Habitat Needs and Developments for Wild Turkeys

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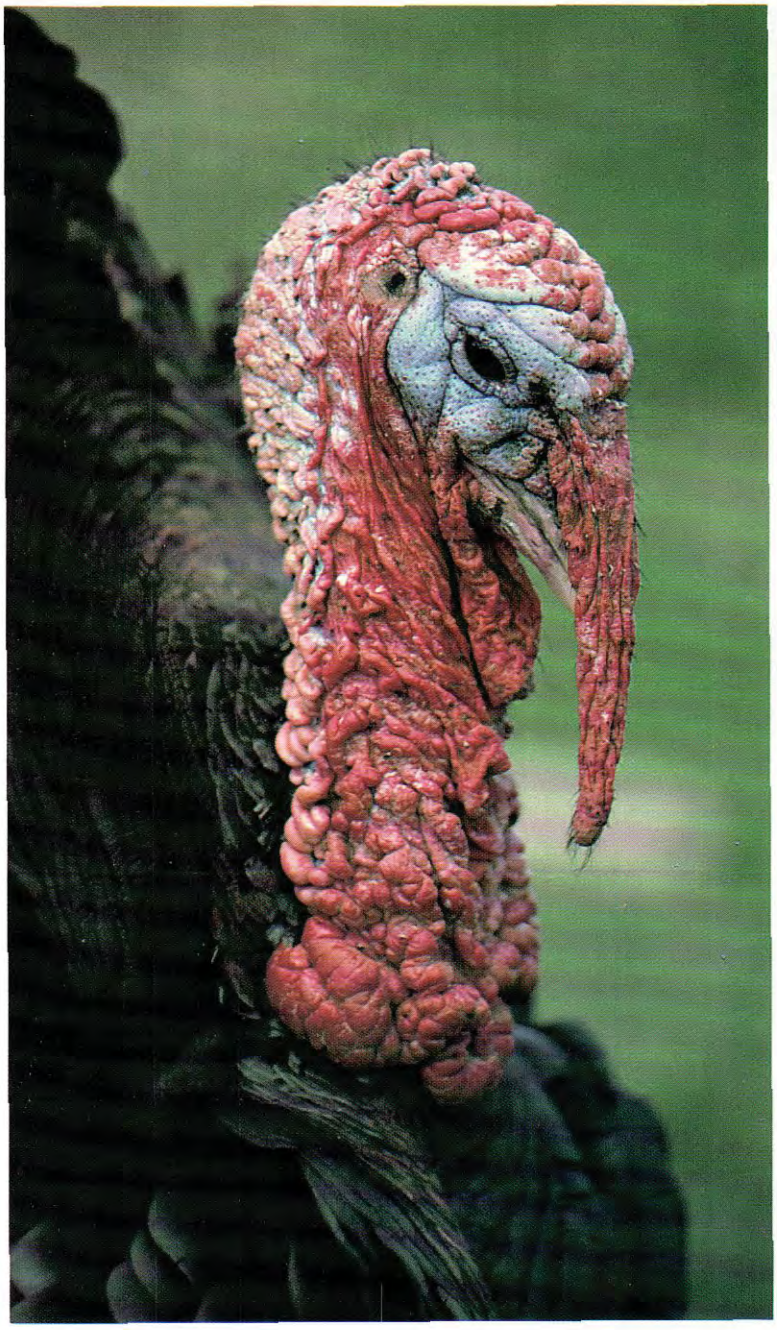

The wild turkey (Meleagris gallopavo) is considered by many to be one of the most desirable game birds in North America. The admiration Benjamin Franklin had for wild turkeys prompted him to promote it as our national bird. It lost in the voting, of course, to the bald eagle. But the wild turkey is indeed worthy of such recognition. Classified as a big game animal in some states, the wild turkey is regarded as one of the most sought-after trophy animals in North America.

It seems difficult to imagine that, at the turn of this century, the wild turkey sat perched on the edge of extinction. By 1920, only 20 of 38 states in ancestral range still supported a wild turkey population. But through protection and careful management, the wild turkey has come back from the brink. Today, wild turkeys have been reintroduced or introduced into all of the lower 48 states and Hawaii. The recovery of the wild turkey is now one of the greatest success stories in wildlife management history.

