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Recommended Citation

Flake, Lester D. and Ashton, Diana E., "The Wild Turkey in South Dakota's Prairie Woodlands" (1992). *SDSU Extension Fact Sheets*. Paper 64.
http://openprairie.sdstate.edu/extension_fact/64

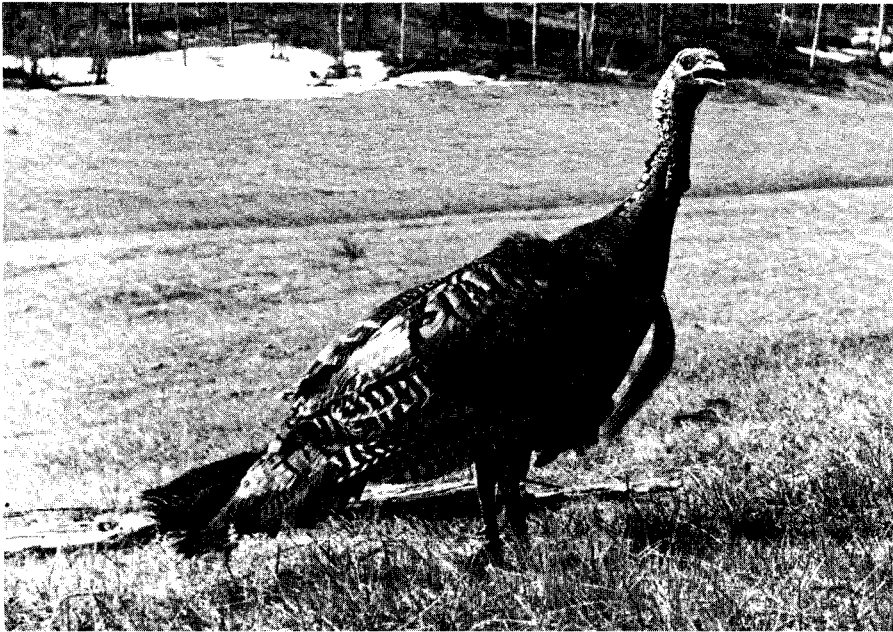
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FS 885

THE
WILD TURKEY
IN SOUTH DAKOTA'S
PRAIRIE WOODLANDS

Cooperative Extension Service
South Dakota State University
U.S. Department of Agriculture





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THE WILD TURKEY IN SOUTH DAKOTA'S PRAIRIE WOODLANDS

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It's striking appearance and wary behavior make the wild turkey a highly prized game bird. Controlled hunting does not eliminate the wild turkey; destruction of its habitat does. South Dakota lost all of its wild turkeys once, in the early part of the century. Turkeys have been restocked, and with careful management, we won't lose them again.

A wild turkey is a magnificent bird. The body of the male is covered with dark, velvety black plumage with brilliant reflections of coppery bronze and green. Females are smaller, generally have lighter feath-

ers with less iridescence, and have cream colored edges on their breast and belly feathers.

Adult males have odd appendages. The beard is a bristle-like appendage of feathers on the breast. Males possess spurs, a wattle (a fleshy lobe hanging from the throat or chin), a caruncle (a wart-like projection of the skin on the upper part of the forehead) and a leader (a pencil-like appendage attached near the upper edge of the bill).

Wild turkeys are found in every state except Alaska, including 10 states outside their ancestral range.

Although six subspecies of wild turkey occur in North America, the eastern, Merriam's, and the Rio Grande are the primary subspecies in the Great Plains. Each subspecies is usually confined to one climatic region, although there may be intermediate areas where turkeys grade into one another.

Differences among subspecies are genetic and are selected by the environment because they have survival value, just as desirable characteristics of domestic varieties are selected and perpetuated by man through captive breeding.

In general, the eastern subspecies has much darker brown tips on the tail feathers than the whitish-buff of the Merriam's subspecies. The Rio Grande subspecies is intermediate in color. While color patterns are characteristic of each subspecies, color of individuals within subspecies is quite variable and can make identification difficult on visual characteristics alone.

Eastern wild turkeys once occupied south-central and southeastern South Dakota but were wiped out by the early 1900s because of unrestricted exploitation by early settlers. In the late 1940s and early 1950s, the South Dakota Department of Game, Fish and Parks (GFP) brought wild-trapped Merriam's turkeys into the Black Hills area. Since then, the GFP has moved turkeys from the Black Hills into the woodland draw and riparian (streamside) habitats along the Missouri River breaks and its western tributaries.

