

TEXAS PARKS AND WILDLIFE



# TEXAS TURKEY TALK

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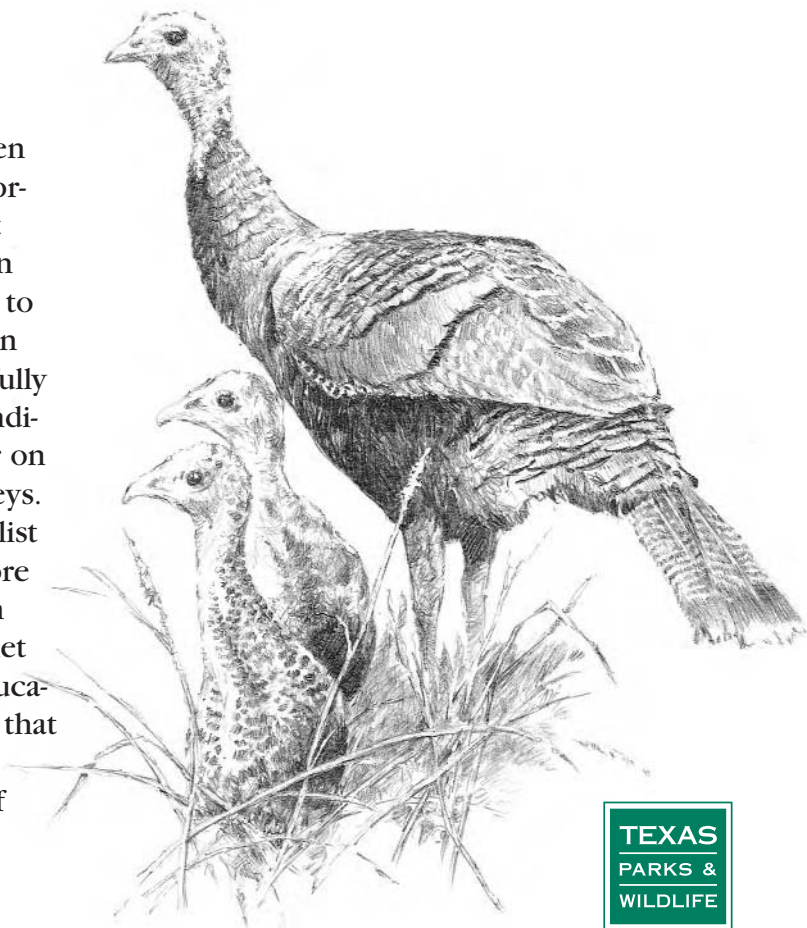
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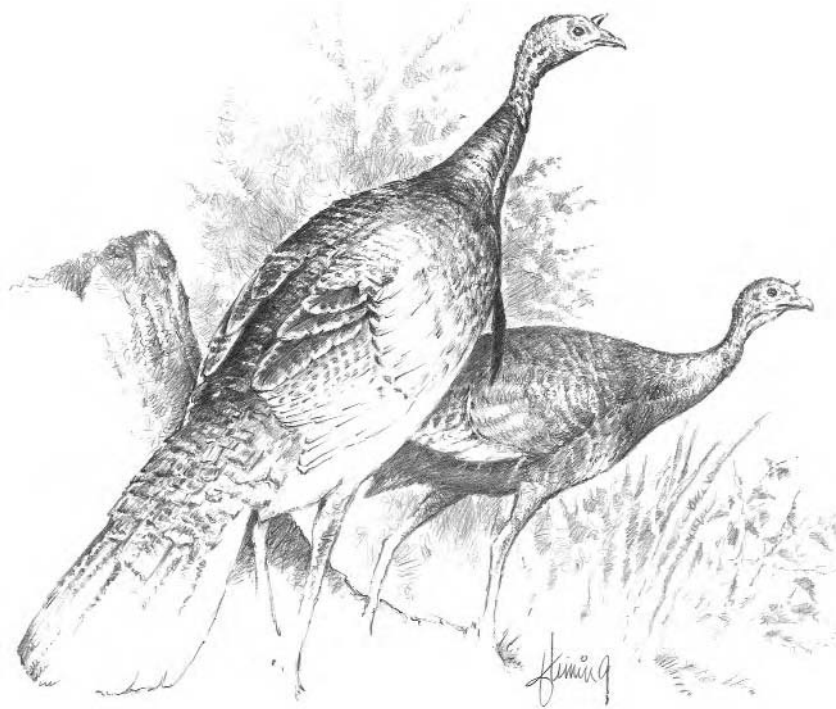
## ACKNOWLEDGEMENTS

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## AUTHOR'S NOTE

This booklet was written to provide updated information on the different types of turkey found in Texas. This is intended to be a general information booklet that will hopefully encourage interested individuals to study further on the topic of Texas turkeys. The suggested reading list provides sources of more detailed information on wild turkey. This booklet should also provide educators with a publication that can be easily read and followed by students of many ages.





