

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

**UPLAND WILDLIFE HABITAT MANAGEMENT
(Ac.)**

Code 645

Texas Supplement, Zone 3

Rio Grande Turkey

HABITAT REQUIREMENTS

FOOD

Rio Grande turkeys eat a wide variety of food items including invertebrates, such as insects, insect larvae, spiders, snails; seeds and fruits of grasses, sedges, forbs, shrubs, cacti, vines and trees; green foliage of grasses and forbs; and agricultural crops. Because of their high nutritional value, insects are eaten whenever available and can comprise up to 95% of the turkey diet during the growing season. Large numbers of insects such as grasshoppers are considered essential for good survival and development of young growing poults. Refer to Table 1 for a listing of some native plants that are valuable as turkey food.

COVER

Turkeys need several different kinds of cover: roosting, nesting, loafing, screening, and escape cover. They roost each night above ground, usually in groups. Ideal roost areas are groves of tall trees with horizontal limbs located in bottomlands or canyons. When these are not available, turkeys will roost in isolated larger upland trees and even on man-made structures such as utility poles and towers, windmill towers or tank batteries. Ideal nesting cover for Rio Grande turkeys consists of tall grasses and forbs (weeds), often mixed with low brush. As the amount of available nesting habitat increases, nesting and brood-rearing success increases because predators will find it more difficult to locate and destroy nests and poults. When nesting and habitat is limited to blocks less than 5 or 10 acres, narrow creek corridors, or fence rows, nesting success is much reduced.

Turkeys spend the day traveling, feeding and loafing and need brush or taller grasses and forbs to screen them from predators. Moderate brush densities on rangeland will provide needed screening/escape cover.

WATER

Permanent surface water for daily drinking is essential to turkeys. Nesting hens and poults are especially dependent on nearby sources of water. These water locations may also provide

important feeding areas for succulent vegetation and insects. Permanent water sources should be no more than 2 miles apart to maximize use by turkeys.

HABITAT ARRANGEMENT

Because turkeys are very mobile, the close interspersed cover, food and water is not as critical as it is for quail. Feeding areas may be some distance from water and roost sites as long as there are brushy travel corridors or areas of taller vegetation that provide screening cover. When hens are caring for a group of young poults, a closer arrangement of food, cover and water is more critical. In general, habitat arrangement should be adequate if half or more of the terrain is in woody cover and the remainder in small to moderate sized openings (up to 160 acres) with a permanent water source every mile, habitat arrangement should be adequate. Because of their need for water and roost areas with taller trees, creek bottoms are a key component of turkey habitat.

HABITAT SIZE

Rio Grande turkeys have a very large annual home range based on their habit of congregating in large winter roost areas and then dispersing prior to nesting season. The annual home range of a group of turkeys may cover 10 to 20 miles or more between winter and summer ranges. Turkey will wander long distances to find suitable feeding areas and nesting grounds. The more suitable the food, water and cover is on an individual tract of land, the more likely it is that turkeys will stay there. The less suitable it is, the more likely it is that turkeys will leave to find better habitat.

HABITAT MANAGEMENT TECHNIQUES

FOOD

The food supply for turkeys can be maintained or improved by management that maximizes plant diversity, especially those forbs, vines, shrubs, cacti, and trees that produce large amounts of seed, berries, fruits or nuts. Refer to Table 1. This same plant diversity will in turn support an abundance and variety of insects. Light grazing favors the development of good plant diversity while heavy grazing discourages these plant communities. Grazing with cattle will generally favor a better diversity of turkey food plants than grazing with sheep or goats. Rotational grazing systems where several pastures are resting while others are grazed favors seed and fruit production of some turkey food plants. Longer rest periods of 120 to 180 days are generally better than shorter rest periods of 45 to 90 days. When planning and conducting brush management, always leave the more desirable mast and fruit producing species such as oaks, hackberry, bumelia, pecan, sumac, plum and grape. Leave some large mesquite and large female juniper for their bean and berry production. Brush management by selective individual plant removal methods (chemical IPT, grubbing or shearing) will allow better habitat development than broadcast methods (aerial spraying, root-plowing, chaining). Fire can be used to increase the production and availability of succulent grazing for turkeys. Late winter or early spring

burning will favor early grass green-up but will discourage annual forbs. Early winter burning will favor winter grasses and forbs. Insects are often attracted to areas burned the previous winter. An ideal burn for turkey is a mosaic burn where portions of the pasture remain unburned, thus providing needed cover. This can be accomplished by burning under milder conditions that create a cooler fire or by the installation of internal fireguards to protect specific areas. Summer fires or harsh winter fires are discouraged since they often burn high into the canopy of trees and harm mast production for several years.

