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Birds of the Great Plains: Family Tetraonidae (Grouse and Ptarmigan)

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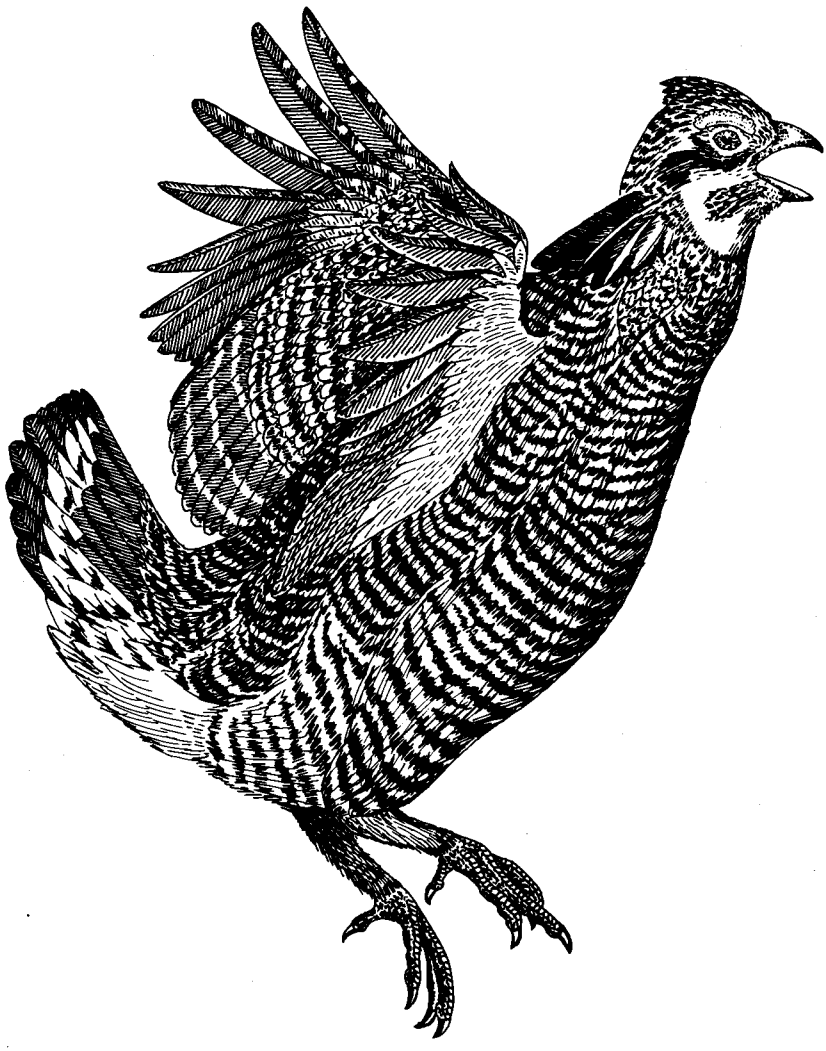
FAMILY TETRAONIDAE (GROUSE AND PTARMIGANS)



Greater Prairie Chicken

Blue Grouse
Dendragapus obscurus

Breeding Status: Extirpated. This species was collected in the Black Hills of South Dakota in the 1850s and was reported seen in 1874, but there have been no records since. An effort was made to reintroduce it in 1969 and 1974, when blue grouse from Colorado were released, but the success of this attempt is unknown. (During the 1960s two other galliform species were released in western South Dakota. These include the California quail [*Lophortyx californicus*], released in 1961, and the chukar partridge [*Alectoris chukar*], released in 1960 and 1964 in Harding and Washabaugh counties. There is no evidence that the former species has survived, but the latter was observed as recently as 1973 in Harding County.)

Breeding Habitat: Although blue grouse winter among coniferous cover in Colorado, they breed at lower altitudes; they are especially associated with habitats dominated by aspens, with a variety of shrubs and grasses.

Nest Location: Nests are typically beside logs or under low tree branches and are fairly well concealed. The nest is simply a scrape, with little or no lining.

