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the Wild Turkey in Nebraska
FOSSILIZED REMAINS indicate that prehistoric turkeys roamed the eastern and southwestern United States. Five different prehistoric turkeys have been described that lived during the Pleistocene period some 15,000 to 50,000 years ago.

While early man, the paleo-Indians, preyed primarily upon larger animals for food and fiber, birds were also preyed upon, as evidenced by artifacts of later man. The wild turkey is believed to have played important roles in the cultures of pre-Columbian Indians, especially in Mexico and the southwestern United States. Historical records and archeological findings indicate that extensive domestication of the wild turkey existed throughout the southwestern United States and in Mexico. Although kept for food, turkeys were raised principally for feathers, to adorn garments and fletch arrows.

Early colonists were surprised to find wild turkeys in abundance. Generally, they found the flesh of turkeys a great delicacy. The wild turkeys, due to the loss of their forest habitat, disappeared from large sections of their original range following settlement of this country.

Natural selection of hereditary characteristics, which enables a living organism to adapt to particular environmental conditions, takes long periods of time. Distinct differences in size and coloration occur in different ecological regions. Generally, wild turkeys associated with the denser and moister deciduous forests of the eastern United States exhibit darker plumages, while less darkly pigmented turkeys are found in the drier southwest and in Mexico. The wild turkey, Meleagris gallopavo, is native and exclusive to North America. There are six recognized races or subspecies: the Eastern, M. g. silvestris; the Florida, M. g. osceola; the Rio Grande, M. g. intermedia; the Merriam’s, M. g. merriami; the Gould’s, M. g. mexicana; and the Mexican, M. g. gallopavo. The eastern subspecies, and possibly the Rio Grande turkey, was believed to have been native to Nebraska, but was extirpated by 1915.

While the original habitat has been greatly reduced in size, distribution of the wild turkey has been greatly expanded by restoration and transplantation programs being carried out by numerous states. The Nebraska Game and Parks Commission initiated a restoration program in 1959 that developed into an overnight success. The release of 28 Merriam’s wild turkeys in northwest Nebraska was the nucleus for other successful introduction programs throughout the state.

Historically, the Merriam’s turkey range encompassed portions of Arizona, New Mexico, Colorado and possibly Texas. The range is characterized by high mesas, deep canyons and rugged mountains. Ponderosa pine, juniper, pinon, and oak forests are the dominant types in this arid habitat. The extent of the turkey range within the region is limited by the type of vegetational cover.

Numerous early attempts were made to re-establish the wild turkey in Nebraska, both by private individuals and groups and by the Game Commission. Since all of the release stock was pen-reared and crossed with domestic strains, none of the birds possessed the traits necessary for survival in the wild. Thus, they soon succumbed to the environment.

The state’s wild turkey program started with the release of 28 Merriam’s turkeys in 1959 in the Pine Ridge, and 518 Rio Grande turkeys in 1961 and 1962 throughout the riparian-woodland habitat of central and southwestern Nebraska. The Merriam’s turkey program met with immediate success, while the Rio Grande program showed only limited success and failed in most areas.

Nebraska does not have the rugged terrain and vast timber expanses found in the Merriam’s historical range, however, the Pine Ridge of northwest Nebraska is similar. States of northern latitudes outside of the historic range of the wild turkey have also initiated release programs utilizing the western species and have met with success.

The Pine Ridge is a narrow escarpment about 90 miles long varying from a few miles to almost 20 miles in width. The extent of the area occupied by timber, interspersed with grassland and cropland, is approximately 630 square miles. The area
contains a system of rugged canyons and buttes intersected by numerous small streams. Although a formation of the prairie, the ridge has mountainous topography similar in many respects to the Black Hills of South Dakota. The soil has a fine, sandy loam texture. Major land use is ranching with the necessary crop production for wintering cattle. Crops include oats, alfalfa, wheat, corn, barley and rye.

The predominant vegetation is open stands of ponderosa pine with understories of native and introduced short and mid grasses. Grasses include grama, buffalo grass, bluestem, switchgrass, needle-and-thread and wheatgrass. Forbs include soapweed, sand sage, vetches, sunflower and a variety of other composites. The more mesic sites support a growth of deciduous trees with an understory of shrubs. Common hardwoods are boxelder, cottonwood and ash. Shrubs include buckbrush, chokecherry and wild rose.