Where cropland is interspersed in turkey habitat, include grain or seed crops in cropping sequence or plant outer edges of fields to these crops. Good turkey food crops include grain sorghum, other sorghum types, peanuts, sunflower, corn, wheat, oats, rye, or triticale. After seed maturity, crops or portions of fields should be left unharvested to provide maximum prolonged availability. Turkeys also use certain grazing or forage crops. These include small grains, annual ryegrass, clovers, alfalfa, vetch, winterpeas, cowpeas and other such leafy, high quality plants. Soil type, average annual rainfall and availability of irrigation will dictate which of these crops can be used successfully in any given area.

Food plots can be useful to attract and hold turkey on a piece of property. The same grain and forage crops listed above can be used for turkey food plots. In addition, several types of millet are often added to food plots for additional diversity. These include German (foxtail) millet, proso millet, browntop millet, pearl millet, and Texas panicum. Refer to Table 2 for specific information on food plots for turkey. Food plots are generally smaller than agricultural fields and are planted in closer proximity to cover, water and roost areas. A combination of grain and forage type food plots will be most beneficial. Food plots will have to be fenced to exclude or manage livestock grazing. Deer will also use most food plots intended for turkey and vice versa, so size may have to be adjusted to compensate for this. Food plots for turkey will generally be 10 to 40 acres in size and should ideally be located every one half to one mile. On larger food plots, it is advisable to plant strips of taller grass or tall crops such as forage sorghum to provide cover. Proper fertilization of crops and food plots is recommended to get the most benefit. Soil testing and Nutrient Management guidelines should be used to determine fertilizer needs.

Fertilization of key mast, berry and fruit producing species is sometimes used to boost the production or reliability of these important turkey food items. Formulations high in phosphorus are preferred. This practice is probably not cost effective or practical on a large scale. Fertilization will also make the foliage more palatable to deer and livestock and may lead to the overutilization of these species.

Supplemental feeding is not considered a habitat management practice and no feeding program can take the place of well-managed native habitat. Feeding does not enhance the habitat, but will often attract and hold turkeys on a given tract of land. Feeding with corn, grain sorghum, wheat, sunflower seed, cowpeas, peanuts or other seed or grains is commonly practiced. A pelleted commercial turkey ration or a deer pellet rich in grain can also be used. An elevated platform feeder, when properly constructed and placed, can eliminate or greatly reduce the use of the feed by raccoons, deer, hogs or other non-target animals.

Turkeys are susceptible to aflatoxin, a toxin produced by a fungus that develops in large seeded grains grown under stressful conditions. Birds are especially susceptible to this toxin which causes a wide variety of problems including reduced growth rates, liver damage, immune deficiency and suppressed egg development. Toxicity level and duration of exposure determine the impact to wildlife populations. Because of the risks involved with aflatoxin no grain feed should be used that tests greater than 20 ppb.

COVER

Roost areas are key components of turkey habitat and should receive preferential protection and management. All potential roost areas of taller trees in creek bottoms and canyons should be left intact when planning and conducting brush management. The shrubby understory vegetation beneath and adjacent to roost areas should generally not be removed. A ¼ mile buffer should be left alone around known or possible roost areas. An exception to brush control around roost sites exists when the area is being taken over by cedar or other forms of dense understory woody vegetation. When understory vegetation gets too thick turkeys will avoid the area. If visibility is reduced below 50 feet or when turkeys appear to have abandoned the roost site understory vegetation probably needs to be thinned out to allow turkey's access and better visibility.

Nesting cover is managed and maintained by light grazing, rotational grazing with long rest periods, or in some cases, no grazing. Maximum growth of tall herbaceous vegetation will favor best nesting habitat. The most valuable nesting habitat is usually located within ¼ mile of permanent water. When mechanical brush management is carried out, leave some or all of the slash and dead brush scattered on the ground (not stacked and piled). This dead woody debris serves as screening/escape cover and provides protection for thicker, denser herbaceous nesting cover. To favor an adequate interspersed of loafing, feeding and escape cover, conduct brush management in patterns and leave at least 50% of habitat in moderately thick brush that includes taller trees as well as understory shrubbery.