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# History of the Turkey in Texas



Turkeys are native to the Americas and probably evolved from pheasant-like ancestors. Native Americans ate turkeys and used the feathers to adorn themselves and their weapons. Cortez, the Spanish explorer, found the Aztecs and other natives in Mexico in possession of domesticated turkeys in 1519. The explorer Vasco de Gama introduced turkeys into Europe.

Turkeys were almost extirpated from Texas by the late 19th century, at which time protective efforts outlawing trapping for five months of the year were initiated. In 1903, a bag limit of 25 turkeys per day throughout a five-month season was established. These liberal regulations and lack of resources to enforce them did not help the turkey on most of its range. In 1919, the legislature created a bag limit of three bearded gobblers per season. Increased protection by conservation-minded landowners and additional game wardens in the 1920's helped turkey populations recover throughout much of the state.

*Native Americans ate turkey and used the feathers to adorn themselves and their weapons. ©Thomas E. Mails*

Texas Parks and Wildlife Department (TPWD) has trapped over 30,000 Rio Grande turkey since the 1920's and restocked them to suitable habitats throughout the state in an effort to restore the bird to its historic range. Additionally, TPWD has partnered with the National Wild Turkey Federation (NWTf) and other state agencies to restore the eastern turkey to East Texas. These turkeys (7,200) were trapped in other states and released at 321 release sites in East Texas during the last 20 years with 97% being released since 1989.

Turkey populations, thanks to conservation-minded landowners, hunters, conservation groups and agencies like TPWD, currently occupy most suitable turkey habitat in Texas. Consequently, significant stocking efforts in Texas were discontinued in 1999. Limited supplemental stocking of eastern turkey continues and TPWD supports national turkey restoration efforts by providing Rio Grande turkeys to other states. The Texas "Rios" are exchanged for other wildlife



species needed in Texas for restoration purposes. The turkey-restocking program has been very successful and serves as a model for land managers and sportsmen showing the positive impact that translocation of native species can have on wildlife populations.



*Limited supplemental stocking of turkey continues in some areas of Texas. ©TPWD*



*TPWD has trapped several thousand turkey and restocked them to suitable habitats throughout the state in an effort to restore the bird to its historic range. ©TPWD*

# Types of Turkey in Texas

There are three subspecies of turkey found in Texas. East Texas, a 57 county region that includes the Post Oak Savannah, Pineywoods, and Gulf Coast Prairies and Marshes, typically receives 35 to 65 inches of annual precipitation. This humid environment and the vegetative communities associated with it are habitat for the eastern turkey, *Meleagris gallopavo silvestris*. Thanks to TPWD restocking efforts, many East Texas counties now have huntable populations of the eastern wild turkey. The Rio Grande turkey, *Meleagris gallopavo intermedia*, occupies

a 400-mile wide band of vegetative cover types associated with 18 to 35 inches of annual precipitation including South, Central and North Texas. Rio Grande turkeys can be found throughout these regions in very large numbers along rivers and other watercourses. The Merriam's turkey, *Meleagris gallopavo merriami*, is the least common subspecies of turkey in Texas and is located in a few isolated mountainous areas of West Texas. The historical range of the Merriam's turkey occurred throughout the western coniferous forest mountain regions of the United States including the states of Arizona, New Mexico and Colorado. Populations existed in

