

Greater and Lesser Prairie Chicken

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Kansas currently harbors two species of prairie grouse. The greater prairie chicken (*Tympanuchus cupido*) is much more abundant than the lesser prairie chicken (*T. pallidicinctus*). A third species of prairie grouse, the sharp-tailed grouse (*T. phasianellus*) disappeared from its historic western Kansas range during the droughts of the 1930's. Attempts to restore sharp-tails in the 1980's and 1990's, while initially promising, ultimately proved unsuccessful.

Prairie chickens may be best known for their unique spring breeding behavior. Early in spring, groups of males assemble on communal mating grounds known to biologists as leks. The low, booming sounds produced by greater prairie chicken cocks accounts for the common reference to their leks as "booming grounds." Similarly, the higher-pitched, bubbly sounds made by lesser prairie chicken cocks has conferred the term "gobbling grounds" to their leks. On a quiet spring morning, these sounds can carry as much as two miles across the open prairie, serving as an audible beacon to prairie chicken hens. Males of either species compete with each other through a series of spectacular displays, calls, and sparring for the coveted inner-most territories on the lek. The one or two males most successful in attaining and defending these small territories typically perform about 90% of the matings that occur on the lek. Unlike the polygamous ring-necked pheasant or the more monogamous bobwhite, prairie chickens do not form lasting behavioral bonds between cocks and hens.

Greater prairie chickens currently occur in parts of 10 states, but by far the largest populations occur in Kansas and Nebraska. The traditional stronghold of greater prairie chickens in Kansas is the Flint Hills, a roughly 50-mile-wide band of tallgrass prairie that extends from the Oklahoma border northward nearly to the Nebraska line in the eastern third of the state. The tallgrass prairie of the Flint Hills was saved from the conversion to cropland that consumed most of North America's original tallgrass prairie by its shallow soils and underlying limestone that resisted the plow. Strong greater prairie chicken populations also exist in the mixed prairies of the Smoky Hills in northcentral Kansas. Significant numbers of greater prairie chickens can be found as well in the grassland breaks that parallel the streams of northwest and west-central Kansas. These western Kansas populations have increased and expanded over the last two decades, particularly with the addition of mixed grasslands seeded through the federal Conservation Reserve Program (CRP).

Lesser prairie chickens are indeed a bit smaller than their greater counterparts. Kansas currently harbors the most extensive remaining range and largest population of the lesser prairie chicken among the disjunct populations found in the 5 states where it occurs (KS, TX, NM, OK, CO). Greatest densities of lessers in Kansas occur in the remaining sandhills prairies of southwest Kansas, but extensive populations also occur in the mixed prairies of the Red Hills. Lessers also have also increased in number and expanded their range where seeded CRP grasslands are present in close proximity to native mixed prairies of the Pawnee, Walnut, and Smoky Hill drainages in west-central Kansas. This expansion of lesser and greater prairie chicken populations in west-central Kansas has brought these two historically overlapping species back together in a zone ranging from 20 to 40 miles in width. Some mixed leks with cocks of both species occur in this zone of overlap.

Two distinct forms of prairie chicken hunting occur in Kansas. In the eastern half of the state (east of U.S. Highway 281), an early season (Sept. 15 – Oct. 15) allows hunters with dogs to take advantage of the tendency for young greater prairie chickens to hold well at this time of year. Later in the fall, chickens gather into larger groups, often making it more difficult for hunters with dogs to get within gun range. By fall, many prairie chickens will begin feeding in cut sorghum, corn, or soybean fields. Since these birds often fly directly to specific fields when they leave their roosts in early morning, hunters can get pass shooting opportunities by positioning themselves at the margin of the field closest to the roosting area. This pass shooting is the more common way of taking greater prairie chickens during Kansas' regular season (3rd Saturday in Nov. to Jan. 31st, Daily Limit = 2). The prairie chicken hunting season in

southwest Kansas, where most lesser prairie chickens are found, is more restrictive in both season length (3rd Saturday in Nov. to Dec. 31) and allowable daily bag (Limit = 1). Since 1990, estimated greater prairie chicken harvests in Kansas have varied from a high of 59,000 in 1991 to a low of only 9,000 in 2002. Since hunting regulations were further restricted for southwest Kansas in 1995, harvest of lesser prairie chickens has typically amounted to a few hundred birds annually.

Prairie chicken adults are exceptionally hardy birds and are seldom significantly threatened by severe winter weather. Should deep snows occur, their ability to dive into the snow for roosting helps shield them from cold temperatures and wind chills above the snow surface. More significant weather threats to greater prairie chickens sometimes come in the form of excessive, drenching rains during nesting or when chicks are very small and most vulnerable to chilling. Drought is probably the greatest weather threat to lesser prairie chickens. Normal conditions in the range of the lesser prairie chicken varies from arid to semi-arid, so significant droughts can severely impact their habitat and production.

Historically, conversion of native prairies to cropland has accounted for the greatest loss of prairie chicken habitat in Kansas and elsewhere. More recently, other forms of human land use and development have posed additional threats. Particularly in the Flint Hills, the thorough annual burning of vast areas of tallgrass prairie associated with intensive, early cattle grazing in May, June, and July leaves few places for ground nesting birds like prairie chickens to successfully nest. Greater prairie chicken populations in the Flint Hills have declined significantly since this grazing system became widespread. However, less frequent burning, ideally once in 3 years or twice in 5 years, is critical to the health of the prairie and for prairie chickens. Possibly a more serious threat to greater prairie chickens and other grassland birds is the spread of invasive trees like eastern red cedar, Osage orange, and others into parts of our Kansas prairies (*read more: Tree Invasion*). Ironically, this has resulted from too little application of controlled burning in some regions and from failure of land managers to quickly recognize and respond to the threat tree invasion poses to prairie, livestock production, and grassland wildlife.

Recent radio-telemetry studies conducted by Kansas State University researchers in southwest Kansas has highlighted yet another threat to prairie chickens. These workers documented a distinct avoidance of man-made structures by lesser prairie chickens. Generally, most prairie chicken hens avoided nesting or rearing their broods within a quarter-mile of power lines and within a third-mile of improved roads. Buildings, including a power plant and gas booster stations, were avoided from anywhere between two-thirds of a mile to one mile, depending on their size. This information, coupled with similar avoidance behavior noted in other species, suggests there is cause for concern over negative impacts on prairie chickens of other types of structures as well, including communications towers, wind farms, and suburban homes. Fragmentation of the open grassland horizons preferred by prairie chickens appears to represent yet another man-made threat to these species habitats.

Maintaining extensive tracts of open, well-managed prairie is critical to the conservation of prairie chickens. In Kansas, where 97% of the land is privately owned, ranchers are, unquestionably, the most important stewards of the prairies. Wildlife conservationists can best help conserve prairie chickens by forming alliances with ranchers to assist them in preventing tree invasion, to help them resist economic pressures to sell their lands, and to test new, economically-viable management systems that could prove more friendly to grassland wildlife. One such system with great promise is the "Patch Burning / Patch Grazing" system developed and tested by researchers at Oklahoma State University. Traditional grazing systems remain very viable for prairie health, provided they incorporate periodic fire (*not annual burning*) and light to moderate stocking rates.