

(*Agrostis alba*). Redtop seed became the main cash crop, as the area produced 85 percent of the world's seed and 95 percent of the U.S. crop during the 1930s (Yeatter 1943).

Harvest of the seed did not begin until mid-July, leaving the grassland undisturbed during the nesting season. By the time the seed was ready for harvest, young chickens were usually mature enough to escape the machinery.

Other upland species, many which are now listed as threatened or endangered, were common then in the gray prairie region. Ralph Yeatter of the Natural History Survey believed the area had maintained its native fauna better than any other part of the state, noting the abundance of Northern Bobwhite, Upland Sandpiper, Northern Harrier, Henslow's Sparrow, and Grasshopper Sparrow.

When grain prices increased after World War II and the redtop market began to fail, farmers in the gray prairie region found it cost efficient to lime the soil, add fertilizer, and grow corn and soybeans. As grasslands were put to the plow, chickens lost nesting cover and the population dwindled. By the late 1950s it became clear that farmers forced to choose between a good cash crop and prairie-chickens were not choosing chickens. By 1960 the birds were gone from all areas except Jasper and Marion Counties. In 1962, the population was estimated to be about 2,000. Three years later about 300 birds remained (Westemeier 1885).

Protecting the Prairie-Chicken

Under Yeatter's leadership, individuals representing conservation groups and sportsmen formed the Prairie-Chicken Foundation of Illinois. Private donations were collected and in 1962 land was purchased for a

permanent sanctuary. Another group, the Prairie Grouse Committee of the Illinois Chapter of the Nature Conservancy, became the major acquirer of sanctuaries beginning in 1966. As donations came in, more land was either leased or purchased. When the foundation disbanded in 1971, sanctuaries were either donated to the Department of Conservation or con-

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signed, with the payments due, to the Nature Conservancy. Today there are 1,361 acres in Jasper County and 760 in Marion County.

The birds responded well to habitat improvement. The highest densities ever recorded occurred on sanctuary lands in the 1970s (Westemeier 1985). Still, predators, nest parasitism, human disturbance, and increasing infertility and embryonic mortality have kept the flocks small enough to be vulnerable to unforeseen hardships.

A commercial egg production facility in Marion County which spreads manure (and possibly diseases) from 600,000 laying hens on fields near sanctuary land may have caused the demise of some booming grounds. Tragedy struck in 1990 when several farmers illegally spread rodenticide-treated grain (toxic to chickens if eaten) on no-till fields adjacent to Marion County sanctuary land. Although no carcasses were recovered, the population dropped dramatically with no corresponding

change in Jasper County (Westemeier 1990).

A current concern to biologists has been declining egg quality. Each spring most of the young hens arriving on the booming grounds are the offspring of the dominant cocks. Inbreeding may have become a significant factor limiting the population. Eggs have been successfully swapped between nests in Jasper and Marion flocks to add genetic diversity. "New blood" was also introduced in 1991. In the summer of 1992, 15 Minnesota hens, each equipped with a tiny transmitter, joined the Jasper County flock.

During that winter, close monitoring revealed the birds spent most of the time off sanctuary land in corn stubble, even roosting there at night. Showing a preference for wide open spaces, chickens shunned fields near trees where avian predators might lurk. Overhead powerlines surrounding sanctuary lands continue to take a toll. Two hens suffering impact injuries were discovered in the spring of 1993. Both died. Such accidents are believed to account for 10 percent of deaths.

While providing habitat for prairie-chickens, these sanctuaries have also offered suitable living and nesting quarters for some of Illinois' other threatened and endangered species. Migrating American Bitterns, Yellow Rails, and Henslow's Sparrows stop on sanctuaries for short periods and may nest. About 15 pairs of Upland Sandpipers and several Northern Harriers nest there each year. Harriers and Short-eared Owls spend winters there drawn by the abundance of prairie voles and southern bog lemmings. In 1993, a pair of owls stayed to nest for only the second time since the sanctuaries were established. Loggerhead Shrikes are permanent residents. King Rails have nested at least twice, once as recently as 1993.

Prairie flora as well as fauna have