

# Attwater's Prairie Chicken

Scientific Name: *Tympanuchus cupido*

Federal Status: Endangered, 3/11/67 • State Status: Endangered

## Description

The Attwater's Prairie Chicken is a brownish, strongly black-barred, medium-sized grouse with a short, rounded, blackish tail. Males have long tufts on the sides of the neck, called pinnae, which point forward during courtship. Males also have a yellow-orange comb above the eyes, and, on each side of the neck, an area of yellow-orange skin that inflates during courtship display.



Male Attwater's Prairie Chicken  
© Jeanne Miller



Female Attwater's Prairie Chicken  
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## Habitat

Attwater's Prairie Chickens are found only in the coastal prairie of Texas. They use different areas of coastal prairie grassland for various activities; so a mixture of native grasses at

different heights is optimum. For example, the birds use short grass cover (less than 10 inches in height) for courtship, feeding, and to avoid moisture during heavy dew or after rains. Midgrass areas (10-16 inches in height) are used for roosting and feeding. Tall grasses (16-24 inches in height) are needed for nesting, loafing, feeding, and escape cover. Very dense stands of grass are generally avoided, but are occasionally used for shade during summer, and as protection against inclement weather and predators. Studies have shown that prime habitat consists of tall grass prairie dominated by bunchgrasses such as little bluestem, Indiangrass, switchgrass and big bluestem; along with flowering plants such as *Ruellia*, yellow falsegarlic, and ragweed. The birds prefer open prairies without any woody cover, and avoid areas with more than 25% cover of shrubs. Preferred habitat is also characterized by knolls and ridges, with the minor variations in topography and soils on these sites resulting in a variety of vegetation types.

## Life History

Prairie chicken breeding activity occurs on or near leks. A lek or booming ground is a specific area typically used year after year. They are usually located on bare ground or short grass areas which allow the males to be seen by the females. Booming grounds vary in size from one-eighth acre to several acres. They may be naturally occurring short grass flats or artificially maintained areas such as roads, runways, oil well pads, and drainage ditches. Areas around windmills, ponds, and other cattle concentration areas are often heavily grazed, and therefore provide the short grass cover used for booming sites. Active booming grounds are usually in close proximity to mid and tall grass cover.

Males begin to set up territories on the booming grounds in late January-February. Fighting ensues when one male enters the territory of another. This fighting early in the booming season determines the social structure of the males on the lek. Usually one or two males will be dominant. Booming is usually heard from about daylight to 9 a.m. and in the late evening.

The hens start coming to the booming grounds in late February and early March. They appear quietly, often staying on the edge of the booming ground. When a hen is on the booming ground, the males become much more vocal and active. This increased activity often causes males not on the ground to fly in and start booming. Most mating occurs in early March, with one or two dominant males doing the majority of the breeding. Booming activity gradually ceases during the last week of April and the first two weeks of May. By mid May, the males have abandoned the booming grounds.

Nesting is usually initiated in early March. Most nests are located within one mile of the booming ground. The nest is a well-concealed, shallow depression about eight inches in diameter lined with dry grass and feathers from the hen. Hens prefer to nest in mid to tall grass cover with the grass canopy concealing the nest. Also preferred are areas with openings that facilitate walking, including cow trails used for access to their nests.

Clutch size ranges from 4 to 15 eggs, with the average being 12 eggs. During the 26 day incubation period, the hen leaves the nest only for short periods (45-90 minutes) during the morning and again in the afternoon to feed nearby (usually within 1/4 mile). The peak of the hatch is in late April to early May.

If a nest is destroyed, a hen will renest; although renesting attempts are limited because males leave the booming grounds by mid-May. Nesting losses are often the result of predators such as snakes, raccoons, opossums, skunks, and coyotes, and flooding of nests. Because of the flat nature of coastal prairie rangeland, nests and small young are unable to survive heavy rains and flooding. The most detrimental rainfall pattern for nests is heavy rains in late April and early May. The April rains destroy initial nests, and May rains ruin renesting attempts. Hailstorms and human activities such as shredding during the nesting season can also destroy nests.

When the eggs hatch, the hen leaves the nest site. She takes her brood into more open areas, since it



is difficult for young chicks to travel in dense vegetation, although some heavy cover is important for escape areas. The chicks are quite mobile at hatching, and can fly short distances by two weeks of age. Heavy or frequent rainfall during May is especially detrimental to young chicks.