Preliminary reconnaissance of the Pine Ridge indicated that suitable habitat for Merriam's turkeys was in areas composed of 46 percent pine woodland, 32 percent grassland, 13 percent grain crops, 5 percent alfalfa and 4 percent deciduous woodlands.

In February and March of 1959, 28 wild-trapped Merriam's turkeys were released at two sites in the Pine Ridge area. Three toms and 17 hens were released at the Cottonwood Creek site northwest of Crawford, and 3 toms and 5 hens at the Deadhorse Creek site southwest of Chadron.

Following their release, the birds remained relatively close to the sites. However, with the breeding period rapidly approaching, the birds immediately set out to select suitable nesting sites.

The initial 28 birds ranged within 5 miles of the release sites during the first nesting period and wintered their broods in the same area. The Cottonwood Creek flock, where only juvenile toms were released, increased from 20 to 91, disputing previous beliefs that only adult males are capable of mating successfully.

As the second nesting period approached, the wintering birds dispersed and found sites in various creek drainages. Distribution of turkeys was extended to the Wyoming line, a distance of about 18 miles from the release site. The Cottonwood Creek population extended its range rapidly and nearly all suitable drainages were inhabited by these turkeys. The Deadhorse Creek population did not disperse as rapidly and wintered in the Chadron Creek and Deadhorse Creek drainages.

The fourth year revealed that turkeys had moved into Wyoming through an extension of the Pine Ridge and into South Dakota through the Hat Creek drainage. Nesting birds and summer broods were reported in about 80 percent of the suitable habitat. Reports of birds traveling across rangeland and cropland indicated nest site saturation in some areas. It was estimated that during the fall of 1962 a minimum of 3,000 birds existed in the Pine Ridge, which duplicated population patterns of other western states. A limited fall season was allowed, with 500 turkey hunters bagging 281 birds.

A trapping and transplanting program was initiated in February of 1961 using the original Cottonwood Creek release site for the nucleus stock. These birds formed the parent stock for the greater portion of habitable Nebraska turkey range.

The population of Merriam's turkeys reached a plateau during the fall of 1963. The Pine Ridge turkey range had apparently reached its carrying capacity.

During 1975, after 17 years of turkey management, Nebraskans enjoyed four different types of hunting seasons. That year, 4,334 hunters bagged 1,457 turkeys during all the spring archery, spring shotgun, fall archery, and fall shotgun seasons.
A Year with the Merriam's

SINCE THE DOMESTIC turkey was originally developed from wild stock, the general appearance of the birds is very similar. However, to the outdoorsman, some differences are very easily discernible. Wild turkeys have longer legs and a more streamlined body. The neck is longer and the head smaller and flattened. The adult Merriam's wild turkey normally has pink legs while those of young-of-the-year are brownish-gray. The large, black bird displays a variety of iridescent colors from bronze to green. Breast feathers of the tom appear to be jet black while the hen's are edged with a white band, giving the appearance of a white, frosted breast. The neck and shoulders of the bird appear metallic bronze in the sunlight. Wing primaries show distinct white bars with a light gray background. The back is covered with velvety black feathers. The tail coverts or rump feathers are edged with white or light tan. Farther back toward the tail the feathers are a rich chestnut brown with darker markings. The tail feathers are almost black with chestnut markings and a light tan or buff-colored tip. The head of the tom is bald with a narrow band of feathers running up the back of the neck almost to the crown. The head is greenish blue except when the tom is excited, when it will turn red about the neck and reddish blue in the cheeks. The hen's head is covered with a scattering of short, velvety black, hair-like feathers.

The wild turkey, the largest upland game bird of America, weighs up to 30 pounds. During fall hunting seasons in Nebraska, Merriam's turkeys average 18 pounds for adult toms, 12 pounds for juvenile toms, 10 pounds.
Tom turkeys court with spread tails and drooped wings

for adult hens, and about 9 pounds for juvenile hens.

As the days grow longer and nights shorter during late winter and early spring, the increased amount of light upon the receptive cells in the eyes of birds and many mammals causes a response from certain endocrine glands. The hormones produced enlarge the ovaries of the hen and the testes of the tom, resulting in physiological changes in the birds. Courtship and mating begins about the same date each year despite temperature variations. The toms spend increasing periods of time in gobbling and engaging in mock battles with one another. Often these activities result in a squaring off of two males with much neck exercise, similar to "necking", and end with a show of strength with the pair having their necks twisted around each other.