Wild turkeys in South Dakota's prairie woodlands largely represent the Merriam's subspecies, although Rio Grande subspecies releases were made in some areas, particularly in the Roberts and Marshall

counties area. Some landowners may also have made smaller releases of partially domesticated strains with variable genetic backgrounds.

The genetic composition of prairie turkey populations in South Dakota is undoubtedly mixed in many cases; however, outside of Roberts and Marshall counties, birds tend toward a strong Merriam's appearance.

Wild turkeys are currently found in all South Dakota counties west of the Missouri River, counties along the Missouri River south of Pierre, along the lower portions of the Big Sioux to Newton Hills State Park, the lower James River, the Wessington Hills area, and Roberts and Marshall counties. The largest populations in prairie woodlands are in the Gregory-Tripp counties area.

Crossbreeding with domestic strains of wild turkeys occurs easily. It should be strongly discouraged.

Crossbreeding with domestic birds reduces the ability of offspring to survive in the wild. Extreme cases of crossbreeding may cause a once-thriving wild population to dwindle and disappear from an area since the genetic makeup and survivability of the birds has been altered.

Wild turkeys released by the GFP have been extremely successful in establishing themselves. The present population in South Dakota's prairie woodlands provides a harvestable surplus. Hunting by permit for both fall turkeys and spring gobblers began in the prairies in 1980 and continues in the 1990s.

Habitat requirements

Wild turkeys need space. Summer home ranges of adult males and females without broods in south-

central South Dakota averaged 867 and 352 acres, respectively. Winter home ranges were about half as large.

Size of home range for daily activities is determined by the proximity of food, water, cover, and roosting sites. The closer an area comes to optimum conditions, the smaller, within limits, the home range will be.

Food

Wild turkeys are opportunistic feeders and eat a variety of foods. They feed primarily on the ground, usually for lengthy periods immediately after leaving the roost or before going to roost.

Foods can be divided into five groups: nuts (mast), fruits, seeds, greens, and insects.

The primary mast food of the prairie populations is the acorn of bur oak in years when the acorn crop is successful. Ponderosa pine seeds are extremely important in the Black Hills and probably in other pine areas such as the Harding County buttes. Fruits include hackberry, hawthorn, rose hips, grape, sumac, juniper, snowberry, juneberry, poison ivy, and choke cherry. Seeds come from ragweeds, sunflowers, grasses, forbs, sedges, and agricultural crops such as corn, oats, milo, sorghum, and soybeans. Grasses, annual and perennial forbs such as dandelion, domestic wheat, and even mosses provide greens. Insects include grasshoppers, ground beetles, crickets, ants, flies, caterpillars, and spiders.

Water

Wild turkeys get their water from streams, springs, lakes, ponds, or sloughs as well as from snow, dew, succulent green feed, insects, and water trapped in depressions or animal tracks. Wild turkeys often seek

water after leaving the roost. During hot, dry periods, hens may lead young to water twice each day.

Cover

Suitable plant cover determines the success of a variety of life activities—hiding, escaping, nesting, and brood rearing.

Even breeding and feeding, which often occur in more open sites, are dependent on the availability of nearby escape cover in the form of forest and shrub understory.

Riparian and other woodland areas with mature trees that provide mast and roosting sites and that are intermixed with shrubs, openings, and grasslands or croplands provide much of the cover necessary for wild turkey survival.