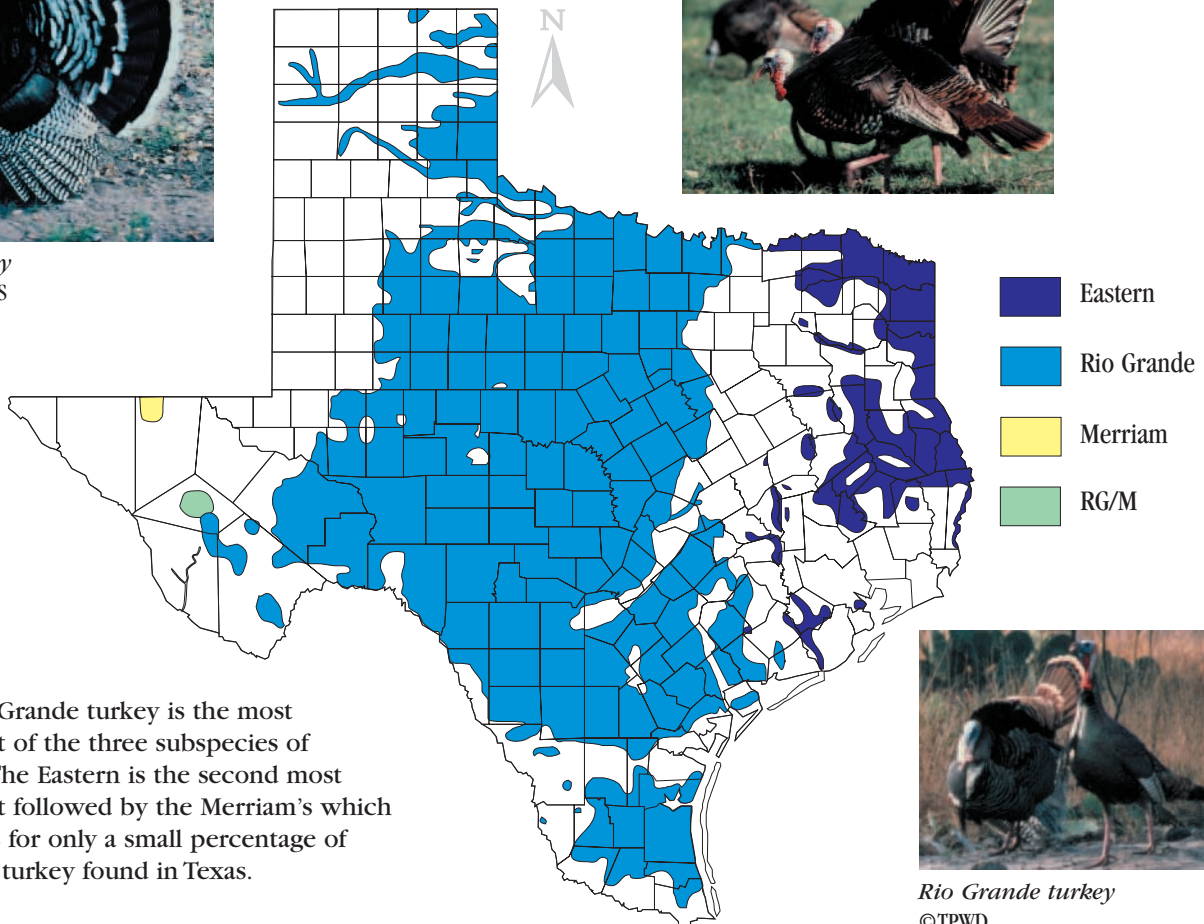
the Guadalupe and possibly Franklin Mountains of Texas. The Merriam's habitat predominately consists of ponderosa pine but Douglas fir, southwestern white pine, piñon pine, and assorted junipers and oaks may also be found throughout their current range in Texas. Merriam's inhabit arid mountainous territory with an average rainfall between 15 and 23 inches, steep terrain (>50% slope), temperature range between 35 to 100 degrees Fahrenheit, and at elevations ranging from 3,500 to 10,000 feet. Presently, viable populations of Merriam's inhabit the Davis Mountains and Guadalupe Mountains in Texas.