"Breast sponge," a mass of cellular tissue filled with oil and fat, begins to develop in the male. The male probably relies on this energy reserve, since during the peak breeding period little feeding is done. Apparently the tom is more interested in his amorous antics than he is in his physical well-being.

Dominant males soon establish breeding territories on which more and more time is spent. During the peak of courtship and breeding activities, the toms are on their established mating grounds entertaining as many hens as choose to visit them. Breeding or mating grounds are also referred to as strutting grounds. There may be several within the territories of dominant males. Several adult toms may frequent an area established as their territory and visit their strutting grounds, and will actively defend them against lesser males. Gobbling is their way of announcing their status and encouraging hens to visit them. When the hen becomes receptive to mating, she will seek out strutting grounds and participate in the courtship ritual. Mating is promiscuous, and while non-receptive females will avoid the toms, receptive hens will seek them.

The tom's courtship display movements are slow and deliberate with a proud display of feathers. The wings are lowered to the ground with the primary feathers spread apart, sometimes dragging in the forest and grassy litter. Body feathers are held erect and the tail is held upright and fanned out, cocked first to one side and then the other. The neck is pressed against the body while the upper portion of the neck is curved forward in an S-shape. The caruncules (fleshy part of head photos by Bob Grier
and neck) change from red to blue and the peduncle becomes elongated and turgid. The presence of a receptive female increases the intensity of the male’s courtship display. Pacing back and forth, several quick steps may be taken toward the hen with his wings dragging while expelling air in puffs.

The male is a formidable sight of solid power in the early morning sun, as the feathers display various iridescent hues of bronze, gold, red, green and blue. The female responds by assuming a low crouching position, holding her head close to her body with tail low, but raising her head as the male approaches. The male mounts the female very deliberately, with their sexual organs in contact it takes only a moment to consummate the copulatory act.

Only one successful copulation is necessary for the eggs of a single clutch to be fertilized. Eggs laid up to four weeks after the last mating have been found fertile, as the walls of the upper oviduct serve as reservoirs for the male sperm. Sperm has been found to remain viable for 56 days in the oviduct of the hen.

When the turkey hen becomes broody, her ovaries begin to shrink and mating ceases. It is at this time, when the hens are on the nest incubating their eggs, that the amorous males respond to artificial calls and can be lured to within shooting range of the hunter. Based upon information compiled in Nebraska, most hens are actively engaged in nesting by mid to late April.

Nests, which are crudely constructed, may be only slight depressions in the forest litter. Several nests have been examined which revealed very little concealment; located in open areas and usually on a side hill. The eggs are highly resistant to cold as shown by late snowstorms during the spring of the year which still resulted in fair production. An undisturbed, experienced hen covers her nest with feathers, leaves and other forest litter when leaving to feed or water. Clutch size averages 10 eggs, with 13 to 15 not uncommon. Egg laying usually takes 14 days for the 10 eggs.

The incubating hen leaves her nest secretly for short periods during the early or late hours of the day for brief feeding and watering. Nest abandonment is not infrequent during the early stage of incubation, but the hen will exhibit greater broodiness during the last several days of the 28-day incubation period. The frequency of abandonment is not known in our turkey populations, but it is suspected that disturbance by human intervention is a far greater cause than any other.

Hatching peak in Nebraska occurs during the first weeks in June. Although hatching may occur over a period of 24 hours, most of the eggs in the clutch hatch out within a short time. Shortly after hatching activity ceases, the hen leads the poult to a nearby grassy opening where insect life abounds. The poult grow rapidly on the protein-rich diet of insect and other animal matter.

Chilling by dew or summer showers during the poult's early life can be disastrous. The hen's body and wings provide adequate warmth and shelter for the poult from precipitation, but if they feed, they may get wet. The hen will lead her brood to a feeding area as soon as a storm lets up. The young poult following the hen may be in head-high, moist vegetation and may soon get chilled. Lowering of body temperature will soon affect the poult and they will become sluggish and lie down frequently. The hen may notice the loss of a poult, but can only call to her straggler. If the weakened poult does not join the family group, it will be left behind to succumb to the elements.

