

Densities are even lower in other states—nearer 10 birds per square mile in Wisconsin and Missouri (Johnsgard 1983). It might require an area larger than 50 square miles to support one-thousand birds.

Besides occurring at low density, prairie-chickens move around. A lot. Sustained flights of 5 miles from roosting to feeding areas are common. In Minnesota, a brood of four chicks (3 females and one male) were radio-tagged, and on their first birthday, the points where these birds had been relocated encompassed 1,045 square miles (Toepfer and Rosenquist, unpublished data)! The average female prairie-chicken moves more than 4 miles from where she was hatched to where she nests for the first time the following spring. But, 85% of young males move less than 2 miles to their breeding territories (Halfmann 2002). As a result, prairie-chickens can be very slow to colonize new habitat because few males move long distances. And, isolated prairie-chicken populations are literally pumping their breeding stock into the surrounding landscape as females instinctively seek out other populations away from “home.”

The communal mating displays of prairie-chickens are a fantastic spectacle to witness. But of the 8 or more males typically on a booming ground, only one or two dominant males do 70% to 90% of the mating (Schroeder and Robb 1993). With relatively few males contributing genes to each year's recruitment, the risk of inbreeding depression skyrockets. Conservation biologists often use 500 individuals as a rule-of-thumb for a viable population—one that has a low risk of dying out over 50 generations or longer. But a prairie-chicken population of 900 to 2,500 birds is needed to have the same genetic properties as an ideal population of 500 birds, where each contributes genes equally to the next generation (Walk 2004).

Though prairie-chickens are a tallgrass prairie species, they do not particularly like tall grasses. Prairie-chickens rely on their vision to protect them from hawks and other predators. For similar reasons, prairie-chickens instinctively avoid places near woodlands, tree lines, buildings and other structures (Schroeder and Robb 1993, Johnsgard 2002). To visualize good prairie-chicken habitat, think of grass dense enough to hide a volleyball. And short enough for a walnut on top of that volleyball to be able to see you coming, with an unobstructed view in all directions for a half-mile or more. This trait of prairie-chickens is especially frustrating to biologists in Illinois. Many environmental programs rightly target highly-erodible soils and floodplains to maximize soil conservation, water quality, and wildlife benefits. But in Illinois, most of these acres are near wooded stream corridors shunned



Male Greater Prairie-Chicken with elongated head feathers at rest.

by prairie-chickens. There are about 780,000 acres of Conservation Reserve Program (CRP) grasslands in Illinois, for example, but almost none of them are where the remaining prairie-chickens benefit from them. In contrast to Minnesota, where the Conservation Reserve Program is credited with allowing prairie-chickens to become common enough to allow a hunting season

(Svedarsky et al. 1999), only one small flock, probably never more than 10 or 15 birds, established itself on CRP grasslands in Illinois. And when those acres recently returned to crop production after the 10-year contracts expired, the pioneering flock vanished.

The Illinois Recovery Plan

Based on what is known of prairie-chicken biology, biologists developed some guidelines for recovery goals. First, a significant prairie-chicken population simply needs the open space of a suitable landscape—at least 100 square kilometers, roughly the size of a township, that contains less than 10% woodland/forest and urban/residential land cover, with a core area of at least 40% grassland. Secondly, to minimize genetic problems, these places need to be linked by satellite areas, or grassland “stepping stones” less than 12 miles apart, so birds moving through the landscape have places to settle as they move among core areas over several generations.

The initial objective is to ensure the long-term preservation of the remnant populations, by maintaining the combined Prairie Ridge population, including those at satellite areas, of at least 1,000 birds. To support this many birds, an additional 6,000 acres of grassland (5,000 total acres at each of the two units of Prairie Ridge) and habitat at three or more satellite areas are needed.

Looking farther ahead, improving the species' status from endangered to threatened would require a population of 3,000. When the population reaches 5,000 birds, they should be delisted.

Biologists identified only one site as having high potential for a prairie-chicken reintroduction: Pyramid State Recreation Area in southwestern Illinois. The Illinois