Prairie chickens feed on a wide variety of plant parts and insects. Potential food sources, both vegetation and insects, vary by season, location, and availability. Studies have shown that green foliage and seeds make up most of the diet, whereas insects are important seasonally. The foliage and seeds of native forbs (flowering plants) are particularly important in the diet. Most commonly consumed plants include Ruellia, yellow falsegarlic, upright prairie-coneflower, leavenworth vetch, stargrass, bedstraw, doveweed, and ragweed. Predators that feed on prairie chickens include Great-horned Owls, hawks, bobcats and coyotes.

Insects make up the majority of the diet of chicks. The chicks generally hatch when insect populations are high. Hens take their broods to weedy areas where insect density is greatest.

## Threats and Reasons for Decline

Habitat loss and alteration are the primary reasons for the population decline of Attwater's Prairie Chicken. Loss of habitat due to land use changes since 1930 are particularly significant. It is estimated that 6 million acres of coastal Texas were once covered with suitable tall grass prairie habitat. Only a few patches of this immense expanse of prairie chicken habitat now remain. Currently, it is estimated that less than 200,000 acres of suitable habitat remain. This represents a 97% loss of habitat within the historic range, and a 57% loss since 1937.

This loss of habitat has been the result of several factors. The biggest single change was brought about by the start of rice production along the Gulf Coast. From about 1892 to present, about two million acres of grassland were converted to rice production.

Other factors, such as overgrazing by cattle in some locations and conversion of rangeland to introduced grass pastures have also reduced habitat. High stocking rates and continuous grazing over a period of many years have caused declines in range condition on parts of the

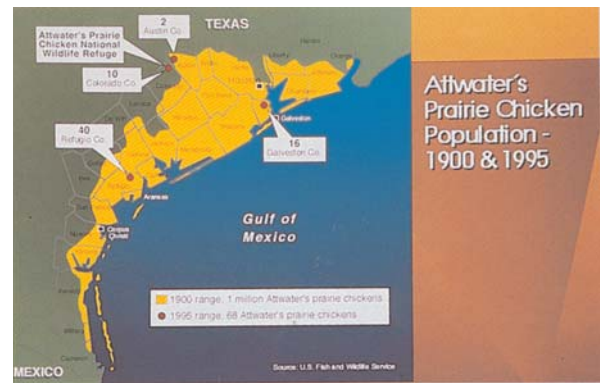
Coastal Prairie. The climax tall grass plant community with its associated native wildlife, which existed before the influence of European man, was ideal habitat for the prairie chicken. Unfortunately, tall grasses such as big bluestem, little bluestem, and Indian-grass required by prairie chickens for nesting are also preferred cattle forage. Without proper grazing management, continuous intensive grazing by livestock will reduce desirable grasses and forbs and replace them with a plant community unable to support the nesting and food requirements of prairie chickens.

Also, much coastal prairie rangeland has been converted to introduced grasses such as coastal bermudagrass. Over a million acres have been planted to introduced grass pastures in an effort to boost livestock production. The conversion was especially rapid from 1940 to 1970, when fertilizer on which introduced grass production depends was relatively inexpensive. This was another setback for the prairie chicken, since introduced grass pastures do not provide habitat.

The invasion of woody species such as Chinese tallow and Macartney rose (introduced exotics), wax myrtle, Baccharis, running liveoak, huisache, and mesquite have also contributed to loss of over a million acres of coastal prairie habitat. The invasion of brush is the result of overgrazing combined with lack of fire. Historically, the coastal prairie burned periodically. These natural and man-made fires helped to maintain healthy and diverse grassland.

Finally, urbanization and industrial expansion have taken their toll on prairie chicken habitat. Losses have been most evident along the upper Texas coast. The considerable urban sprawl of Houston, Galveston, and other coastal cities has led to irreplaceable habitat losses. The loss of diverse tallgrass prairie has not only affected the prairie chicken, but also plants such as Texas windmill-grass (*Chloris texensis*), Texas prairie dawn (*Hymenoxys texana*), and Houston camphor daisy (*Rayjacksonia aurea*), which have become rare components of the ecosystem.

In 2003, fewer than 60 birds remained in two fragments of habitat located in Galveston and Colorado counties. We must find a way to reverse the factors contributing to the loss of tallgrass coastal prairie and the life it supports. The Attwater's prairie chicken now literally stands on the brink of extinction. Time is running out for this spectacular inhabitant of our coastal grasslands.