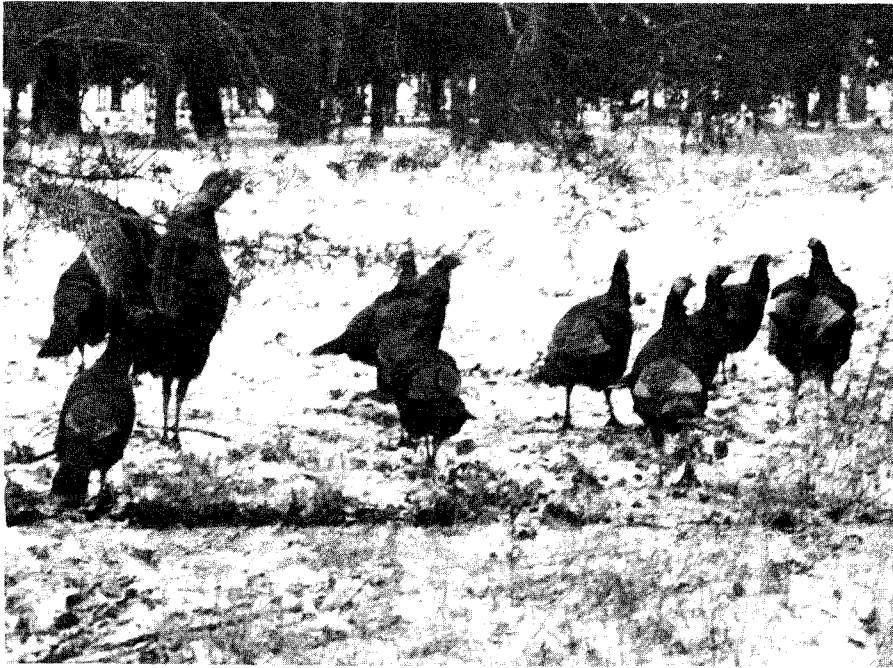
Roost sites

Wild turkeys need large trees for roosting (perching at night), especially during the winter when the birds are exposed to greater environmental stress.

Major roost sites are occupied by several birds for a few days to several months. Other roost sites are used sporadically by only a few birds. In general, wild turkeys roost in large trees in secluded areas surrounded by forest. An adjacent open area is necessary for ascending and descending the roost.

Large cottonwood trees are important primary roosting sites in the prairie woodlands, with one tree sometimes holding a dozen or more birds.

Stands of basswood, green ash, and American elm can provide multiple or conglomerate type roost areas, with small groups of birds dispersed



Wild turkeys are more tolerant of human disturbance than we once thought. In fact, they come out of the river bottoms and wooded draws to pastures and harvested fields to glean whatever may be available, since they are opportunistic feeders. They will often come to cattle feed. If wild turkeys are around and you have a flock of domestic turkeys, keep the tame birds penned. Crossbreeding is one of the surest ways known to take the "wild" out of wild turkeys.

among many separate trees in an area 100 yards or so in diameter. Some conglomerate roost areas in the fall and winter may hold 50 or more turkeys.

Life history

Overwintering

Deep snow covers food and reduces wild turkey mobility. When accompanied by below-normal temperatures, a heavy snowstorm can lead to substantial winter mortality.

Food availability is critical for winter survival. Wild turkeys increase in weight in the late fall and throughout the winter if abundant high-energy food is available, reaching their maximum weights prior to mating. In late winter, males develop a spongy layer of fat

in the breast region; presumably this fat serves as an energy reservoir for mating since males feed little during breeding season.

Breeding

In spring, usually March to April, winter flocks break up.

The toms have already begun gobbling in late winter long before breeding season starts. They continue and increase calling through the breeding season. Breeding season chronology is controlled largely by photoperiod (daylength), but weather causes changes in levels of gobbling, breeding, and nesting activity.

Gobbling begins on the roost at dawn and continues on the ground throughout daybreak. Some turkeys continue gobbling throughout the day and into evening roosting.

Toms will strut long before the hens are interested. The strutting ground is usually an open area and can be used by more than one tom. Turkeys are polygynous, with one adult male often breeding several hens. The mating system is described as a roaming harem.

Turkeys generally begin nesting at age 2, although in high quality habitats or newly established populations breeding regularly occurs by age 1.

Nesting

Turkeys nest on the ground in dense vegetative cover, often with a canopy which provides vertical and horizontal visual obstruction from predators. Nesting begins from mid-April to May. In south-central South Dakota turkeys initiated egg laying over an 8-week period from mid-April to mid-June.

Early nesting hens generally select shrub patches within woodlands for nests. Woodlands provide both overhead and ground level concealment as well as escape routes for nesting hens.

Most woodland nests are under gooseberry, chokecherry, bur oak saplings, eastern red cedar (juniper), and American plum or similar type cover. Turkeys will even nest in poison ivy.

Mid to late nesting hens, including hens reneating after their first clutch was destroyed, often nest in shrub patches within the adjacent grasslands. Grassland nests are seldom more than 200 yards from forest habitat.

Grassland nests will be in western snowberry, American plum, and sumac, or tall grass or forb areas that are not hayed or grazed. Grassland, alfalfa, or grass hayland can also pro-

vide nesting cover if deferred from grazing or haying until mid-July.

The hen makes a shallow depression and lays one egg about every 25 hours but only during daylight; the first egg is usually laid early in the morning. A 26-day incubation starts after the clutch is complete.

In Gregory County, most (76%) adult hens initiated nests compared to only 16% of yearling females. Studies have generally shown that 35-45% of hens that nest will successfully hatch their clutch. In Gregory County, 44% of the hens that attempted to nest successfully hatched one or more eggs. Clutch size averages about 11 eggs but may vary considerably.

In some cases of nest destruction, hens will attempt to reneest, but we have no records of wild turkeys rearing more than one brood at this latitude.