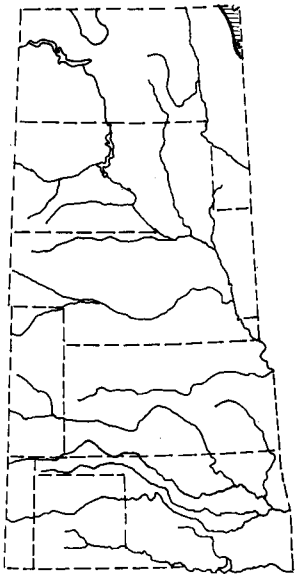
Clutch Size and Incubation Period: From 6 to 10 eggs are normally laid; they are buffy and are almost covered with brownish spots and dots. The incubation period is 26 days. Single-brooded.

Time of Breeding: Breeding dates are not available for our region, but in Colorado the published egg dates are for the month of June. Although at low altitudes eggs may hatch as early as June 1, hatching normally is 3-4 weeks later at higher altitudes.

Breeding Biology: Blue grouse are promiscuous, with the males establishing exclusive "hooting territories" in early spring. Within these rather large and well-separated territories in wooded areas, the males strut, perform other displays, and utter associated calls to attract the females for mating. The males play no further role in reproduction; the females incubate the eggs and rear the brood alone. The chicks grow surprisingly rapidly. They can fly short distances at only 5-6 days of age, and at 2 weeks old they can fly about 200 feet. By the time the young are about 2 months old the brood begins to break up, and juveniles slowly make their way toward wintering areas at higher elevations.

Suggested Reading: Johnsgard 1973; Bailey and Niedrach 1965.

Spruce Grouse
Dendragapus canadensis



Breeding Status: A local resident in northwestern Minnesota, with breeding evidence only for Roseau County.

Breeding Habitat: In Minnesota, observations indicate that spruce grouse usually breed in forest cover consisting of at least 75 percent evergreen species, and that most of these are upland forest types including cedar and black spruce. In general, open stands having an abundance of ground cover and shrubs are preferred to dense and mature stands, probably in part because the shrubs bear berries that are important late-summer foods.

Nest Location: Nests are always well concealed, often under low-hanging branches, in brush, or in deep mosses. The forest cover is typically open, mature coniferous forest or mixed coniferous and deciduous forest. The nest is a shallow scrape, lined with leaves, needles, and some feathers.

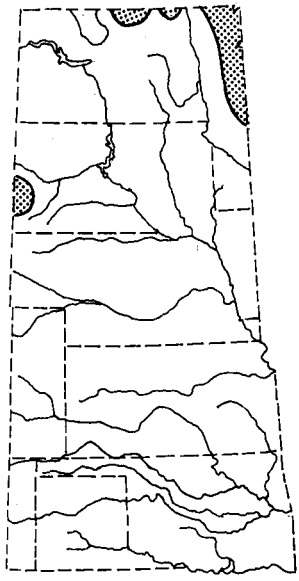
Clutch Size and Incubation Period: From 4 to 10 eggs (averaging about 6 in Nova Scotia). The eggs are buffy to cinnamon, with large brown spots. The incubation period is 21-23 days, starting with the completion of the clutch. Single-brooded; with renesting apparently rare.

Time of Breeding: Broods in Minnesota have been seen between July 7 and August 1; thus most egg-laying probably occurs in early June.

Breeding Biology: As the breeding season approaches, males become relatively sedentary and localized in territories that range from about 3 to 20 acres of forest. They use a variety of stationary and aerial displays to advertise these territories, primarily strutting conspicuously and performing short and noisy flights. In Minnesota these flights and postures have been observed in May, and no doubt they correspond to the period of female receptivity and fetilization. No pair bonds are formed, and the male probably fertilizes as many females as he can attract through his advertising displays. The female may nest within the male's territory, but he does not defend her during the incubation or brooding period. Until the chicks fledge at about 10 days of age the brooding female is highly aggressive and defensive toward her brood, performing either threatening movements resembling strutting or a sneaklike display. Sometimes males accompany females with broods, but apparently only because of a continued sexual attraction.

Suggested Reading: Robinson and Maxwell 1968; Johnsgard 1973.

Ruffed Grouse
Bonasa umbellus



Breeding Status: Breeds in west-central and northwestern Minnesota (Roseau, Marshall, Beltrami, Clearwater, Otter Tail, and Norman counties), in the Turtle Mountains and Pembina Hills of North Dakota, and in the Black Hills of South Dakota. Once also bred in the Missouri Valley of Kansas, Missouri, Nebraska, and Iowa, but now extirpated there.