Wyoming's Wild Turkeys

Many people are surprised to learn that wild turkeys are not native to Wyoming. The original range of wild turkeys in the United States was south of a line extending from southern Maine and Ontario through central New York and Michigan, across southern Wisconsin and Minnesota, southeastern South Dakota, northeastern Colorado, northwestern New Mexico, central Arizona, and southeast into Mexico. The ances-

Some people call wild turkeys ugly. Everyone acknowledges that they are odd looking. Their heads are fleshy and rugose, and sometimes brightly colored—red and white and blue.

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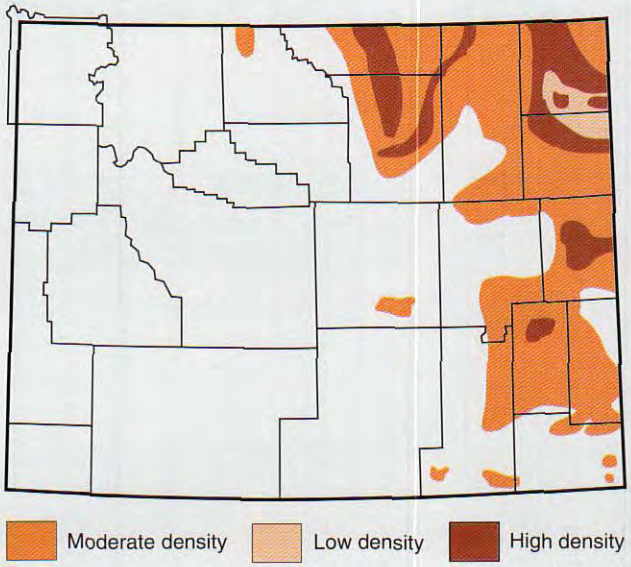

Most of Wyoming's wild turkeys are found in the eastern half of the state. Crook, Weston, Niobrara, Platte, Campbell, Johnson, and Sheridan counties hold the greatest concentrations of birds. However, turkeys are also found in Goshen, Laramie, Albany, Converse, Big Horn, and Natrona counties.

tral distribution of the Merriam's (*M. g. merriami*) subspecies extended through the mountainous ponderosa pine forests of Colorado, New Mexico, and Arizona. Wyoming's present wild turkey population resulted from introductions of this subspecies. The initial flock of nine hens and six toms was acquired from New Mexico in 1935 in exchange for sage grouse. These birds were released near Cottonwood Creek in western Platte County. In 1936, this turkey population was estimated at 75 and, by 1940, had increased to 400 birds.

In 1950, the Wyoming Game and Fish Department initiated a program of live-trapping and transplanting turkeys from the original introduction site to similar habitats in Carbon, Crook, Big Horn, Johnson, Park, Platte, Sheridan, and Washakie counties. Prior to 1950, repeated stocking failures had occurred when farm-reared turkeys were released. An additional 26 turkeys (13 hens and 13 toms) were obtained from New Mexico in 1951 in exchange for elk and released near Redwater Creek in the Black Hills.

The decade of the Fifties was an intense period of wild turkey transplants and introductions into suitable habitat throughout Wyoming. Turkeys responded well and are now distributed throughout the east and northeast portions of the state, primarily in the Black Hills, near Buffalo, and around Laramie Peak (*Figure*).

Wild Turkey Life History

Wild turkeys are a relatively long-lived, gallinaceous bird. A study conducted near Laramie Peak gave a very conservative estimate of 30.2 months (2.5 years) as an average life span with some turkeys living more than 56 months (4.5 years). Turkeys are physically capable of breeding after one year of age; however, courtship behavior by adult toms usually precludes yearling toms from breeding. Yearling hens have lower nesting and hatching success than do adult hens, likely due to their inexperience at selecting suitable nest sites.

Turkeys typically winter in large flocks with hens and their grown broods segregated from toms. Spring break-up occurs in March or early April with hens moving off wintering areas to breed and select nest sites. These sites may be up to 12 miles from the wintering area. Hens begin laying a clutch of seven to 14 eggs as early as April 10, with an average incubation period of 28 days. If initial nests are lost to predation or abandoned, some hens will re-nest.

Hatching associated with initial nest attempts usually occurs from May 24 to June 14. After hatching, hens move their broods to riparian areas (vegetation along creeks or stream beds) and wet meadows. Young turkeys (poults) need a protein-rich diet during their first 10 to 12 days. The best source of protein is insects, which are abundant in these moist areas. For the first 14 to 19 days after hatching, hens and poults roost on the ground. Once poults are able to fly, each hen leads her brood up to the trees to roost. Two to three weeks after hatching, hens with poults begin to congregate with other hens (either barren or with poults). Family groups of up to five hens and 34 poults have been seen in the Laramie Peak area. A poult:hen ratio of 7:1 is typical in early summer, but poult survival usually declines and stabilizes near 35 percent in late summer. Family groups converge on wintering areas as early as September. Depending on weather and food availability, a family group may move back into timber and/or riparian areas until weather conditions force them back to wintering sites. And the cycle repeats.