Brood rearing

Hens either remain near the nesting area or move their broods a mile or more to a brood rearing site. In either case, after hatching and drying of the chicks (within about 24 hours) the nest is abandoned.

Home range of the brood increases with brood age. In south-central South Dakota, 0- to 4-week-old brood home ranges averaged 104 acres and older brood home ranges averaged 313 acres. Optimal brood rearing habitat is a mixture of forested cover with well interspersed openings of grasses and forbs. If grasses and forbs are too sparse or too dense (making it difficult for poults to walk), the opening becomes less valuable to broods.

Broods use grassland sites near forest edges, with the youngest remaining

closer to the woodland edge for quick escape from predators. Young poults also show a tendency to feed under a light canopy of sumac where the understory is open and insects abundant. Such sites also may provide extra protection from hawks due to the overhead concealment. Older broods are better adapted to exploit larger forest openings, since they can reach protective cover more readily.

Poults have unusually high protein requirements. The grasses and forbs in forest openings provide a great abundance of insects and other invertebrates.

Both grazed and hayed areas are used for brood rearing in South Dakota. Grasshoppers, a primary food for poults, are often abundant and accessible in these areas.

Poults can fly up to low branches for roosting as soon as they are 9 days old. Until they reach flight stage the hen broods them on the ground at night.

When danger threatens, the hen utters a cry that sends poults hiding. She then may remain motionless to escape detection, stay in the near vicinity making alarm calls, or sometimes feign injury to distract predators from her brood.

Predation

Predation on adult turkeys is not a major source of mortality. Bobcats, great horned owls, golden eagles, and coyotes have all been known to kill adult wild turkeys.

Predation losses are greatest during the nesting and brood rearing seasons. Crows are the major nest predators in many areas, but the extent of predation is related to quality of nesting cover and the degree to which nests are hidden.

Coyotes, skunks, raccoons, red fox, possum, and domestic or feral dogs and cats are all potential nest and/or poult predators. Several hawks will also take poults.

Snakes will sometimes take turkey eggs, but it is not uncommon for adult turkeys to discover a rattlesnake and kill it.

In general, wild turkeys are relatively successful in nesting and rearing broods as long as they have good nesting and escape cover. But wild-strain turkeys reared in captivity and then released have severe egg and poult losses due to predation when they attempt to nest in the wild; they also have much higher adult losses due to predation.

Management opportunities

Management of wild turkeys needs to focus on both habitat and population levels.

Population levels influence such things as age at first nesting, percentage of adult hens attempting to nest, disease, crowding, and possible agricultural damage. Good habitat is probably largely responsible for the current population size. Weather, particularly severe drought, reduces reproductive success and depresses populations temporarily.

We can assist overwintering survival by providing roost sites and nearby food plots or waste grain (including picked but untilled crops such as corn). We can provide nesting cover in the spring and allow a regulated harvest of turkeys.

Increasing overwinter survival

Starvation of wild turkeys has been reported where deep snow is present

for extended periods. Low temperatures add to the problem. In deep snow, mobility is reduced and feeding is restricted to the immediate area of the roost.

During severe winters in the upper midwest the greatest survival may occur in populations roosting and living adjacent to farms and ranches. Food plots of standing corn, sorghum, or other crops near forest areas can be very valuable to overwintering birds. Other crop residues such as wheat and oats will also be used.

Acorn production for most oak species first occurs at 20-25 years of age, with optimum production at 50-125 years. For bur oak, initial mast production normally occurs at 35 years, but sometimes as early as 20 years.

In South Dakota, acorn production varies yearly and is not a dependable food source. Maintaining mature stands of trees is vital to insure mast availability. Fruits of Russian olive, hackberry, sumac, and of other trees and shrubs are also eaten by wild turkeys.

Wild turkeys will often come to cattle feed. This can lead to problems for the rancher. Large numbers of turkeys wintering near agricultural facilities can damage or cause spoilage of silage piles and other food supplies reserved for cattle.

Since turkeys tend to eat what is available, maintaining various food sources is critical.

Preserving nesting habitat

Private landowners or professional wildlife managers have several ways to improve turkey nesting habitat.

Existing patches of shrubs or saplings (sumac, snowberry, plum, choke cherry, for example) can be preserved within grassland areas. Extensive shrub patches can be broken up into smaller patches, improving grass production at the same time. Existing woodlands can be protected from overgrazing that can destroy forest regeneration or the shrub understory. Where possible, haying can be delayed until late June or preferably mid-July to protect nesting hens.

Secure nesting cover is probably more critical than brood rearing cover in most areas.