Merriam turkey  
©J G Dickson USFS



Eastern turkey  
©TPWD



Rio Grande turkey  
©TPWD

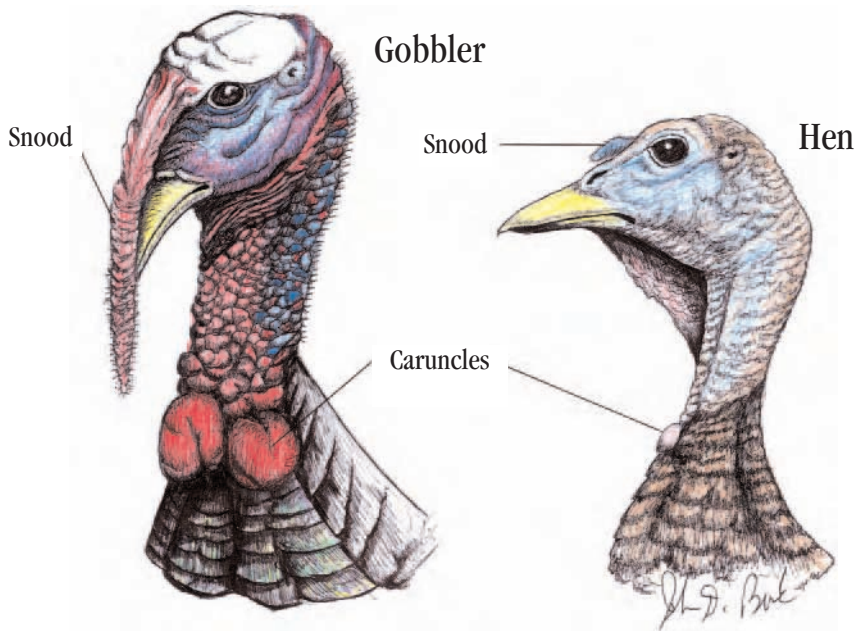
# General Biology of the Turkey

Normally, the eastern turkey is darker, larger and has a thicker beard (specialized feathers found on the breast) than the more common Rio Grande turkey. A mature Rio Grande gobbler (male) averages 16 to 18 pounds, while easterns average 19 to 21 pounds. The Merriam's subspecies is similar in size to the eastern turkey with larger toms (males) weighing over 26 pounds. Whitish tail tips and a white patch on the rump distinguish the Merriam's from other subspecies.

The gobbler is usually easily identified by its larger size, darker color and by the presence of a beard. Gobblers appear darker because they have black tipped breast feathers, whereas hens (females) have buff tipped breast feathers and appear drab brown.



Gobblers appear darker because they have black tipped breast feathers. Changes in head coloration, snood length and caruncles turning bright red indicate a state of excitement, usually in the spring. ©TPWD

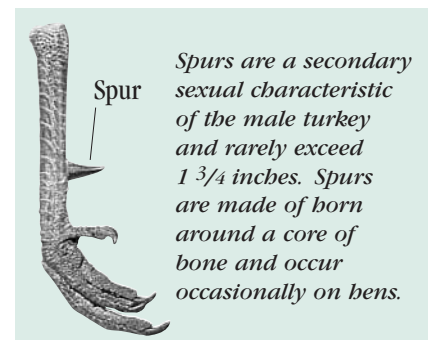


The gobblers snood is pink or red and elongates hanging down next to the gobblers face while the snood of a hen is inconspicuous and covered with small black hair-like feathers. The caruncles are large and red on the gobbler and small and pink to flesh colored on the hen.

Turkey hens are roughly half the size of gobblers weighing an average of 10 to 12 lbs. Like the gobbler, some hens (~15%) also have beards that increase in size and thickness with age and are as productive as hens without beards.

The way to differentiate between sexes is by the coloration and features of the head and neck. With the exception of a sparse covering of black bristles, the gobbler's head and neck is featherless while the hen's neck and head is covered with small buff colored feathers. The coloration of the gobbler's head is white on top, with blue cheeks, and a red neck while the hen's head is drab blue/gray. The snood (the fleshy protrusion between the turkeys eyes) is pink or red and elongates and hangs down next to the gobblers face while the snood of a hen is inconspicuous and covered with small black hair-like feathers.

The caruncles, the fleshy wart-like growths at the base of the neck, are large and red on the gobbler and small and pink to flesh colored on the hen. The turkey has no wattles (which in the domestic chicken are the paired appendages of the comb that hang down from either side of the bill). Spurs are a secondary sexual characteristic of the male turkey and rarely exceed 1 3/4 inches even in old birds. Spurs are made of horn, similar to human fingernails, around a core of bone and occur occasionally on hens.



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Turkeys live an average of two to three years. However, a few birds have been known to live ten years. Most mortality occurs to the eggs and poults (young of the year). Turkey populations and their annual fluctuations are largely dependent on reproductive success. Annual recruitment is related to the pre-nesting condition of the hens, and the quality of the nesting and brood rearing habitat. Proper nesting and brood rearing habitat (knee-high grasses and weeds) are required for reproductive success of the Rio Grande turkey and is correlated with winter and spring soil moisture. Wet winters and springs enhance the “spring green-up” which provides high protein forages and insects important for egg production. Vegetation will mature and provide nesting cover and foraging areas for poults as spring advances.

In eastern turkey range, “spring green-up” is more predictable and rarely limiting. However, eastern turkeys prefer open mature forests with an understory of grasses and weeds. Soil type influences vegetative response. From the southwest to the north-east portion of their range in Texas, soils change from sands to loams and clays. Loamy and clay soils maintain grasses while sandy soils, in the absence of active management, succeed to brushy thickets that eastern turkeys avoid.