The quality and amount of prime turkey cover can be improved by fencing off riparian buffer areas adjacent to perennial or seasonal streams, creeks and draws. These areas can be permanently rested from grazing or can be grazed periodically to favor ideal turkey cover. The width of the buffer will vary according to on-site conditions and the size of the creek. Generally, a minimum buffer width of 100 to 300 feet on each side of the creek is desirable.

WATER

Turkeys will use natural water in creeks and springs or man-made water in ponds or livestock drinking troughs. Where turkeys are dependent on livestock water development, be sure to keep water available when livestock are moved out of pastures. The complete or partial fencing of ponds, springs or creek bottoms will provide additional benefit to turkey food and cover. Ground level water is more desirable, especially for poults, than water in troughs. To provide ground level water, construct earthen depressions near windmills, storage facilities or troughs and pipe overflow water to depression. Consider soil texture or the presence of gravel or rock

before constructing depression. Sealing with bentonite or plating with clay may be needed. Size of depression can range from 10 feet to 50 feet in diameter and 1 to 3 feet deep in center. Depression can be fenced from livestock access (or partially fenced) to provide additional food and cover value to turkey. Where soil texture and depth permit, constructing holes in intermittent creek and draw channels will provide better water distribution. These excavated holes can be large or small. Slopes of excavation should be 2:1 or flatter. Spoil should be moved away from channel to reduce downstream movement of soil. Holes will naturally fill with sediment over time and periodic maintenance will be needed for longevity of practice. Where traditional water development is not feasible, water for turkey and other wildlife can be provided with rainfall catchment and storage devices known as guzzlers.

REFERENCES

- _____. 1999. Wild turkey (*Meleagris gallopavo*). USDA-NRCS Fish and Wildlife Habitat Management Leaflet No. 12. 12 pp.
- Dickson, J.G. (ed.) 1992. The wild turkey: biology and management. Stackpole Books, Mechanicsburg, PA. 480 pp.
- Halls, L.K. (ed.) 1975. Third national wild turkey symposium. Texas Chapter of The Wildlife Society. 227 pp.
- Hewitt, O.H. (ed.). 1967. The wild turkey and its management. The Wildlife Society, Washington, D.C. 589 pp.
- Litton, G. W. 1977. Food habits of the rio grande turkey in the Permian basin of Texas. Texas Parks and Wildlife Department, Austin, Technical Series No. 18. 21 pp.
- Litton, G. W. and F. Harwell. 1995. Rio Grande turkey habitat management. Texas Parks and Wildlife Department, Austin. 9 pp.

Table 1. Important Native and Naturalized* Turkey Food Plants**Woody Plants/Cacti**

Oak
 Pecan
 Pricklypear
 Tasajillo
 Cholla
 Hackberry
 Bumelia
 Elm
 Hawthorne
 Rusty blackhaw
 Possumhaw
 Red mulberry
 Texas mulberry
 Little walnut
 Black walnut
 Wild plum
 Carolina buckthorn
 White honeysuckle
 Mesquite
 Western soapberry
 Texas ash
 Green ash
 Ashe juniper
 Redberry juniper
 Algerita
 Ephedra
 Persimmon
 Roemer acacia
 Catclaw acacia
 Fragrant mimosa
 Catclaw mimosa
 Elbowbush
 Lotebush
 Green condalia
 Skunkbush sumac
 Littleleaf sumac
 Flameleaf sumac
 Evergreen sumac
 Poison ivy
 Grape
 Virginia creeper
 Carolina snailseed
 Greenbriar
 Dewberry
 Balsamgourd
 Bush croton
 Roughleaf dogwood

Grasses and Sedges

Rescuegrass*
 White tridens
 Texas wintergrass
 Wildrye
 Western wheatgrass
 Texas bluegrass
 Switchgrass
 Eastern gamagrass
 Johnsongrass*
 Ozarkgrass
 Indiangrass
 Little barley*
 Japanese brome*
 Sideoats grama
 Knotgrass
 Vine-mesquite
 Plains bristlegrass
 Southwestern bristlegrass
 Reverchon bristlegrass
 Hooded windmillgrass
 Sand dropseed
 Texas cupgrass
 Tobosagrass
 Green sprangletop
 Cedar sedge
 Sedges (other)
 Spikerush
 Bulrush
 Flatsedge

