Proceedings of the Iowa Academy of Science

Volume 68 | Annual Issue Article 48

1961

History of Prairie Chickens in Iowa

M. E. Stempel
State Conservation Commission

Sam Rodgers Jr.
Ottumwa Public School

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M. E. STEMPEL[1] AND SAM RODGERS, JR.[2]

Abstract. The peak period for prairie chickens *(Tympanuchus cupido pinnatus)* in Iowa was about 1880 when 69% of the state was in farms. They were found in prairie areas throughout the state. Hunters found this grouse ideal game and bags of 25 to 50 per day were easily taken. Market hunters frequently killed 200 or more per day. Farmers trapped and shot the birds to sell or to eat. As long as marginal prairie areas were only lightly disturbed by agriculture, the prairie chickens held on, but when intensive farming began, the birds nested in hayfields or in over-grazed pastures where brooding was unsuccessful. By 1900, 90% of the state was in farms and birds were vanishing. A few remained until 1954 in a poorly drained portion of Appanoose County. Since then only occasional strays have been reported.

The greater prairie chicken increased in number from the time of early settlement of the state until 1880 when 69 per cent of Iowa was in farms. Then the number decreased. This report contains information on the values of the bird, the progress of settlement, the stages of cultivation as reflected by the corn acreage, and how the land use pattern affected the chicken habitat to the extent that it caused increase, and later decrease of the grouse.

Sources for this paper are historical publications, statistical studies of national and state farm practices, the 1950-1955 work of the senior author, the 1952 reports of the junior author, and verbal and written reports from observers. Data from these sources are summarized in Table 1. Other information is from studies by grouse specialists in nearby states.

Table 1. Status of prairie chickens in Iowa, 1850-1900.

Year	Percent in farmland	Estimated* percent in prairie (or grass)	Status of prairie chicken population
1850	7	90	good
1860	21	75	near peak
1880	69	30	peak
1900	90	10	low

* Estimated figures, extracted from farm, crop, and human population figures.

DESCRIPTION, HABITS, AND GENERAL HISTORY

Greater prairie chickens (*Tympanuchus cupido pinnatus*) are native to North America. These birds were found in open country from southern Canada to Texas and from Colorado to eastern Ohio. The prairie chicken is a member of a race including three other prairie grouse—the lesser prairie chicken, found in southwestern United States; the Attwater's prairie chicken,

[1] State Conservation Commission, Ottumwa, Iowa.
[2] Ottumwa Public Schools, Ottumwa, Iowa.

found in southern Texas and Louisiana; and the heath hen (extinct) of the eastern United States.

Spring booming and strutting of greater prairie chicken cocks took place on knolls in open prairie. The same areas were used year after year. Nests contained from 10 to 15 eggs. Broods of young appeared in late June or July and birds remained in coveys until October. Early-day farmers reported winter flocks of a dozen to 100, or even 1,000 grouse, which moved several miles from roosting to feeding areas. Some migrated 100 or more miles. Hamerstrom and Hamerstrom (1949) give three types of evidence for supporting the migration idea: (1) Flocks were seen in passage; (2) fewer chickens were found in northern areas; and (3) new arrivals appeared in southern areas. There was some segregation of sexes in the flocks.

Roosting was in prairie areas. Flocks of migrants in southwestern Iowa tended to roost in lowlands such as the Willow Slough area, which is now a public shooting place and is still visited by stray chickens. The nearest known resident flocks are over 100 miles to the west in Nebraska and Kansas.

Food was grain and insects. When domestic grain fields replaced the prairie vegetation which included some native grain, the flocks built up rapidly in tilled areas. Schwartz (1945) indicated that domestic grain was necessary for large grouse populations. In addition he pointed out there was considerable use of uncultivated plants such as rose, rush, foxtail, ragweed and legumes, while elm and boxelder buds were also taken.

