertilization occurs with mating, but development is suspended, then resumed at a time to give birth during a favorable season.

Bears make easy work of having young. It occurs during the "twilight sleep" of hibernation. Then a quarter-ton sow gives birth to two or three half-pound embryonic morsels. They fend for themselves and are reasonably self sufficient by the time mama bear stirs to wakefulness a month or more later.

Porcupines would appear to have a sticky time of it, particularly with a breech presentation. But nature has



One of the most unusual attractions in the wild is the dance and booming of the male lesser prairie chicken during the mating season, as shown in this excellent photo taken on the Cimarron National Grassland in Southwest Kansas, where "lessers" abound. (Fish and Game Commission Photo.)

Proud parents in the form of a pair of graceful Canada geese swim on Kirwin Reservoir and Wildlife Refuge near Phillipsburg with their young.

Bunnies Are in Full Bloom

For over two months the hedgerows and field edges have been swarming with cottontails.

The rabbit crop is in full bloom—and the principal Kansas hunting seasons are still a month away. It's too bad the two don't mesh, for the rabbits have already begun the long, downward skid that won't end until next spring's breeding season.

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developed a way out. Young porkies come packaged in puncture-proof bags which the mother tears open on delivery. Exposed to the air, the soft, moist spines harden in a matter of minutes. Then the animated pin cushions are prepared to face the world with confidence.

Armadillos are unique in their reproductive ways. They always have four young; they are always of the same sex (either all males or females); and they are always identical quadruplets. It can't be otherwise because the single fertilized egg divides into four, each having identical germ plasm. If there's an advantage to the process, it's not apparent. But it is different.

Unusual—and significant, too—is the way many kinds of wildlife regulate their production of young to fit conditions in the environment. Given plenty of food and cover, cottontails, for example, will have more and larger litters than they will under adverse circumstances.

In fact, with food and shelter in plenty, a sparse population will even include some breeding by young-of-the-year, something which never happens where the animals are overpopulated. Increased production and a determination to swell numbers to fit the capacity of land to support them has been noted in deer, muskrats and others as well.

It all argues for a full use of the annual crop by hunting, trapping or other useful means. What it amounts to is that animals not used are wasted and, further, their presence serves as a drag on the full reproductive potential. Sex in the wild is a determined force, and a calculated sparsity is a way to stimulate it to full reckoning.

Each day until then—from now to April—rabbits will be on the wane.

In New York State, it was found that over two-thirds of the rabbits alive in spring and summer won't survive until the fall hunting season.

In Iowa, biologist Paul Kline studied rabbits on a 186-acre area and found an 84% decrease from September 1 to January 1. By releasing tagged rabbits, Paul estimated 284 on the place by September 1. A month later, there were about 184. By January 1, only 41 rabbits remained—with the toughest part of the year still ahead.

In late fall, hunters wonder what has happened to rabbits since late summer. Rain has happened to them, and disease, accidents, predators, and some things that we don't even know about. After that comes the fatal shock of the first frosty nights of autumn.

By the time the hunter gets around to hunting, nature has already cut deep into the rabbit supply. The hunter gives up the cream of the crop for the privilege of hunting in sharp air and watching beagles work on snow.

Well, it's a fair trade. Who wants to hunt rabbits in Indian Summer? But the hunter should realize that a lot of rabbit subtraction goes on before he gets there, and that wildlife waits on nature's convenience instead of the hunter's.

1967 KANSAS HUNTING SEASONS

Squirrel	Now Open	Closes December 31
Dove	Now Open	Closes October 30
Rails	Now Open	Closes November 9
Geese	Opens September 30	Closes December 10
Snipe	Opens October 1	Closes November 19
Deer (Archery)	Opens October 1	Closes November 26
(Firearms)	Opens December 8	Closes December 12
Woodcock	Opens October 21	Closes December 24
Ducks, Coots, Mergansers and Gallinules		
(First Segment)	Opens October 21	Closes November 19
(Second Segment)	Opens December 9	Closes December 23
Prairie Chicken	Opens November 4	Closes November 12
Pheasants (West of US-81)		
(First Segment)	Opens November 11	Closes November 26
(Second Segment)	Opens December 16	Closes December 31
Pheasants (East of US-81)		
(First Segment)	Opens November 18	Closes December 3
(Second Segment)	Opens December 16	Closes December 31
**Quail	Opens November 18	Closes December 31

**Hunting allowed only on Saturdays, Sundays, Mondays, Wednesdays, Fridays and Holidays during specified season. Open quail hunting dates include November 18, 19, 20, 22, 23, 24, 25, 26, 27, 29; December 1, 2, 3, 4, 6, 8, 9, 10, 11, 13, 15, 16, 17, 18, 20, 22, 23, 24, 25, 27, 29, 30, 31.

RABBITS—Open year around, except from October 16 through December 14. In addition, may be taken during any upland game bird season.