Forbs

Giant ragweed
 Crotons
 Bundleflowers
 Dayflower
 Spiderwort
 Bloodberry
 Pokeweed
 Ground cherry
 Spurges
 Bladderpod
 Wild onion
 Nuttall peavine
 Filaree
 Tallow weed
 Gaura
 Noseburn
 Bluecurls
 Flax
 Winecup
 Sunflower
 Blue-eyed grass
 Pigweed
 Ruellia
 Lambsquarter*
 Kochia*
 Hairy tubetongue
 Oxalis
 Primroses
 Buffalobur
 Indian mallow

* Indicates non-native species
 that have become naturalized

**Table 2. Planting Information for Commercially Available Seed
Used for Food Plots or to Enhance Turkey Food Supply**

		Seed Rate Lbs/Acre ¹	Broadcast or Drilled	Rows ²	Planting Dates	Planting Depth In.	Comments ³

Perennials

Illinois bundleflower ⁵	13.6	4.5	12/1 - 4/15	1/4 - 1/2	Short-lived (2 - 4 yr)
Alfalfa "Ladak" ⁵	20	NR	9/1 - 4/15	1/4 - 1/2	Short-lived (4 - 8 yr)
Indiangrass	4.5	1.5	12/1 - 4/15	1/4 - 1/2	
Switchgrass, Alamo	2	1	12/1 - 4/15	1/4 - 1/2	Also good nest cover
Switchgrass, Blackwell	3.5	1	12/1 - 4/15	1/4 - 1/2	Also good nest cover
Plains bristlegrass	3	1	12/1 - 4/15	1/4 - 1/2	Also good nest cover
Sideoats grama	4.5	1.5	12/1 - 4/15	1/4 - 1/2	
Johnsongrass ⁴	10	3	4/1 - 5/31	1/4 - 1/2	
Sorghum alnum	10	6	4/1 - 5/31	1/4 - 1/2	Short-lived perennial

Warm Season Annuals

Grain sorghum ⁶	12	4	4/1 - 5/31	2-Jan	
Browntop millet ⁴	10	4	4/1 - 5/31	1/2 - 1	
Proso millet	10	3	4/1 - 5/31	1/2 - 1	
Foxtail millet	10	3	4/1 - 5/31	1/2 - 1	
Pearl millet	10	3	4/1 - 5/31	1/2 - 1	
Japanese millet ⁴	15	NR	4/1 - 5/31	0 - 1/2	Wet areas or mud flats
Texas panicum ⁴	6	2	4/1 - 5/31	1/2 - 1	
Black oil sunflower	15	5	4/1 - 5/31	1 - 2	
Sesame	5.3	2	4/1 - 5/31	1/2 - 1	
Cowpeas ⁵	30	15	4/1 - 5/31	1 - 2	
Mungbeans ⁵	30	15	4/1 - 5/31	1 - 2	

Cool Season Annuals

Wheat	60	20	9/1 - 11/30	1 - 2	More cold hardy
Oats	60	20	9/1 - 11/30	1 - 2	Less cold hardy
Rye	60	20	9/1 - 11/30	1 - 2	
Triticale	60	20	9/1 - 11/30	1 - 2	
Ryegrass	12	NR	9/1 - 11/30	0 - 1/2	Broadcast/overseed
Yellow sweetclover ⁵	5	NR	9/1 - 11/30	1/4 - 1/2	Biennial, "Madrid"
White sweetclover ⁵	5	NR	9/1 - 11/30	1/4 - 1/2	Hubam
Hairy vetch ⁵	20	9	9/1 - 11/30	1 - 2	
Austrian winterpea ⁵	18	12	9/1 - 11/30	1 - 2	
Bur medic ⁵	3	NR	9/1 - 11/30	1/4 - 1/2	Good reseeder
Button medic ⁵	10	NR	9/1 - 11/30	1/4 - 1/2	Good reseeder
Turnips	3.5	NR	9/1 - 11/30	1/4 - 1/2	
Tyfon (turnip cross)	3.5	NR	9/1 - 2/28	1/4 - 1/2	May winterkill

Footnotes:

1 Seeding rates base on the use of PLS when available; otherwise use good quality commercial seed.

2 Row planting can be used to allow native food plants to establish between rows.

- 3 Species listed are adapted to rainfall within south and Central Texas.
- 4 These species are also important agricultural weeds and should not be used in farming areas.
- 5 All legumes should be inoculated with the proper strain of Rhizobium for best results.
- 6 Includes many types of grain sorghum such as WGF, Egyptian wheat, African millet, Hegari, etc.