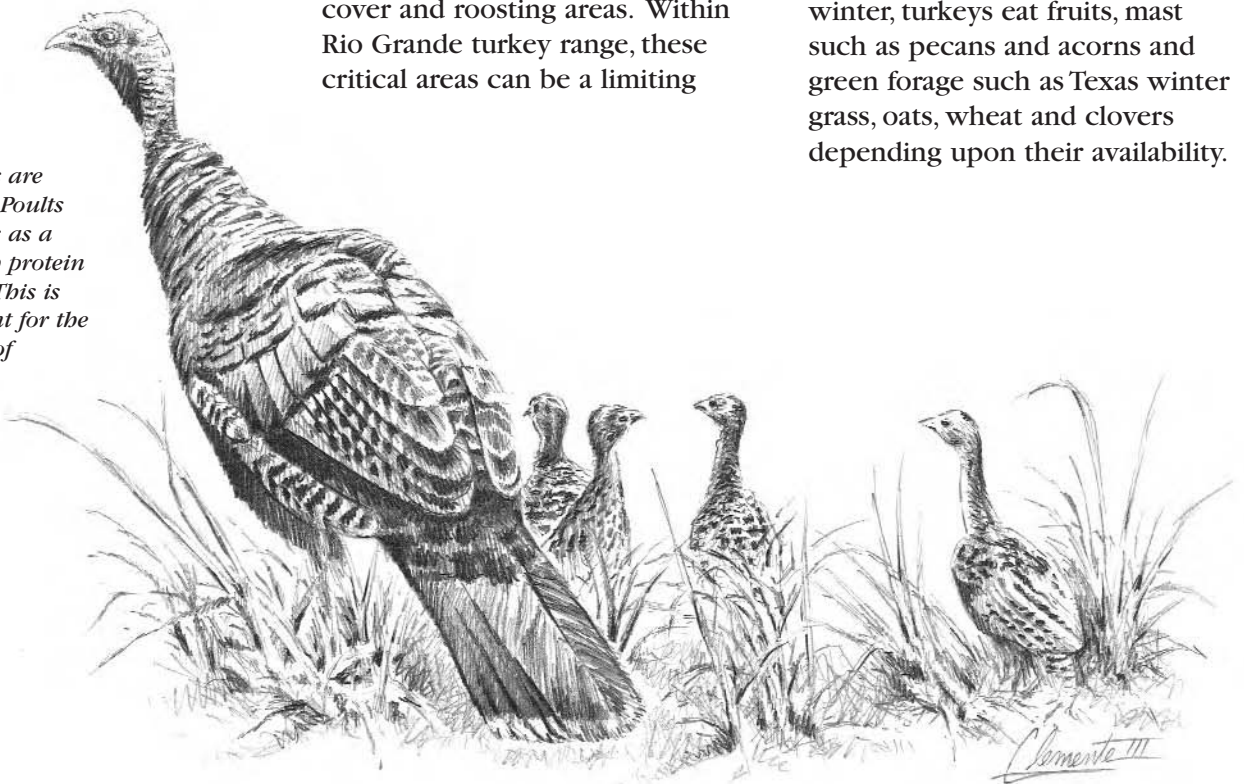
In order for turkeys to survive and flourish, certain habitat requirements must be met. As knee-high grasses and weeds are important in providing nesting and brood rearing cover, turkeys also require ample numbers of mature trees and a variety of shrubs to provide food (pecans, acorns, berries, seeds) as well as cover and roosting areas. Within Rio Grande turkey range, these critical areas can be a limiting

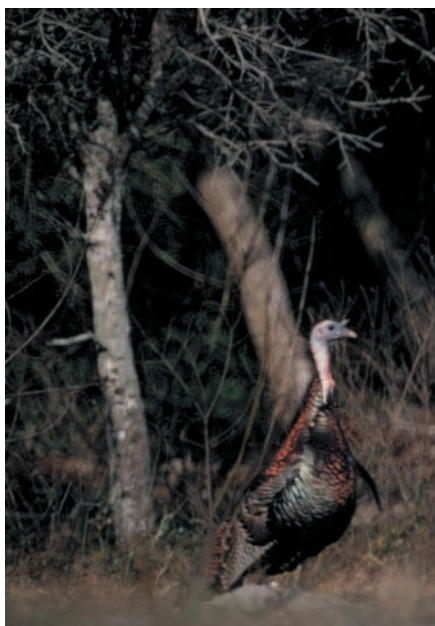
factor. It is important that roosting areas be protected from disturbances. No one should be allowed to camp, hunt or otherwise disturb turkey (day or night) within one-quarter mile of a roost site. Turkeys are very mobile and utilize a large geographic winter and summer range. Seasonal movement occurs up to 10 miles from wintering areas to summer nesting areas. Food, cover and protection must, therefore, be provided over an area of several thousand acres.