Wild turkeys are highly social. They often live together in groups that include several dozen birds.

Table. Seasonal diet items of the Merriam's (*M. g. merriami)* turkey ranked in descending order of importance.

SPRING DIET ITEMS

Potentilla/Geum
Grass seed and plant parts
Insects
Melilotus/Medicago (Sweetclover/Alfalfa)
Compositae/Sunflower family
Poa (Bluegrass)
Vicia (Vetch)

SUMMER DIET ITEMS

Bromus (Brome grass)
Grass seed and plant parts
Insects
Arctostaphylos (Kinnikinnik)
Avena (oats)
Compositae/Sunflower family

FALL DIET ITEMS

Pinus seed (Ponderosa pine seed)
Melilotus/Medicago (Sweetclover/Alfalfa)
Grass seed and plant parts
Crataegus seed (Hawthorn)
Avena (Oats)
Carex (Sedge)
Arctostaphylos (Kinnikinnik)
Insects

WINTER DIET ITEMS

Pinus seed (Ponderosa pine seed)
Grass seed and plant parts
Corn
Triticum
Carex (Sedge)
Poa (Bluegrass)

Wild Turkey Diets

Wild turkeys are opportunistic feeders, consuming seeds and leaves from a variety of grasses, forbs, shrubs, cultivated crops, and trees along with insects, if available. Arthropods (such as beetles and grasshoppers) are a major diet item during the spring and summer. They are consumed at varying rates during fall and winter, depending on availability. A variety of plants and plant parts are consumed during different seasons of the year, depending on their availability (*Table).* Turkeys consume intermediate wheatgrass, sedges, bluegrass, and grass and shrub seeds year-round.

The fruit of fleshy hawthorn, rose hips, kinnikinnik, snowberry, and other shrubs which drop fruit in August or September constitute a major component of wild turkey fall diets. Turkeys have been observed resting in hawthorn bushes eating large quantities of hawthorn berries or picking for berries beneath these shrubs.

Grass and grass seed, sedges, pine seeds, and other plant parts account for approximately 15 to 40 percent of wild turkey winter diets. Wild rose hips or other persistent fruits, acorns, wheat, oats, and corn (if available) are also consumed during this period. In deep snow, these items may not be available, forcing turkeys to seek alternate food sources in other areas, including feedlots and ranch yards.

Wild Turkey Habitat Management

NESTING HABITAT—Hens establish nests on steep, rocky, east or northeast slopes with dense ground vegetation (14 to 16 inches high) in the immediate vicinity of the nest site. Nests may be at the bases of large trees, in juniper bushes, next to large rock walls or outcrops, or in pine slash. Nests are usually located in timber stands containing 225 trees per acre with an average tree diameter of 11 inches. Nests are often on slopes of nearly 50 percent and typically within one-quarter mile of an open water

source. These areas should be protected from human disturbance during the nesting season as hens will abandon nests if approached too closely.

GROUND ROOST HABITAT—Their inability to fly makes young poults highly susceptible to predation during their first few days of life. Thus, the maintenance of high-quality roost habitat on the ground is critical to the well-being of a wild turkey population. Hens with broods often use large rock outcrops within ponderosa pine forests as ground roost sites. The large rocks possibly help the hen to maintain both her and the poults' body temperature during cool spring nights. These sites typically have nearly 100 tree stems per acre, an average tree diameter of 12 inches, and a slope of nearly 60 percent. Overhead cover appears to be required at ground roost sites. Removing vegetation from these rocky areas will limit their value as ground roost sites.

TREE ROOST HABITAT—Wild turkeys roost in trees to avoid ground-dwelling predators and prefer stands of ponderosa pine or cottonwood for this activity. Roost trees are usually large mature or over-mature trees with horizontal branches spaced 18 inches or more apart. Lack of suitable roost trees can limit this species' seasonal distribution and habitat use. For instance, winter roost sites need to be within one-half mile of a reliable food source.

Roost tree selection varies depending on the season of year. Spring and summer roost sites are typically characterized by an average tree diameter of 15 inches with a tree stem density of nearly 340 trees per acre. Fall roost sites generally have tree diameters averaging 14.5 with 640 trees per acre. Winter roost sites typically have tree diameters averaging 13.5 inches and a tree stem density of 560 trees per acre.