The young poult is brooded on the ground for about four weeks since it takes that long for the primaries to develop and sustain the turkey in flight. However, even at two weeks of age a young turkey is capable of hop-
Most chicks hatch out within a relatively short time and are immediately led from nest and fluttering into low limbs of small trees.

As summer progresses, the brood is joined by other families. Much can be said in favor of this gregarious nature of turkeys as there is safety in numbers. A group of turkeys can feed and travel in safety as there are more sentinels to keep watch. At no instant will all the birds have their heads down and feeding, thus any suspicious movement or object will be noticed and soon the entire group will be alerted. Observations of turkeys indicate that while the birds’ vision is no sharper than man’s, it is capable of detecting the slightest change in position of an object. Vision of the bird is flat and requires several quick glances, and from different positions, to ascertain size, shape, and interpretation of an object. Experienced hunters have learned this fact and try not to reveal themselves with movement even though they may not be concealed too well, as the wary wild turkey cranes his neck one way and another to get a better picture of the scene. Studies have shown that wild turkeys can easily detect differences in some colors such as white and yellow. Nocturnal vision is quite poor, and no movement from one tree to another occurs after they go to roost. When disturbed and forced to leave their roost, they will awkwardly blunder about, crash-
Sex Identification

Most hunters see their turkey on the run, and since only toms are legal during spring season, identification is imperative. Mature birds are easy to identify under normal conditions. The gobbler has a greater portion of his head devoid of feathers. The hen has a more feathered head and lacks the fleshy folds of skin that mark the male. The beard, a group of modified feathers found protruding from the breast of all male turkeys, is a good confirming character. About 10 percent of Merriam’s hens in Nebraska also sport beards, though, so hunters should look at the head to confirm sex before shooting. The short body feathers, especially those on the breast, are tipped with a dark band on the male. The body feathers of the female are white tipped. From a distance this makes the tom appear shiny black; the female more dull
the turkey's diet in spring and summer while fruits are consumed in great quantities in late summer and fall. Mast and waste grains are used in late fall and winter. Pieces of minerals and rocks that they pick up and store in their gizzards help break down hard food material. The digestive tract is highly developed and has a high microbial count of bacteria that enables the wild turkey to utilize many varied and bulky items.

The wild poults and young turkeys depend on the wisdom of the older birds. In response to a warning cluck of the hen, wild poults will freeze and be camouflaged in the surroundings while domestic birds will scatter. Older birds will rely on their long legs to carry them from danger in short order, although they are capable of swift flight.

When startled or if danger is close at hand, the birds take to wing and fly at speeds of about 30 to 35 miles per hour. It has been estimated that the wild turkey can attain a flight speed of up to 50 or 55 miles per hour. Perhaps this is achieved in a flight down into a valley. The distance flown is dictated by the terrain and the danger, but flight capability is one of the turkey's greatest assets for protection. After a few running steps he can spring into the air and the wings will lift him quickly upward. Rising almost straight up until the tree tops are cleared, the bird levels off and glides and soars to safety.

Sex and age information of a flock of turkeys in the wild are important in managing the species. Determination of sex is more difficult during the sub-juvenile state, but even as early as September, when turkeys are 12 to 15 weeks old, sex can be determined by examining the contour feathers. Male's are black tipped and female's are white tipped. In younger males, the black band may be masked by a buffy fringe that will eventually be worn off. By late fall, most of the young birds of the year can be sexed easily by the feathering of the female's head, or the lack of feathering of the male's head.

Sex determination of the mature birds is easier. The gobbler has a greater portion of his head devoid of feathers and covered with fleshy folds of skin that elongate to great size during sexual excitement. The contour feathers of the body, especially the breast, are tipped with a dark black band of a rich sheen that makes the tom appear black in the distance. These same black feathers will become iridescent with many colors in the sunlight. The shape of these breast contour feathers are more squared than that of the females, which are rounded at the edges. The "beard" is a group of modified feathers found on the breast of the gobbler. It may attain a length of up to 12 inches, but is usually about 6 to 10 inches long. These hair-like feathers look like bristles, and continue to grow throughout the birds' lives, but wear and breakage limits the length. It is not uncommon to find birds possessing multiple beards. Adult toms also possess a modified scale on their tarsus which is commonly referred to as a spur.
Hens have a more feathered head than the male and lack the fleshy folds of skin. Her contour feathers are white tipped rather than black tipped, and generally they do not have beards or spurs. However, it has been found that from 10 to 20 percent of adult hens possess the hair-like appendages with some up to 7.5 inches in length. Therefore, hunters after gobblers in the spring should not use this characteristic alone in determining the sex.