Breeding Habitat: Ruffed grouse are associated with deciduous forests or with mixed forests containing aspens, poplars, and birches. Open stands or those containing small clearings with considerable berry-bearing shrubs are more valuable to grouse than stands lacking a well-developed understory.

Nest Location: In a study involving more than 1,200 nests in New York, the base of a large hardwood tree seemed to be the most consistent choice for a nest site. Other locations include tree stumps, logs, bushes, or brush piles. The nests are usually close to a forest opening, on fairly level ground, and offer a combination of visibility, protection, and an escape route. Most nest sites are rather well lighted, with an open forest canopy and relatively open shrub cover nearby.

Clutch Size and Incubation Period: From 9 to 15 eggs (averaging 11.5 in New York for initial nesting attempts). The eggs are buffy, sometimes with a few small brownish spots. The incubation period is 23–24 days, beginning with the last egg. Single-brooded. Renesting efforts are somewhat frequent in New York, although second clutches tend to be smaller.

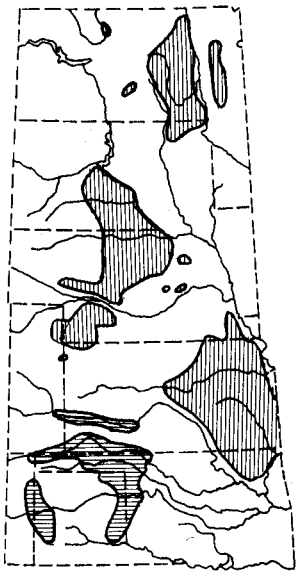
Time of Breeding: Minnesota egg dates are from May to June 17, and dependent young have been seen from June 6 to July 16. The nesting season in the Black Hills is from May to early August, with egg dates as early as May 2 and broods seen as late as August 16.

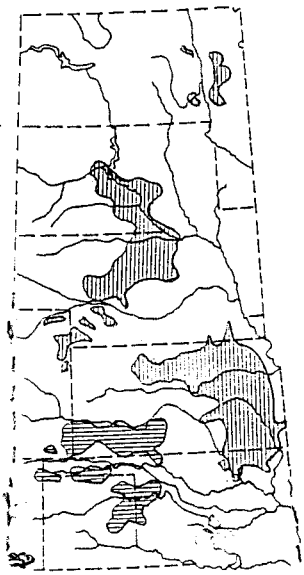
Breeding Biology: As the breeding areas become free of snow, male grouse establish territories that usually include a clump of aspens and one or more "drumming logs" from which they display daily. The drumming behavior of this species is a ritualized form of flight display; the bird does not leave the ground, and the sound generated by wing-beating attracts females to the log. When a female (or another male) appears, the male begins an elaborate strutting behavior that is a ritualized form of threat, leading to copulation if the intruder is a female or to fighting if it is another male. After mating the female selects a nest site that is usually near a clump of male aspens that provides a food source during incubation. After hatching the young grow rapidly. They can fly short distances after 10–12 days, but they remain with

their mother until they are about 4 months old, when the juveniles begin to disperse.

Suggested Reading: Johnsgard 1973; Bump et al., 1947.

Pinnated Grouse (Greater and Lesser Prairie Chickens) *Tympanuchus cupido pinnatus and T. c. pallidocinctus*





Breeding Status: This grassland species once bred throughout the region, but the greater prairie chicken is now localized and restricted to west-central and northwestern Minnesota (Clay, Norman, Wilken, Polk, and Mahnomen counties), eastern North Dakota (mainly Stutsman, Grand Forks, and Barnes counties), south-central South Dakota (mainly Lyman, Tripp, and Gregory counties), the eastern Sandhills area of Nebraska, eastern Kansas, and adjacent northeastern Oklahoma. The lesser prairie chicken (considered by the A.O.U. to be a separate species) occurs in sandy areas of southwestern Kansas, western Oklahoma, southeastern Colorado, the Texas panhandle, and northeastern New Mexico.