© TPWD



Coastal tallgrass prairie habitat  
© David Diamond



Attwater's Prairie Chicken chick  
© Gary Montoya



Attwater's Prairie Chicken nest  
© Mike Morrow

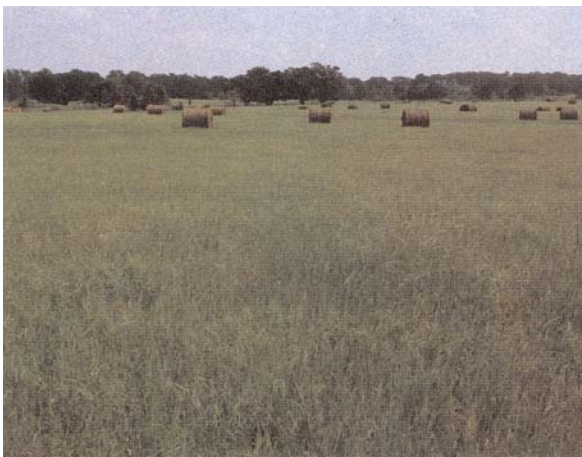




Coastal rice production  
© Gary Montoya



Industrialization on the Gulf Coast  
© R. W. Jurries



Introduced grass pasture  
© R. W. Jurries

## Recovery Efforts

Research is continuing regarding the interaction of limiting factors on prairie chicken populations. Efforts to provide information and incentives for private landowners to manage rangeland for the benefit of prairie chickens as well as livestock are an essential part of the recovery process, and many landowners have implemented habitat improvements under the protection of a Safe Harbor Habitat Conservation Plan developed in 1995. Cooperative habitat management projects involving private landowners, Texas Parks and Wildlife Department, and the U.S. Fish and Wildlife Service have made a start at reversing the devastating habitat losses.

An active captive breeding program began in 1993, with the first supplementation of wild populations accomplished in 1995. The captive breeding program continues to expand, with seven zoos or research facilities producing 131 Attwater's Prairie Chicken for release in 2002. Release efforts will continue to supplement wild populations, while concurrent efforts seek to increase the amount of habitat available to the species. Reintroduction may also be attempted on restored habitat owned by willing landowners.

## Where To Learn More About the Attwater's Prairie Chicken

The best place to visit to learn more about prairie chickens is the Attwater Prairie Chicken National Wildlife Refuge. The refuge is located off F.M. 3013 about 6 miles northeast of Eagle Lake, Texas.

## How You Can Help

You can be involved with the conservation of Texas' nongame wildlife resources by supporting the Special

Nongame and Endangered Species Conservation Fund and the Adopt-A-Prairie Chicken Program ([www.tpwd.state.tx.us/apc](http://www.tpwd.state.tx.us/apc)). Special nongame stamps and decals are available at Texas Parks and Wildlife Department (TPWD) field offices, most state parks, and the License Branch of TPWD headquarters in Austin. The Nature Conservancy of Texas also accepts gifts specifically for Attwater's prairie-chicken recovery efforts. For more information, contact the Attwater Prairie Chicken National Wildlife Refuge at (979) 234-3021.

## For More Information Contact

Texas Parks and Wildlife Department  
Wildlife Diversity Branch  
4200 Smith School Road  
Austin, Texas 78744  
(512) 912-7011 or (800) 792-1112

or  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
10711 Burnet Road, Suite 200  
Austin, Texas 78758  
(512) 490-0057

or  
U.S. Fish and Wildlife Service  
Corpus Christi Ecological Services  
Office  
c/o TAMU-CC, Campus Box 338  
6300 Ocean Drive, Room 118  
Corpus Christi, Texas 78412  
(361) 994-9005

or  
The Nature Conservancy's Texas  
City Prairie Preserve website at:  
<http://nature.org/wherewework/northamerica/states/texas/preserves/texascity.html>

Management guidelines are available from Texas Parks and Wildlife Department for landowners and managers wishing to improve habitat for Attwater's Prairie Chicken.

## References

- Jurries, R. 1979. *Attwater's prairie chicken*. Texas Parks and Wildlife Department. Series F.S., No. 18, Project W-100-R. 36 pp.
- Lehmann, V.M. 1941. *Attwater's prairie chicken, its life history and management*. U.S. Fish and Wildlife Service, North American Fauna No. 57. 65 pp.
- U.S. Fish and Wildlife Service. 1993. *Attwater's prairie chicken recovery plan*. Endangered Species Office, Albuquerque, N.M.