Longevity of the wild turkey has been recorded up to 10 years, but in a hunted wild population this is quite rare. Our marked bird information shows a longevity of at least 6 1/2 years, while tag recoveries show a population turnover of 56 percent.

Movement of turkeys varies from day to day and with season of the year. Basically, habitat quality is the most important factor influencing the extent of daily and seasonal movements.

When a flock is favored with good range, the birds remain in a relatively small area, but in years of poor mast crops the birds may have to range a greater distance. Generally, young hens are greater travelers, perhaps in their quest for nesting sites.

Wintering turkeys spend much of their time feeding, and often range large areas. The warmer, southern slopes are utilized as the snow disappears sooner, making scratching in the litter for pine mast and other seed crops easier. The turkeys group together in large flocks of families. The adult males form their own group but frequent the same feeding and loafing areas. Roosting sites at this time may have a series of trees occupied by as many as 200 to 300 birds.

Predation in the wild is a constant battle for the wild turkey. Acute vision, hearing and quick flight protect the turkey in his struggle for survival against both avian and mammalian predators. Perhaps the most important predator is the bobcat and possibly the coyote. Other predators are the golden eagle, great horned owl, raccoon, fox, skunk, badger, magpie and crow. Losses in the wild to these predators are not considered harmful to the turkey population since most of these natural predations occur upon weak and sick birds. There are situations when predation may have a drastic impact upon the wild population, but if the habitat provides adequate cover the effects are minimal.

The only predator that the wild turkey must fear is the human, with his efficient equipment and machines that can alter the habitat drastically. Uncontrolled fires, started naturally or by man, may destroy the turkey habitat in a short time.

The turkey is known to be susceptible to many diseases and parasites, especially under confinement. Probably the most feared disease that may ravage a population of turkeys is blackhead, or enterohepatitis, especially in a high-density flock. Other diseases that are more commonly cited in literature are fowl cholera, fowl pox, fowl typhoid, avian tuberculosis and coccidiosis. Parasites that are commonly found internally in the turkey are roundworms, tapeworms and flukes, and externally, lice, fleas, flies, mites and ticks.

Several Merriam's turkeys bagged during past hunting seasons have shown lesions on the internal organs, mainly the liver and spleen. Specimens examined by the pathology laboratory in Lincoln revealed the birds were infected by Mycobacterium avium, the causative agent for avian tuberculosis. It is said to be a contagious disease characterized by its insidious chronicity and persistence in a flock once established. It shows few external signs and in general produces unthriftiness, lowering of egg production, and finally death.

Prevention and control of this disease, as in all disease and parasites, is difficult and there is no current cure. Sanitation is about all that can be suggested. For this reason it is best not to encourage large flocks of wild turkey in a given area. Artificial feeding, yarding, and over-protection are not good management practices and certainly not to be recommended.

photo by Bob Grier

During the winter, family groups join to form large flocks, some numbering in the hundreds
Managing the Flocks

Wildlife is a renewable natural resource, and if managed wisely, can be cropped annually without depleting the stock. In the management of big game animals in Nebraska, including the wild turkey, policies must take into consideration the interests of sportsmen and landowners upon whose land most of the animals live. The goal of sound management is to provide the greatest number of wildlife and recreational benefits to the sportsmen while keeping the populations at levels consistent with the agricultural interest of the land. Flock and population inventories taken throughout the year and the analysis of harvest information play major roles in managing turkeys in Nebraska.

Currently, the basic objective of providing the greatest number of wildlife consistent with land use is being met. However, the aesthetic value of the wild turkey is outweighed so much by its agricultural value that some landowners who are plagued by annual infestations of insects on their land encourage and protect the flock of wild turkey. This over-protection may cause some problems to the flock and the habitat.