Breeding Habitat: Greater prairie chickens are associated with native grasslands and with combinations of native grasslands and grain croplands, where the proportion of croplands is fairly low. The lesser prairie chicken differs somewhat in that it needs brushy vegetation such as sagebrush, shinnery oaks, and wild plums for summer shade, winter protection, and supplemental foods.

Nest Location: Greater prairie chicken nests are typically in grassy, open habitats such as ungrazed meadows or hayfields, usually in fairly dry situations, but sometimes are in brushy vegetation and occasionally in open woods or the edges of woods. Nests of the lesser prairie chicken are usually between clumps of bunchgrass under shrubby vegetation no more than 15 inches tall. The nest is a shallow scrape, usually lined with leaves and grasses.

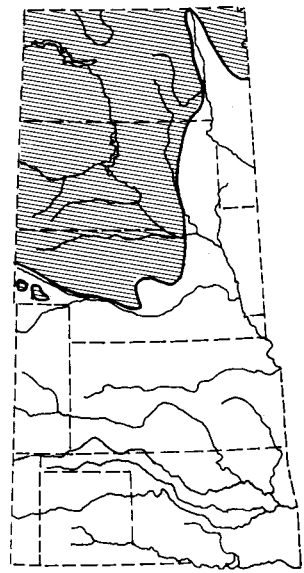
Clutch Size and Incubation Period: From 9 to 14 eggs (7 North Dakota clutches of the greater prairie chicken averaged 11.4, and 7 Oklahoma clutches of the lesser prairie chicken averaged 10.7). The eggs are buffy to olive, usually with small darker spots. The incubation period is 23-26 days. Single-brooded, but with some renesting.

Time of Breeding: North Dakota egg dates are from April 28 to July 1, with young seen from May 31 to July 27. Kansas nesting dates are from May 1 to June 10 for the greater prairie chicken. Oklahoma egg dates for the lesser prairie chicken are from May 16 to June 8, with hatching dates from late May to mid-June.

Breeding Biology: Male prairie chickens establish individual territories in early spring on communal "booming" or "gobbling" grounds and perform their distinctive displays every day for several months. Females are attracted to birds holding central territories, the "master cocks," and such birds are able to mate with most females. After fertilization the female lays her clutch, and incubation begins at about the time the last egg is laid. Until they are about a week old the chicks are brooded much of the time, but they are highly precocial and can fly in less than 2 weeks. Families gradually disintegrate when the young are about 6–8 weeks old.

Suggested Reading: Johnsgard 1973; Schwartz 1945.

Sharp-tailed Grouse
Tympanuchus phasianellus

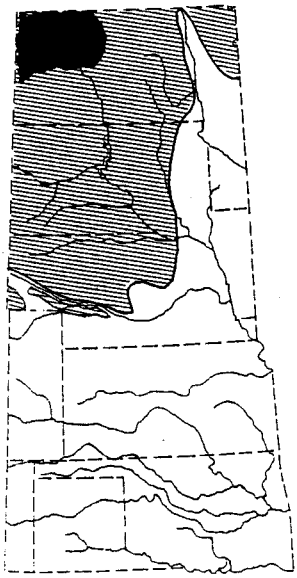


Breeding Status: Resident breeder locally in northwestern Minnesota, most of North Dakota excluding the Red River Valley, the western three-fourths of South Dakota, and the Nebraska Sandhills and adjoining plains areas. A remnant population may occur in northeastern Colorado (Yuma County), but the species is evidently extirpated from Kansas, where it once occurred at least as far east as Ellis County, and also from northwestern Oklahoma. There was also a remnant population in Colfax County, New Mexico, that is now probably extirpated.

Breeding Habitat: The Great Plains race of this species is adapted to a grassland habitat where trees are rare or absent. Native grassland vegetation interspersed with from 5 to 30 percent bushy cover is a preferred habitat type in North Dakota and probably elsewhere through this region.

Nest Location: In North Dakota, 10 of 22 nests were in unused prairie vegetation, 10 were in unused alfalfa or sweet clover, and grain stubble and hayfields accounted for the others. Vegetation at nest sites is usually at least 12 inches tall. Studies in Michigan indicate a preference there for nesting near shrubby or woody cover and in sites varying from open to 75 percent shaded. The nest is a shallow scrape lined with grasses, leafy materials, and a few feathers.