Turkeys are primarily herbivorous, but they eat insects, snails and other invertebrates. Major food items during the spring and summer include green grasses and weeds, buds, flowers, seeds and insects. Insects are especially important for the development of young turkeys by providing them with a high protein food item. In the fall and winter, turkeys eat fruits, mast such as pecans and acorns and green forage such as Texas winter grass, oats, wheat and clovers depending upon their availability.



*Young turkeys are called poults. Poults rely on insects as a source of high protein in their diet. This is very important for the development of young turkey.*

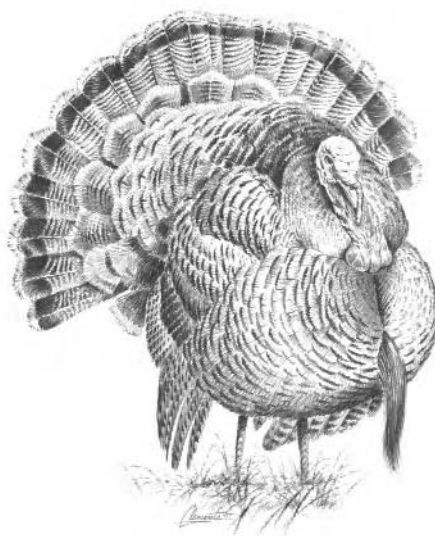




*Turkeys require ample number of mature trees and a variety of shrubs to provide food as well as cover and roosting areas. Frequent disturbances at roosting areas can cause turkey to abandon that area. ©TPWD*

Turkeys breed during the spring of each year, with nesting success and poult survival directly dependent upon environmental conditions. Hens need to breed only once each spring in-order to fertilize their entire clutch of eggs. On average, dominant gobblers can mate with as many as ten hens during the spring breeding season. After breeding takes place, a turkey hen will begin to look for suitable nesting habitat. Ideal nesting habitat is described as an area where a higher percentage of the eggs will result in adult turkeys. Turkeys will usually nest in vegetative communities that support knee high grasses and weeds. Both Rio Grande and eastern turkey hens have been known to nest in dense grass stands, wild plum thickets and along fencerows. On properly managed ranges,

nesting habitat is rarely a limiting factor. In eastern turkey range water is usually not a limiting factor. However, "Rio" hens require a permanent water source in close proximity to their nest. The water is used for drinking and for transferring water onto the eggs to keep them moist during extreme hot and dry weather. Hens will lay an average of 9 to 11 eggs over a two-week period. Most of the eggs are fertile and will hatch after the 28-day incubation period (if not destroyed or disturbed).



*Turkeys breed in the spring of each year if conditions are favorable.*

Overall, turkey-nesting success is similar to that of other ground-nesting birds. Weather is the main determining factor in Rio Grande turkey nesting success. If there is insufficient ground moisture, the eggs will get too hot and dry during incubation and the embryo will die. Some studies indicate that predators destroy almost one-half of all turkey nests. If weather conditions are good, however, a

reasonably good turkey hatch can be expected in spite of predators and other limiting factors. The hen and newly hatched poults will stay around the nest for about one day. Poults can fly well for short distances, and begin to roost in trees at two weeks of age. It is during this critical period (first two weeks) when poult mortality is at its highest. Although a hen may have hatched eight or ten poults, only two or three may survive until summer's end.

Each year biologists and technicians with the TPWD record observations of Rio Grande turkey hens and poults. The same information in eastern turkey range is collected from an annual survey that is mailed out to 4,000 landowners and sportsmen each July asking them to report their turkey observations from May to August. The information is requested in an effort to monitor turkey nesting success and poult survival. The data from these surveys help biologist establish regulations that will enhance and ensure healthy turkey populations for future use by hunters and the general public.



*Hens will lay an average of 9 to 11 eggs over a two-week period. Most of the eggs are fertile and will hatch after the 28-day incubation period. ©TPWD*



# Management Strategies for Wild Turkey



*Properly applied, habitat improvement techniques such as prescribed burning can have a positive impact on turkey habitat.*  
©TPWD

When managing for turkey, it is important to have a plan that identifies goals and objectives as well as limiting factors and cost-effective practices. It is important to understand that weather and habitat are the two most critical factors in establishing or maintaining healthy turkey populations. Weather, especially prolonged drought, may substantially reduce turkey populations. Sufficient rainfall during the late winter, spring and early summer is essential for good Rio Grande turkey production and survival.