Surveys to determine population status start with winter flock counts which result in the relative population number prior to production period. These wintering population numbers have fluctuated to a high of 3,155 in 1969 from the original 28 birds in the Pine Ridge. The Pine Ridge fall turkey population has stabilized at 4,500 birds or less, while the wintering bird numbers have averaged 1,450. Despite fluctuations of the wintering population, the fall population estimates have not varied much from year to year, indicating that a 4,500-bird population in the fall is the carrying capacity for the Pine Ridge range.

Brood indices compiled by 5-year averages reveal a continual decline of young per hen with brood. The first 5-year period averaged 8.9 young per hen with brood, while the next two periods were 6.6 and 6.1 respectively.

The interpretation of data is difficult due to the varying factors that may be affecting total population and production. However, the primary limiting factor may be lack of nesting habitat. This has been based upon the fact that brood indices are still quite respectable and that when applied to the known number of wintering birds should result in a high fall population. Then, after subtracting the number of birds taken during the legal harvest there is still a great number of birds unaccounted for. It is unrealistic to think that every year we have a high mortality attributed to poaching, predation, winter storms, etc. Therefore, we return to the theory that production was not as high as we believed, and to the hypothesis that nesting sites may not be available to all the hens. Therefore, any downward trend...
in the fall population would have to be attributed to known natural phenomena or a change in the habitat, rather than a low reproductive potential.

Harvest data are analyzed and form the basis for determining whether the management plans are correct or not. The sex and age information of the harvest would generally reflect the structure of the wild population if there were no hunter selectivity for size or sex. The percentage of categories varies from year to year, but during the fall 1975 season, adult males made up 10 percent of the harvest; adult females—27; juvenile males—33; and juvenile females—28. The young:adult ratio was 230:100. Adult hens compared to the 13-year average of 526:100. The low ratio may be a reflection of an underharvested population or a poor production. However, there were no indications of poor production in 1975. Most of the turkey populations in the United States are presently considered underharvested.

Weight information reveals the physical condition of the flock as the result of range conditions. It may also reveal disease or parasitic infestations in any individual flocks, or an unusually late hatch. Adult males average 18 pounds, juvenile males 12, adult females 10 and juvenile females 9 pounds during fall harvest. Unusually late hatch of some birds resulted in some light weights of 5 pounds in some year's fall harvest. Comparison of data of whole weight versus eviscerated weight indicates a factor of 12 percent can be used for the Merriam's species in the Pine Ridge. The largest bird recorded was 23.3 pounds eviscerated, or about 26 pounds whole weight. There have been heavier bird weights reported but these were suspected of being crossed with the domestic strain.

Crop content examinations confirm that wild turkeys are opportunists, omnivorous in habit, and voracious in appetite. Wild turkeys have been known to have a crop capacity of about 400 cubic centimeters (0.42 quart). This may occur when the birds come across some desirable and abundant food source. Usually, the birds spend much of their time feeding and therefore need not gorge themselves.

Harvest information shows that 87 percent of the successful hunters required 2 days or less to bag their birds during the 1975 fall season. Seventy-one percent of the harvest occurred on opening weekend with 2,011 hunters bagging 1,138 turkeys for 57 percent success.

During the spring of 1975, 1,875 shotgun hunters bagged 490 toms for a hunter success of 26 percent. Fifty-four percent of the harvest occurred on the first 2 days of the 16-day gobbler-only season.

During 1975 there were both spring and fall archery turkey seasons with 289 and 170 participants respectively. Hunter successes were 7 percent for the spring gobbler-only season, and 28 percent for fall. Successful archers expended an average of 2.7 days in the spring and 2.9 days in the fall. However, this is not a true measure of the total archery-hunter days the season offered. There were no data compiled concerning the number of days expended by the unsuccessful hunters, but personal contacts indicated a much higher effort than by successful hunters.

After the fall hunting season and when the turkeys are flocked together on their wintering areas, trapping for the purpose of marking birds for basic life history information gets underway. Turkeys at different locations in the Pine Ridge have been captured and wing marked with nylon streamers. The colorful material lays flat over the secondary covert area and is noticeable at a great distance. Traps of various types have been used, including box traps, wire funnel traps, a walk-in frame nylon netting trap, and cannon-net trap (projectile type).