Clutch Size and Incubation Period: From 7 to 18 eggs (29 North Dakota nests averaged 11.9). The eggs are buffy to brownish, usually with a few small darker spots. The incubation period is 23–24 days, starting with the completion of the clutch. Single-brooded, with infrequent efforts at renesting.

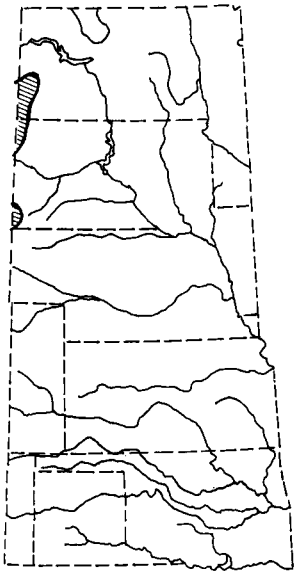


Time of Breeding: North Dakota egg dates range from April 29 to July 28, and dependent young have been seen from May 22 to September 11. In Minnesota, eggs have been reported from May 10 to June 22. In South Dakota the nesting season is from May through July, and broods are seen from mid-June to mid-August.

Breeding Biology: By late February or March, when snow melts from hilltops, male sharp-tailed grouse begin to assemble and establish or reestablish territories in a communal display area, or "lek." Older, more experienced males tend to occupy the more central and desirable territories, sought out by females when they arrive for fertilization. Most of the males' elaborate "dancing" behavior is thus directed toward the other males and consists of ritualized hostile behavior, though a few displays and calls are reserved for females. Females visit the leks only long enough to be fertilized, and the males take no further part in reproduction. The young hatch simultaneously and soon leave the nest to begin feeding on small insects. They can fly short distances by the time they are 10 days old and may move a quarter-mile in a day even before fledging. They are nearly independent by the time they are 6-8 weeks old and often disperse considerable distances at that time.

Suggested Reading: Lumsden 1965; Sisson 1976.

Sage Grouse
Centrocercus urophasianus



Breeding Status: A local resident in southwestern North Dakota, adjacent northwestern South Dakota, and also southwestern South Dakota. Probably extirpated as a breeding species from adjacent northwestern Nebraska, but displaying birds have recently been reported from Sioux County.

Breeding Habitat: Sage grouse are never found far from sagebrush, both during the spring display and during the summer nesting period. They usually breed in semiopen stands of sage, with a diversity of other species, including grasses, broad-leaved weeds, and herbaceous legumes.

Nest Location: Nests are nearly always under sagebrush. Stands that have 20-30 percent canopy coverage seem to be preferred, and the average height of sage plants used for nest cover in Montana was about 16 inches, or significantly taller than those in adjacent areas. The nests are shallow scrapes, well lined with grasses and sage leaves.

Clutch Size and Incubation Period: From 5 to 9 eggs (averages in various states range from 6.8 to 7.5). The eggs are generally pale

olive buff with small brownish spots. Incubation begins with the final egg and lasts 25–27 days. Single-brooded, with very limited renesting.

Time of Breeding: In North Dakota eggs have been reported in mid-May, and broods are reported from late May to late July.

Breeding Biology: From early spring onward, large groups of male sage grouse assemble on traditional "strutting grounds" in open sage country, where they compete for territories and where females later come for fertilization. Typically a single "master cock" dominates each display ground and accounts for most of the matings there. The male displays are complex and highly stereotyped but include stepping, wing-brushing movements, and a series of rapid inflations and deflations of the esophageal "air sacs," with associated plopping sounds. Females are attracted to such groups of males just before their egg-laying period, and most mating occurs at about sunrise. After copulation, the female leaves the strutting ground and probably does not return unless her clutch is destroyed. She usually nests some distance from the display ground, and abut 10 days are needed to complete a clutch of 8 eggs. Males do not take part in incubation or nest defense, and the chicks hatch in a highly precocial condition. Their mother quickly moves them to moist areas where insect food is plentiful, and they fledge rapidly, in less than 2 weeks. However, they usually remain with their mother for most of the late summer, gradually becoming more independent. Eventually the birds are forced to move to their wintering areas, which are usually at lower elevations and may be 50 miles or more from the nesting areas.

Suggested Reading: Patterson 1952; Johnsgard 1973.