Hazards and Helps to Prairie Chickens

Haefner (1935) indicated that during dry springs the prairie fires left wide areas desolate, and other authors remembered that the Indians fired the grass. Burning at nesting time was destructive, but fires may have killed seedling trees that would otherwise eventually spread into the grasslands. Such fires in the long run may have benefited the grouse. Drought cut down the hatching rate, and cold nesting seasons and late winters reduced production. Moderately warm weather helped when it provided necessary moisture for good incubation. Toward the end of the century the erection of the phone and telegraph lines and wire fences took a heavy toll of low-flying prairie fowl flocks. By 1854 improved farm machinery was being developed so that eventually more farmland was plowed to hasten the decline of prairie grouse.

Why the Prairie Chicken was Valued

Farmers and town dwellers used both the bird and its eggs. Aitken (1931) indicated that "It was not uncommon 70 years

ago to see a farmer come to town with a sled box nearly filled with undressed prairie chickens. These sold for up to three dollars per dozen." Powder and shot were expensive and many were trapped in tip-top traps or in steel traps placed near haystacks or corn-cribs where the grouse fed in winter.

Farm life was a rugged existence and the harvest of crops was small when the prairie chickens flocked to fields of shocked grain. Sometimes they flushed noisily in front of high-spirited horses and caused run-aways. Nevertheless, this grouse was often valued.

Hunting the Prairie Chicken

All classes of hunters were attracted to the prairie chicken. They were shot to be eaten; some were shot as targets. Boys could shoot them one at a time from a tree where they alighted. Those on low branches were killed first. The others took off only when a badly placed shot crippled a bird that set up a commotion.

About 1880 after breechloaders replaced the muzzle-loaders, market shooters killed the young grouse at the rate of 50 to 65 per hunter per day. This occurred in late summer when grouse had not completed moulting, and they hid rather than flush. They were literally kicked out of cover.

Most fascinating of the shooting was the taking of pinnated grouse while in coveys, in late summer and early fall. Pointing dogs were used to locate birds. Often two or more dogs were loosed from a spring-wagon and shooters rode through the corn or the prairie until the dogs pointed. In late fall the experienced hunter stalked resting flocks in corn fields. Birds flushed one at a time. Morning and evening "chicken" pass shooting was favored as flocks went out from roosts, or on their return as small, scattered bunches. Another means of taking grouse was by locating a resting "pack" in an open prairie. The shooter, with shotgun and target rifle, crawled or advanced behind a cow or a horse. At eighty to ninety yards he took careful aim and put rifle bullets through the mid-section of several birds. When thus struck they made little commotion. When a wounded bird set up a racket the remainder took off. Often the hunter had another shot with his shotgun as the chickens misjudged direction of the rifle fire, and flew overhead. Most shooting ended by late December as birds were then in large concentrations, and were very wary.

The Prairie Chickens at a Peak

From early settlement days, row-crops and small grain were progressively more plentiful and at first, the chickens increased. Undisturbed nesting in prairie-type land intermingled with

patch farming was a requirement to increase. In 1820 when Lieutenant Kearney crossed northwestern Iowa on his way to Ft. Snelling, Minnesota, he crossed some of the best prairie chicken country. He wrote that this part of the state would never have many settlers.

By 1838 eastern Iowa was settled. Peterson (1952) reported that in 1840 Iowa produced 1,788,051 bushels of grain; 1,406,241 of this was corn. Human population was 43,112.

Growth was rapid and by 1850 the population was 192,214 while there were 14,804 farms constituting 7 per cent of Iowa. In the entire United States, 15 per cent of the land was in farms. Prairie chickens were plentiful in eastern Iowa. Usher (1922) wrote that in 1854, at Muscatine, prairie chickens brought $1.50 per dozen, the same as tame chickens.

The southern one-half of Iowa was settled by 1860, supporting a population of 674,913. Prairie chickens were nearing the peak in numbers for Iowa. History of Davis County (1927) records that about 1860 the chickens were there in spring and fall, "In the frosty biting fall mornings in flocks they were flying here and there. The fences were all of rails. They liked them for lighting places and sometimes for 25 or 30 rods they would line the top rail."