Range and livestock management practices can have a positive or negative impact on turkey populations. Livestock numbers stocked at a light to moderate rate with a rotational grazing system will assure an adequate year-round food supply. Overgrazing by cattle can reduce and minimize food availability, and nesting and brood rearing habitat critically important to the reproductive success of all subspecies of turkey. Continuous grazing or long duration grazing along riparian areas in the Rolling Plains, can have a negative impact on the regeneration of

cottonwood and hackberry seedlings, which are considered to be good roosting sites. Properly applied, habitat improvement techniques such as prescribed burning, mechanical control of undesirable brush species, and population control of deer and exotics will have a positive impact on turkey habitat.

Rio Grande turkeys require rivers, creeks, dirt tanks or other forms of free-standing water. Permanent water is essential in a Rio Grande turkey's life, and is a critical element for hens during the nesting season.



*Heavy grazing pressure by livestock can reduce and minimize food availability, nesting and brood rearing habitat critically important to the reproductive success of turkey.*  
©TPWD

Availability of suitable roost sites is also important to Rio Grande turkeys. Large, healthy turkey populations have long been associated with major watercourses in Texas. These areas usually have an ample number of tall hardwood trees that provide roosting habitat. River corridors, in both Rio Grande and eastern turkey range, usually contain large mast producing trees that provide critical fall and winter foods. Artificial roosts can be built in areas that lack suitable roosting sites. Turkeys have been observed roosting on power line poles. Therefore, creating similar structures may provide Rio Grande turkeys with suitable roosts in the absence of natural roosts.

Supplemental feeding for wildlife is recommended only during extended periods of stress such as prolonged drought or severe winter weather. However, in order to sustain wildlife during these periods, the animals must know where the supplemental feed is located and be accustomed to utilizing it.

Turkeys prefer natural foods and will not take significant quantities of artificial feed unless they actually require it. Although extended periods of severe weather may justify supplemental feeding in some instances, feeding programs are expensive. Metabolic chamber research indicates that a flock of 20 turkeys would need 300 lbs. of corn per week in the absence of other food, just for maintenance. Feeding areas should be kept clean and the grain must not become contaminated by the birds' droppings. Feeders should be moved short distances from time to time to minimize this problem. The feeding area should be near trees but away from thick brush that could provide ambush cover for predators. Feeders should not be close to woven wire fences, as panicked turkeys will often try to go through the fence rather than over it and may get caught in the process.

A critical issue to consider when feeding wild turkey is the impact that corn or grain sorghum infected with aflatoxin may have on a population. Aflatoxin is a term used to refer to a group of extremely toxic chemicals produced by two molds, *Aspergillus flavus* and *Aspergillus parasiticus*. The toxins can be produced when these molds attack and grow on certain plants and plant products. Corn is especially infected when stressed under such conditions as drought, but grain sorghum, peanuts and cotton also are at risk. Aflatoxin consumption by livestock and poultry results in a disease called aflatoxicosis. All living organisms metabolize aflatoxin in the liver,

but high concentrations can lead to liver disease or death within 72 hours. Lower aflatoxin concentrations result in various symptoms, including feed refusal, decreased feed efficiency, impaired reproduction, hemorrhaging in muscles, and suppression of the immune system. The amount of aflatoxin an animal can tolerate varies with age, sex and health. Younger animals are most susceptible to aflatoxin poisoning. There is not a procedure for eliminating aflatoxin after it is produced, but limiting or maintaining concentrations may allow contaminated grain to be fed under proper management. The Food and Drug Administration (FDA) sets standards for acceptable levels of aflatoxin in corn

used for food. Corn containing no more than 20 parts of aflatoxin per billion (ppb) may be used for food use by humans, for feed use by immature animals (including immature poultry) and by dairy animals. It is believed that corn and grain sorghum containing over 100 ppb may have a negative impact on wild turkey populations. Unfortunately, corn and grain that does not meet the standards set by the FDA will sometimes end up labeled as wildlife feed and used by hunters and landowners. All corn and grain must be tested and labeled with the amount of aflatoxin it contains, so it is very important to read these labels and stay away from feeds that do not meet standards set by the FDA.



