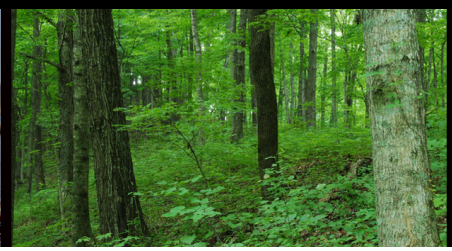
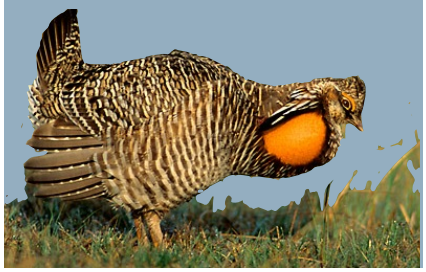




STATUS: HIGH CONSERVATION PRIORITY IN IOWA



Greater Prairie-Chicken

Tympanuchus cupido

Introduction

At one time, the eerie hollow moaning of male Greater Prairie-Chickens displaying on their spring booming grounds, or leks, was a common sound across much of central and eastern North America. Where native prairie was intermixed with oak woodland in Iowa and other states, this species thrived. But due to a 99% + loss of native prairies, this interesting species is quite uncommon and severely localized where pockets of appropriate habitat still exist.

The distribution of this essentially non-migratory species changed as prairie and woodland habitats were converted to cropland. Remaining populations are restricted to prairie intermixed with cropland. In Iowa this is primarily in the Kellerton and Ringgold Grassland BCA and IBA in Ringgold County near the Southern border of the state.

The three recognized subspecies of Greater Prairie-Chickens vary only slightly in appearance but dramatically in status. One, the Heath Hen, became extinct in 1932. Another, Attwater's Prairie-Chicken, found in small parcels of habitat in Texas, is seriously endangered. The Greater Prairie-Chicken is extinct, or in danger of extinction, in 15 states and provinces; but numerous enough to be hunted legally in 4 other states. Some of the earliest efforts to manage wildlife populations in North America were initiated in 1791 when legislation was passed to protect the Heath Hen from market hunting. Declining populations, its status as a game bird, and spectacular breeding displays make the Greater Prairie-Chicken a popular subject of study.

LINK TO IOWA IBA: GREATER PRAIRIE-CHICKEN

Habitat Preferences

The primary habitat type that Greater Prairie-Chickens evolved with was native tallgrass prairie. Elimination or alteration of permanent grasslands which are suitable for nesting, brood rearing, and roosting was a huge factor in the drastic population declines that this species endured. It can be no surprise that when more than 99% of this once dominant habitat of native tallgrass prairie was eliminated from Iowa, Greater Prairie-Chickens were doomed to exist as best they could as remnant populations in a few localized, remnant habitats of this same type. It has taken a great deal of careful management by Iowa DNR Biologists at the Kellerton and Ringgold BCA and IBA in Ringgold County to produce the positive results that have been seen there.

Habitat used by this species is characterized by a quilt-work pattern of mid and tall grass prairie mixed with cropland. It is actually a testament to this species adaptability that it can survive in areas once dominated by native prairie are now equally dominated by fields of intensively used cropland, pasture and hayland.

Feeding Habits

The summer diet of Greater Prairie-Chickens consists primarily of seeds, buds, berries, leaves, and insects. The winter diet is also made up of leaves and seeds, but also waste grain from agricultural fields. Historical records indicate that acorn mast was a major component of the diet in winter, particularly during periods of heavy snow. Acorns may still be eaten where they are available.

Foraging is done largely on the ground, but occasionally in trees as well. Most feeding is done in early morning and evening.

Breeding Biology

In early spring males gather on booming grounds (leks) and display to attract females. Typically 8 to 20 males will be present, and at times many times more than this. When displaying, males lower their heads, raise their tails, inflate air sacs on their necks, and create hollow moaning sounds called “booming.” At times males also leap into the air and make loud cackles. Males also dance at the lek, and this involves elaborate and forceful stomping of the feet. Females eventually visit the booming ground and mates with the male of her choice.

After mating the female constructs a nest on the ground among thick tall grass. This nest consists of a shallow depression lined with fine grass, leaves and feathers.

Usually 10 to 12 eggs are laid, but the number may be as few as 7 or as many as 17. Incubation lasts from 23 to 25 days, and done by the female only. Shortly after hatching the young follow the female away from the nest and the precocial young begin to find their own food very early in life. Short flights are possible in as little as 2 weeks after hatching, and strong flight is achieved by 3 weeks of age. The young usually remain with the female for nearly 3 months.

Concerns and Limiting Factors

Market hunting and poaching once reduced or limited populations of Greater Prairie-Chickens. Non-hunted populations tend to have higher survival rates than hunted populations, 48% vs. 37%–41%; but hunting is not a factor in Iowa.

The Heath Hen subspecies became extinct primarily because of loss of prairie habitat. The Attwater’s Prairie-Chicken subspecies declined drastically in Texas as grazing pressure and cropland increased throughout its area that was once mostly native prairie. The same is true for the Greater Prairie-Chicken subspecies. Intensive agricultural activities have had tremendous negative effect on populations of all three subspecies as well as

agricultural practices simply eliminating the habitat that was needed for survival.

Interestingly, historical peaks in populations of Greater Prairie-Chickens in Iowa occurred during the transition from native prairie to cropland; and then populations declined to extinction as the proportion of cropland continued to increase. It has taken years of intensive grassland management for Iowa DNR Biologists to reintroduce and then nurture a small but evidently stable population of this species at the specific IBA and BCA locations in Ringgold County.

Pesticides are one of several other concerns in landscapes dominated by intensive agriculture, and may reduce insect availability during the breeding season, particularly for chicks.

Habitat Management Recommendations

The first legislation to protect the Heath Hen from market hunting in the New England states during spring and summer was passed in 1791. Subsequently, legislation frequently has been used to protect populations, with mixed success. Heath Hens became extinct in 1932. Similarly, populations of the Attwater's Prairie-Chicken subspecies have continued to decline in Texas despite their status as an endangered species. Legislative measures have been more effective with Greater Prairie-Chickens, perhaps because of their larger and more diverse distribution.

As large grassland areas continue to be fragmented into smaller parcels, understandably, prairie-chicken nests become more concentrated and more susceptible to predation; and planted hedgerows and trees invading grasslands provide hunting perches for raptors and travel lanes for mammalian predators, further reducing chances to sustain this species.

Several other factors also have an impact on prairie-chicken populations. Removal of pheasants may reduce inter-specific competition between pheasants and Greater Prairie-Chickens. Some have postulated that artificial food and water sources may be used by the Greater Prairie-Chicken, though this has not been shown to influence populations. While removal of predators may improve nesting success, predator removal has not been shown to improve the long-term size and stability of populations. Most management effort has been directed toward improvement of habitat. Effective strategies have included manipulation of grazing pressure, control of burning, provision of thick vegetation for protective cover, and establishment of preserves. Reintroduction of prairie-chickens into formerly occupied habitats may be necessary to expand their distribution, particularly in regions where there are no dispersal corridors between occupied and unoccupied habitats. But because of problems associated with inadequate habitat at the release site and/or poor survival and reproductive success of transplanted birds, few transplants have been successful.

When all discussions are over, protecting, restoring and managing the appropriate quantity and quality of grassland habitat is essential to sustaining prairie-chicken populations. And more specific information on grassland management is found under that heading in Part 3 of this project.

LINK TO IOWA IBA: GREATER PRAIRIE-CHICKEN