The human population of Iowa reached 1,194,020 by 1870. By 1874 Illinois reported that already the peak in the chickens had passed. In eastern Iowa there was yet some excellent chicken shooting. Harlan (1942) wrote of a hunter and friends who took 40 chickens at one time while hunting near Clinton. In 1875 the same shooter took 171 chickens during the hunting season. Later he wrote that he took 52 chickens. Stage of settlement in the area at that date is reflected in his note that they "came near getting lost on the 'prairies'." While shooting flourished in some areas a decline must have been anticipated because in 1878 Iowa imposed the first bag limit in the Nation. Only 25 birds could be legally taken per day.

Peak and Deadline

Human population of Iowa in 1880 was 1,724,715. Undoubtedly this was the peak period for the pinnated grouse in much of Iowa. At this same time, in Missouri, some comments were: "410 chickens shot in one 30-acre field . . . countless numbers . . . roosts extending for over a mile with birds wedged together . . . in trees as thick as blackbirds." To the east of Iowa, in Illinois, the birds dwindled and in the August 27, 1881, issue of *American Field Magazine*, readers were advised to go "west of the center of Iowa and Minnesota" to have good prairie chicken shooting.

Musgrove (1945) recorded a report from Richard Harker,

Spirit Lake, that in the 1880's his group shot ducks, geese, and prairie chickens for the market. "We used to kill most of our chickens in the corn fields: four of us going abrest, jumping them, we used to kill enough chickens to fill our buggy [spring wagon] and we often had to hold our dogs on our laps. We used to kill possibly 200 chickens."

With a single-barrelled muzzle loader, the father of one writer (Thompson, 1937) shot 25 chickens in one day, and it was also recounted that three men shot 107 one a fly-way at Spirit Lake and that a man could get 25 pass shots in morning or evening. That did not count the thousands that you saw flying by on each side but out of gun range. In this area production was good, as is indicated by this author's account of 20-25 nests seen on one burned-over knoll.

Less successful nesting took place in southwestern Iowa. The senior author of this paper was told that at that time chicken production was limited to the 25- to 100-acre patches of prairie remaining east of Council Bluffs. During the period 1884 to 1903, young birds were seen only in two seasons. Migrants were common in the fall. Birds were most plentiful when crops were poor in Nebraska or neighboring states. One bag of 25 was reported from one flock of about 300 that settled in a corn field. An average bag was 1 to 6 per day.

By 1900 the Iowa flocks of prairie grouse had dwindled, and the human population was 2,231,853. Iowa produced 8,618,660 acres of corn. Shooting regulations were enforced only to a small degree. Drainage of the last nesting grounds was begun in the northwest.

In northwestern Iowa pinnated grouse held on for a time, but Haugen noted that according to a farmer's report, prior to 1908 water stood everywhere, but after the first drainage ditch [1908] prairie chickens were on the "way out". In another area in southeastern Iowa, an older resident of Lovilla recently told of seeing a large number of pinnated grouse in 1910 or 1911 when, in late winter for a short time, a flock of about 500 visited his cattle lot.

Restriction on bag limits was imposed before 1900, and Iowa game laws of 1913-1914 stated, "No person shall trap, shoot, or kill any pinnated grouse or prairie chickens between the first day of December and the first day of September next following." Bag and possession limits were 25.

The laws reflect the fact that chickens were seen as residents or as migrants in all quarters of the state. They were common only in limited areas. Clay Barnett of Bloomfield, Davis County, reported that flocks of 100 to 150 prairie fowl stayed by their

farm southwest of town during the fall and winter of 1914-1915. Some were booming in the spring. There were resident chickens to the east and to the west.

A curtailed season went into effect in 1915. Open season was September 1 to December 1 and bag limit was 8, possession limit, 16. In 1916 the season was closed, and in 1917 the law stated "No person shall trap or kill any prairie chickens prior to the year 1922."