*Turkeys prefer natural foods and will not take significant quantities of artificial feed unless they actually require it. Corn and grain sorghum containing over 100 ppb aflatoxin may have a negative impact on wild turkey populations. ©TPWD*



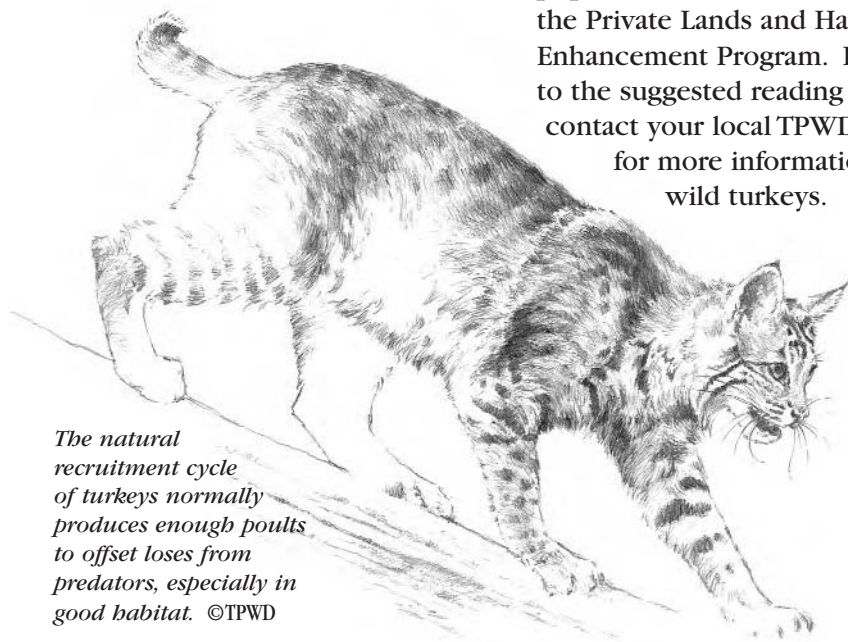
*The hand of man continues to diminish turkey habitat throughout Texas. ©TPWD*

Landowners who wish to feed both deer and turkey from the same feeder should consider using an elevated barrel-type automatic feeder and a mixture of whole corn and milo. Food plots are preferable to feeding stations for turkey and other wildlife. These plots need not be large in size; two to 10 acres will provide large quantities of forage for turkey and other wildlife if protected from livestock grazing. Turkeys readily eat oats, wheat, clover, vetch and rye.

The impact that predators have on the survival and success of ground nesting bird populations has always been controversial. The natural recruitment cycle of turkeys normally produces enough poults to offset losses from predators, particularly in good habitat. With good weather and range conditions, turkey and predator populations remain balanced. Currently, Texas'

healthiest turkey populations exist in areas where predator densities are among the highest in the state.

Where predator control is warranted, it must be aggressive, occur every year, be and implemented across a large area. However, the degree of control



*The natural recruitment cycle of turkeys normally produces enough poults to offset losses from predators, especially in good habitat. ©TPWD*

required to provide a positive response normally renders itself cost prohibitive.

The "hand-of-man" continues to diminish turkey habitat throughout Texas. These demands may have an irreversible effect on wild turkey populations unless large tracts of habitat are managed for turkey. Most of the turkey range in Texas is privately owned property. The future of this species hinges on the ability of TPWD and private landowners to work together to manage this popular game bird. The support of private individuals and conservation organizations interested in the welfare of the wild turkey have been and should continue to be a very important component of future management programs.

Wildlife Division staff with TPWD provides no-cost technical assistance to private landowners interested in wildlife habitat and population management through the Private Lands and Habitat Enhancement Program. Refer to the suggested reading list or contact your local TPWD biologist for more information on wild turkeys.

# Suggested Reading

Breeding Chronology in Rio Grande Turkey Hens by Billy Don Davis,  
Federal Aid Final Report, Job 7.07, TPWD. 192 pp.

Food Habits of the Rio Grande Turkey in the Permian Basin of Texas by George W. Litton,  
TPWD Technical Series No. 18.

Rio Grande Turkey Habitat Management by George W. Litton and Fielding Harwell,  
Texas Parks and Wildlife Department Bulletin, PWD RP W7100-263 (10/95). 10 pp.

The Wild Turkey: Its History and Domestication by A.W. Schorger,  
University of Oklahoma Press. 625 pp.

The Wild Turkey and Its Management edited by Oliver H. Hewitt,  
The Wildlife Society, 1967. 589 pp.

The Wild Turkey: Biology and Management edited by James G. Dickson,  
Stackpole books, 1992. 462 pp.

Game On Your Land: Managing Eastern Wild Turkeys in South Carolina by Vernon Bevill,  
©1978, reprinted in 1984 by The National Wild Turkey Federation, 42 pp.