During the winters of 1965 through 1973, 317 turkeys in the Pine Ridge were marked and released, of which 93 (29 percent) have been shot or found dead. Hens marked as juveniles were recovered an average of 5.3 miles from the trap sites as compared to other sex and age groups (young toms, adult hens, and adult toms) which traveled averages of 2.3 and 2.8 miles. One young hen was shot 19 miles from the trap site.

More recent work conducted along the Niobrara River has shown considerably greater movement of turkeys than in the Pine Ridge. Average recovery distance so far was 13 miles, with the longest traveler covering at least 29 miles. Dispersal of 43 miles (considering both directions) was observed within three months of the time of tagging. The greater movements along the Niobrara River are attributed to the comparatively narrow habitat as compared to the Pine Ridge.

A trapping and transplanting program was initiated in the winter of 1961. The Cottonwood Creek birds formed the parent stock for the greater portion of habitable turkey range in Nebraska. By 1963, turkeys had been released on all areas with natural stands of ponderosa pine. Releases along the Niobrara River met with good results, but those in the Wildcat Hills and Cheyenne escarpments were less successful.

In the Niobrara River releases, one flock in the eastern end ranged into areas made up almost exclusively of hardwoods. With this favorable indication of hardwood use, deciduous cover was considered for turkey releases. Some areas of marginal habitat were thus utilized for releases, and between 1963 and 1970, 19 such sites were stocked with 166 birds.

Increases occurred in most areas, regardless of habitat type, and peak numbers were reached within three reproduction years in these narrow habitat types. However, major declines resulted in all areas without ponderosa pine, and none of these releases resulted in more than a token population.

In one area of sparse timber cover, Merriam's turkeys crossed with game-farm stock, resulting in a comparatively successful establishment of birds. Previous attempts at releasing game-farm reared birds in Nebraska met only with failure, but apparently a hybridization of wild strain with game-farm birds was suitable in this type of habitat.

Ten wild-trapped eastern turkeys were released at Indian Cave State park which resulted in limited production but eventual failure. Many people enjoy just having the turkey around the old homestead. They are beneficial in their foraging for succulent insect life, so what grain they may pick up is quickly forgiven. During the winter, when the birds flock together and appear to barely eke out an existence, many well
meaning individuals soon offer grain to sustain them through the trying time. However, the only individual that benefits by this act is the soul who placed the grain out. He feels he has done something for the creatures, but actually he has done a great injustice to the turkey. The birds, being great opportunists, will not venture forth and "scratch" for their living and soon a problem of sanitation may arise. The birds that scratch for their living will be in better physical condition due to the large area they must cover, and will winter better because of the variety of food items they will consume.

Wild turkeys have been known to not feed during an 8-day storm, while birds held in captivity were allowed to go without any feed for 14 days without mortality. Therefore, an inactive flock during a snowstorm does not indicate inadequate winter food.

The well meaning individual should establish natural food areas near escape cover instead of placing feed out for the birds. Creating habitat is important, but holding on to what is there is more important since habitat cannot be created overnight.

With a good place to live that provides adequate food, cover, water and living space, the Merriam's wild turkey should be able to reward us with his presence for a long time. To insure the success of the turkey program, we must have an informed and aware public. Without the efforts of land operators, the protection of laws and regulations, and the awareness of the public, no management program can succeed.
Preplanning is the key to successful turkey hunting

Many times a certain experienced turkey hunter that I know has been asked, “How did you come by your bird?” His reply was always, “Just plain luck!” It was always thought that this turkey hunter did not want to reveal his techniques and secrets. However, after getting to know this hunter, it was apparent that it was knowledge that helped form his luck. Turkey habits and behavioral characteristics were learned, he studied and practiced the different calls and communicating sounds of the species, learned the capabilities and became adept with the weapons used, and became thoroughly familiar with the area he planned to hunt.

Since conditions vary in the field and no single method always works on turkey, only hints to a successful turkey hunt will be suggested here.

During the pre-season preparation period, the hunter should obtain all the reading material he can obtain and study it. Popularized magazine stories can certainly help, but usually contain very little information on species behavior, food, nesting and cover. Obtain several different types of turkey calling devices, and along with instructional reading material and recordings, practice with them to develop expertise and confidence. The latter is very important when you are in the field. After selecting a hunting area, obtain detailed maps which will help locate yourself in relation to the surrounding terrain. Planning your trip can be easier if you inquire around for someone who is familiar with the chosen area. Fortunate is the one who can get an experienced hunter to take him afield to put his book learning to practical use.