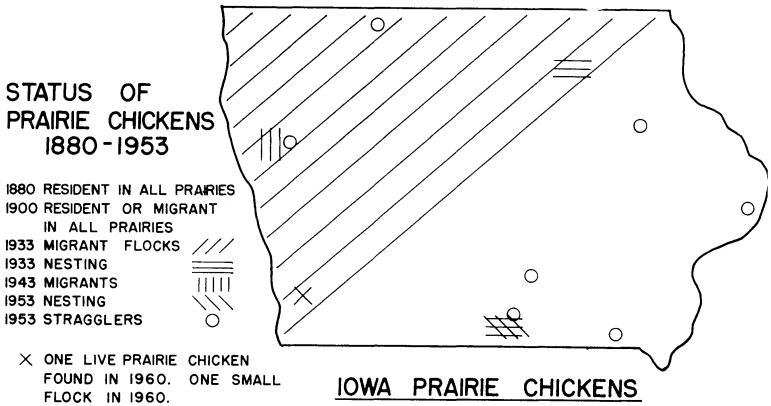

Figure 1. Status of the prairie chicken in Iowa.

By 1920 scattered nesting along borders of Iowa was the only reminder of former abundance. Human population was 2,404,021. Corn production in Iowa amounted to 10,254,589 acres. Wintering flocks continued to come into Iowa from Minnesota, South Dakota, Nebraska, and Missouri.

Last of the Migrant Flocks

By 1930, 11,165,584 acres of prairie grass has been replaced by corn. Most of the chickens seen in Iowa were migrants from Minnesota, South Dakota, Nebraska, Missouri, and possibly from Illinois and Wisconsin. A Winnebago County farmer reported the last wintering flock of prairie fowl about 1930. Breaking up of the untilled margins of marshes destroyed the last of the nesting sites.

The Iowa 25 Year Plan (1933) indicated that prairie chickens wintered in the northwestern one-half of the state (Figure 1).

About 1934, in the fall, the senior author flushed a flock of about 50 prairie chickens from an alfalfa field near the town of Harris in northern Iowa. In Winnebago County, Eden Township, a report by Green (1935-1936) shows that "one [chicken] stayed in a 60 acre corn field . . . 49 were reported by a farmer . . . On March 2 the author observed 18 . . . probably migrating back north."

Large flocks continued to appear for a time. From 1935 to 1940 an estimated 500 prairie chickens wintered south of Livermore in Humboldt County (Paul Leaverton, personal communication). Walt Trussell, conservation officer, stated that the last great number of fall migrants from west of Sioux City was in 1943 (personal communication). "However, [in 1953] I see a few scattered birds every winter."

Last of the Nesting Pinnated Grouse

Everett Speaker (personal communication) reported that in 1934 he knew of 25 prairie chickens on a booming ground on Sandbar Slough near Spirit Lake. A few other nesting prairie fowl were observed in a limited area in the northeastern part of Iowa, and a few were seen along the southern border of the state.

Last known nesting prairie chickens in Iowa were the small flocks that persisted in Wayne and Appanoose counties (Table 2). This was the upper end of a grouse range which extended into Missouri. The land retirement plan of the 1930's provided some prairie type nesting sites in addition to the grassland of the limited, though fertile, upland of Appanoose and Wayne counties. This was too wet to cultivate until it was later tiled and drained.

Table 2. Data that indicate the decline of prairie chickens in southern Iowa, 1943-1955.

Year	Number of chickens	Indication of nesting	County
1943	60	One Brood	Wayne
1945	100		Appanoose
1947	50		Appanoose
1950		Yes	Ringgold
1951	150		Davis
1951	50		Appanoose
1952	50	One Brood	Wayne
1952	100		Appanoose
1952	(large flock)		Van Buren
1952		13 Eggs	Wayne
1952	50		Appanoose
1953	20		Appanoose
1954	10		Appanoose
1955	1 (heard, not seen)		Appanoose

About 1946, residents of this area had seen flocks of 100 or more wintering chickens. Flocks of up to 1,000 were reported within a few miles of the last nesting places (Table 3).