Several large-diameter, open-crown trees in a fairly open stand will serve as ideal summer roost sites, while five to ten large-diameter, open-crown trees in a dense stand will serve as ideal winter roost sites. High-quality turkey habitat includes both roost site types. Individual, large-diameter, open-crown trees separated from continuous stands of timber are not good roost trees!

RIPARIAN AREA (stream bottom) HABITAT—The importance of riparian zones to turkeys can not be overstated. Turkeys use stream bottoms extensively during spring and summer and only slightly less during fall. Ideal turkey riparian areas contain interspersed trees and shrubs

with a grass understory and water during winter months. Trees and shrubs provide loafing sites, seeds, and fall mast crops, and grass provides succulent greens in the spring, harbors insects for poults in early summer, and produces seeds in late summer.

Cattle grazing in riparian areas often removes vegetation required by turkey broods for cover and food. If degradation of riparian zones occurs, poult survival can drop well below 35 percent. Ideally, cattle should not be allowed into riparian areas used by turkey broods until July 1. This will allow poults sufficient post-hatch time to become strong enough to travel when displaced by livestock. This practice also insures that poults will be past the critical 12- to 14-day-old stage when a protein-rich (insect) diet is essential for survival. The July 1 turnout date may still cause problems for hens that re-nest and subsequent late hatches.

An option which disperses wild turkeys and provides scattered winter food resources involves limiting cattle grazing on at least part of a riparian area to allow grasses to mature and drop seed. This rest-rotation grazing plan allows individual parcels of land to rebound from grazing pressure. Forage production for turkeys will greatly increase on a parcel of land rested for two years and then grazed during alternating years.

Food production for wild turkeys can be further enhanced through the development of food plots. It is very important to disperse food plots over areas accessible to turkeys during winter months. Deep snow hinders turkey movements, and the birds rarely travel great distances overland when these snow conditions exist. Plots should also be established close to suitable winter roost sites.

Food plots may include dryland varieties of grains such as oats, millet, sorghum, and/or corn. Planting short-season, drought-resistant grain varieties at appropriate sites greatly increases forage production for wild turkeys. As an alternative to food plots, landowners raising small grain or row crops can leave strips of oats, wheat, rye, or corn for wild turkeys during winter months.

Because of their contribution to turkey diets in the fall and winter (*Table*), shrub species such as fleshy hawthorn, wild rose, snowberry, and chokecherry should be carefully managed. Controlled cattle grazing, prescribed burning, or mechanical means can improve fruit and mast production, thus enhancing the winter diet of turkeys.

The Merriam's wild turkey has shown it has the ability to adapt to a variety of Wyoming habitats. If wildlife managers can continue to find ways to provide brood-rearing habitat and winter food, wild turkeys will continue to thrive in the Equality State.

TIMBER MANAGEMENT—Management plans that call for large areas of clear-cutting to "improve" turkey habitat are counter-productive. In over 1,200 turkey observations near Laramie Peak, turkeys were never observed more than 110 yards from some cover type. "Cover" in this case was a forest canopy or riparian vegetation that could conceal an adult turkey. Thus, a 250-acre clear-cut does not create 250 acres of turkey habitat. An effective guide for determining the benefits of clear-cutting involves measuring a strip 110 yards wide around the perimeter of a cut. Elongated clear-cuts, not more than 220 yards wide, are appropriate for Wyoming turkeys if placed in large expanses of timber. The length of this clear-cut type will depend on the amount of timber to be removed. Following these recommendations, a 40-acre clear-cut will leave a clearing 220 yards wide by 880 yards long.

If clear-cutting is to be done to improve turkey habitat, the cuts should clear areas moist enough to support a wet-meadow plant community. If this is not possible, numerous small cuts of five to ten acres interspersed with connecting tree cover will benefit broods as well as adult turkeys.

Conclusion

The Merriam's wild turkey has shown a remarkable ability to adapt to a variety of Wyoming habitats. Creative management approaches to provide brood rearing habitat and winter food sources will ensure a healthy wild turkey population in Wyoming.

For additional information about wild turkeys, and/or technical assistance with turkey habitat improvement, contact personnel from the Wyoming Game and Fish Department, the U. S. Forest Service, and the Bureau of Land Management.

For additional information on wild turkeys, consult the following references:

Fears, J. W. 1981. *The Wild Turkey Book: an anthology*. Amwell Press, Clinton, NJ.

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