Pasture and hayland edges near woodland are often excellent places for young turkeys to catch grasshoppers and other insects. Row crops are much less valuable as brood habitat than pasture or hayland and in most cases have been treated with pesticides.

In South Dakota, much of the wild turkey habitat is in cattle ranching areas. Wild turkeys seem quite compatible with ranching, especially if grazing practices are used which maintain grasslands in good to excellent condition. Cattle and wild turkeys both benefit from these practices. Excessive grazing leaves little vegetation to support the invertebrates that broods feed upon and in the long run will hurt the carrying capacity for cattle as well.

Preserving wild populations

Free-ranging domestic turkeys are a threat to wild turkey populations because of hybridization and disease. Crossbreeding reduces the ability of the wild flock to survive and increases dependence on humans. Domestic turkeys should not be allowed to associate in any way with the wild flocks.

Many of the early failures in restocking wild turkeys in the United States were related to serious crossbreeding problems with domestic birds. The current population in Roberts and Marshall counties, now at very low levels, is an example of a population suffering from serious crossbreeding with domestic turkeys.

The only way to have truly wild turkeys is through trap and transfer from other wild populations, normally by state wildlife agencies. The National Wild Turkey Federation makes it clear that "wild turkeys are birds from wild native genetic stock living under the control of the laws of nature."

Turkeys advertised in various game magazines, regardless of their genetic background, have been reared in captivity or semidomesticated conditions and are not truly wild. They should not be released. The South Dakota GFP has released wild turkeys into almost all of the suitable habitat in South Dakota.

Truly wild turkeys, incubated and reared in the wild by a wild female, have the physiological, physical, and behavioral characteristics of wild turkeys. Hunters have long suspected that they're smarter than domestic birds. In fact, their brains and the pituitary and adrenal glands that influence survival do show physiological differences from those of domestic turkeys. Domestic birds have been selectively bred for growth rather than for intelligence and survival.

Domestic turkeys also tend to have shorter legs and bigger bodies. Wild adult male Merriam's and eastern subspecies average 17.8 and 18.8 pounds, respectively. The record eastern gobbler weighed 33.5 pounds and was killed in 1987 in

Arkansas; a record 31.5-pound eastern turkey was killed in Iowa in 1991. A Rio Grande or Merriam's in the 25-pound category would easily make the record books.

Regulating harvest

Presently, both fall and spring turkey hunting seasons are held in prairie units in all or a portion of 29 counties in South Dakota. Both seasons are approximately 1 month long. The spring season allows the taking of one or two gobblers, depending on the hunting unit.

South Dakota residents (12 years and older) can apply for a license in any unit. A limited number of licenses are available to nonresidents. Eligible applicants may have additional licenses on a first-come first-served basis if there are extras after the initial drawing. Applicants are selected at random by computer lottery. In each prairie turkey unit, half of the licenses are reserved for resident landowners/operators who own and live on or operate at least 160 acres within the unit.

The safest and possibly the most enjoyable way to hunt turkeys is to call them within gun range.

Be very careful. Hunters usually wear camouflage. Turkey hunting accidents and/or fatalities occur in the United States each year, usually due to incorrect identification of the target. Turkey callers should avoid or rarely use the gobble call, as it can draw other hunters to the caller.

Obtain permission in advance on private land. Courtesy to the landowner and respect for property and the land will help keep hunting opportunities available in the future.

The future of the wild turkey in South Dakota

Wild turkeys were formerly thought to require large, undisturbed, isolated tracts of woodlands. We know now, however, that they can adapt to a variety of habitats and are more tolerant of human disturbance than once believed. The riparian forests and woodland draws of South Dakota have proven, in many cases, to be suitable habitats for these magnificent birds.

Additional expansion along the Big Sioux and James rivers is possible, although crosses with domestic

turkeys could be a problem in these areas. Reintroduction of the eastern wild turkey, currently so successful in limited woodland areas in Iowa, is being considered as an option by the GFP in suitable habitats in eastern portions of the state.

The future of the wild turkey in South Dakota is good. The continued interest, involvement, and support of landowners, the public, and wildlife professionals will provide future generations with the sight, sound, and challenge of the wild turkey.

This publication funded by Renewable Resource Extension Act (RREA).

Photos: South Dakota Game, Fish and Parks Commission.



Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the USDA. Mylo A. Hellickson, Director of CES, SDSU, Brookings. Educational programs and materials offered without regard to age, race, color, religion, sex, handicap, or national origin. An Equal Opportunity Employer.

This publication was prepared by the Ag Communications Department, SDSU, and printed at the SDSU Printing Laboratory. 7,500 printed at a cost of 10.6¢ each, November 1992. FS885