Drainage and intensive cultivations of remaining grassland on the Appanoose County prairie grouse range progressed quickly. By 1951 the scattered flocks dwindled further. In 1952 some birds were sighted by a quail hunter in Van Buren County. Twelve

Table 3. Appanoose County prairie chicken range, 1930-1960.

Year	Percent row-crop	Percent grain	Percent pasture	Number of chickens
1930-40	20-25	20-25	50-60	*100 or more
1950	35	20	45	30
1952				50
1953				20
1954				10
1955				1 (heard, not seen)
1960	60	20	20	0

* This is an estimate based on reports of residents of the area, and from others who knew of the prairie chickens.

were seen by a farmer near Seymour (verbal report), and a brood of young was seen near the same town. In this area there was a wintering flock of 27.

Nesting prairie chickens in Appanoose County. In the spring of 1952, Sam Rodgers, Jr., graduate student at Ames, began an intensive study of the remaining prairie chickens on 3,500 acres in Appanoose County. This area was a variety of sloping and steep soils along with the prairie type Edina silt loam flatland which was a productive, though dense soil. It was being tiled to complete the drainage, preparatory to plowing the last of the grassland. Farmers realized that agricultural disturbance would destroy remaining nesting places. However, all available land was needed for tilled crops. Results of the investigation are summarized in Table 4.

Table 4. Broods and nests, Appanoose County, 1952.

Date	Number of eggs in nests	Fate of nests	Number of young in broods	Age of young	Comment
April	9	Plowed under			
June 26	10	Abandoned			
July 3	6-10	Mowed over			Damaged
June 18			8-10	2 days	1 adult
July 1			9	2 weeks	1 adult
July 10			5	2 weeks	1 adult
August 13			7	⅔ grown	No adults

The 1953 state-wide census of pinnated grouse. In 1952 there were reports of grouse in Howard County and in other parts of Iowa. Results of a questionnaire sent to officers revealed that pinnated grouse were scarce or had been absent from most counties since about 1920. The Scott County conservation officer thought these birds disappeared from his district about 1903. In a few counties they persisted until into the 1930's. Stragglers appeared in northern, western, and in southern Iowa until 1953. In 1953 a few birds were reported in Buchanan, Clinton, Delaware, and Emmet counties. Migrants were occasionally seen

in Woodbury County; and in Wayne and Appanoose counties five areas held small bands of grouse. There were unconfirmed reports of chickens in Cherokee, Guthrie and Mahaska counties.

By 1954 the only remaining pinnated grouse were on a few booming grounds in Appanoose County. In 1955 only one cock was booming. Last reports of prairie chickens, made to the senior author, were in 1960 from Mills County. A single cock was picked up there. In the same area, near the Willow Slough Public Shooting Area, a small flock was also reported. This spot was until about 1920 the roosting place for thousands of migrant prairie chickens.

The National Committee on the Prairie Chicken

Although prairie chickens have disappeared from Iowa, there is a national effort to make certain that this species will not perish from all areas. Dwight Griswold, Senator from Nebraska, in the *Congressional Record*, March 13, 1953, recommended purchase of a National Grassland Monument to be managed for prairie chickens. A committee of 15 members was formed. This included executives of fish and game commissions in states that are within the prairie chicken range. A group of grouse technicians was asked to collect information on how and where this could be carried out. Sites are now under consideration. Technicians are collecting information needed to proceed with final selection of sites, along with methods of stocking, and maintenance. This Iowa study can be considered a contribution because it points out the fact that to a certain point, agriculture benefits a greater prairie chicken population.

ACKNOWLEDGMENTS

We are grateful for Everett Speaker's notes on his observations and suggestions on arrangement, to Drs. A. O. Haugen and E. Klonglen for suggestions and contributions, to Paul Leaverton for use of his notes on grouse, and to Dr. F. N. Hamerstrom, Jr., for checking descriptions.

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