Selecting the turkey gun is a matter of personal taste, since any legal gauge and shot size will do the job. Remember, the large bird can absorb quite a few pellets in the body, and the heavy wing feathers may shield the bird, but 2 or 3 pellets in the head and neck will finish the quarry. The 12-gauge shotgun loaded with No. 6 shot backed with No. 4 is the choice of many hunters.

When the season approaches, plan on arriving in the chosen area a day or two early to study the lay of the land and to look for turkey sign. After obtaining permission to hunt on pri-
vately owned land, the hunter should identify the limits of the property. This can be done at the same time you are looking for turkey sign, such as tracks around wet places, droppings in feeding and loafing areas, roost tree sites, and tell-tale signs of feathers.

During the fall when the turkeys are in family groups, the flush and call method is quite effective. Since the birds are very gregarious and have a strong bond for each other, they can be lured back with a turkey calling device. The hen, upon having her family scattered, will attempt to re-group the birds and the young birds will respond to the call.

Some hunters will locate themselves in turkey territories and will call in an attempt to lure birds that have been scattered by other hunters.

The drive method is used by hunters working together through an area pushing the birds ahead of them to stationary hunters on the theory that turkeys prefer to walk or run instead of flying. Even pass shooting opportunities occur in this type of hunting.

Roosting area locations are searched for by some hunters who will try to call the bird in to them. This is similar to calling and also flush and call. Shooting the birds off their roost trees is not very sporting and some hunters feel this is a good way to lose a flock in an area.

Stalking is very difficult and tests the hunter's abilities in woodcraft, trailing, and knowledge of the species.

Still hunting is for the hunter who can sit quietly and concealed for many hours waiting for the turkey to come down a well traveled trail.

Regardless of which method is used to hunt the wild turkey, knowledge of the terrain and of the species will play major roles in outwitting the trophy. The most challenging and thrilling form of turkey hunting is in the spring gobbler-only season. In the Pine Ridge area, spring gobbler-only hunters have scored 25 percent compared to 55 percent during the fall any-turkey season.

When the gobblers first announce their vigor and dominance from their roost trees in the early dawn gloom, half an hour before sunrise or earlier, the hunter's pulse will quicken and he will wonder if he arrived too late. The course of action might be to move closer or sit still, call now or call later, call often or not. All these thoughts will race through the hunter's mind while the tom continues his gobbling in the early morning light. Suddenly, the whirring of his large wings will indicate that he has left his roost to join the group of hens on his strutting ground. Once he has joined the females, calling the tom into gun range will be difficult.

Often, the toms will quit gobbling soon after leaving their roost. Locating the birds under these conditions will be difficult, but the patient hunter can remain in a likely spot and utilize his call or can start his stalk. Turkeys are creatures of habit, so the observant hunter records the time and place of each event and tries to revisit the area.

Calling devices may be wing-bone type, slate scratch type, box type, diaphragm mouth type, or any other. The best type, however, is one that the hunter is comfortable and confident with. Many find the box type with a large friction paddle the easiest to use.

Whichever is used, the hunter may be fortunate and see the deliberate approach of the proud bird, or often as not, may not notice the approach from his blind side. When this "moment of truth" presents itself, lucky is the hunter who is capable of controlling himself to select the most vulnerable spot of the large bird, the small head and neck region.

Even as the large tom lays on the ground, the hunter will share the many sentiments that have been whispered before him: "Gone is a monarch." The hunter, almost regretting the act of silencing a king, rejoices upon hearing several clear calls in the forest. He quickly recalls the philosophy of wildlife management: "...wildlife is a renewable natural resource, and if managed wisely can be cropped annually without depleting the stock..."

Text by Harvey Suetsugu

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**History of Nebraska's Turkey Harvest**

Wild turkeys are a renewable natural resource, and can be cropped annually without depleting the stock. Nebraska's first season was held in the fall of 1962. Two years later, a spring season was added. The lower success of a tom-only spring hunt, compared with either-sex hunting in the fall, is evident on the graph.

During the 1975 fall season, only 10 percent of the birds shot were adult toms; 27 percent were adult hens and 63 percent were young-of-the-year. The large annual fluctuation is reflective of changes in the number of permits issued.