

CHARACTERISTICS AND STATUS OF RUFFED GROUSE AND BLUE GROUSE IN COLORADO

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In recent years, interest in the presence or absence of Ruffed Grouse (*Bonasa umbellus*) in Colorado has increased. This interest was heightened with the reported observation of a single Ruffed Grouse near Hayden, Routt County, in 1971 by P. Lehner (Martin et al. 1974). Subsequently the Colorado Field Ornithologists Official Records Committee accepted the 1971 sighting and a 1947 observation of a female with three young near Hermosa Park, La Plata County (Reddall 1976). Ornithologists have not been alone in their interest in this species, as hunters and conservation agency personnel have periodically discussed prospects for the introduction of Ruffed Grouse into Colorado. Presently one land management agency is justifying in part its program of Quaking Aspen (*Populus tremuloides*) manipulation in Colorado on the basis that it will benefit Ruffed Grouse. In view of this interest we felt it was timely to clarify the known status of this species in Colorado. To fully understand the complexity of the situation it was also necessary to review the status of another forest dwelling Colorado tetraonid, the Blue Grouse (*Dendragapus obscurus*), and compare important characteristics of the two species.

HISTORICAL REVIEW AND ANALYSIS OF RUFFED GROUSE OBSERVATIONS

Cooke (1898) and Sclater (1912) reported that one Ruffed Grouse was collected from a small flock and that several were seen 18 miles south of Denver in December 1894 and others were seen on 3 January 1898 near Sweetwater Lake, Garfield County. This specimen has since been lost. Cooke (1900) later reported seeing a family of old and young on 12 August 1899 on South Fork in Estes Park, Larimer County, at 2,740 m elevation. The next record was from 27 July 1947 of a female with three young in Hermosa Park, La Plata County (Reddall 1976). At about the same time (1947-1949) P. Gilbert observed a female with young in the Uncompahgre National Forest, Montrose County (Bailey and Niedrach 1965, P. Gilbert pers. comm.). P. Lehner reported observing, on 4 June 1971, a lone Ruffed Grouse feeding on the blossoms of serviceberry (*Amelanchier* spp.) southeast of Hayden, Routt County (Martin et al. 1974). More recently, unpublished observations of Ruffed Grouse have been reported from near Salida, Chaffee County, and Dolores, Montezuma County. Photographs of the reported Ruffed Grouse from

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Columbia Peak (4,000 m) and Turner Peak (3,660 m), Chaffee County, have been carefully examined by us. Both sightings indicate female Blue Grouse with young. The written description of the 1947 observation of a female and three young in Hermosa Park, La Plata County, has also been carefully reviewed. The description, observed behavior and habitat suggest that this observation involved Blue Grouse. G. Gullion (pers. comm.) investigated the reported sightings near Dolores and found male Blue Grouse using logs as display sites.

The AOU Check-list (1957) includes northwestern Colorado in the range of the Ruffed Grouse, however references dealing specifically with grouse distribution in North America (Aldrich and Duvall 1955, Aldrich 1963) do not indicate that this species has occurred in Colorado in recorded history. No specimens are known from the state (Bailey and Niedrach 1965) and neither specimens nor photographs of this species from Colorado are known to us.

Despite reported observations and conjecture there is no tangible evidence of the presence of Ruffed Grouse in Colorado either presently or in recorded history. In our opinion all known observations supported by written descriptions and/or photographs clearly depict Blue Grouse, usually females with young. Extensive field work by the authors in Colorado since 1965 has provided no evidence of Ruffed Grouse anywhere in the state. Our examination of large samples (over 10,000) of wings from hunter harvested grouse collected at check stations, volunteer wing collection barrels, mail wing surveys and field bag checks from throughout Colorado in recent years has provided no evidence of Ruffed Grouse.

STATUS OF BLUE GROUSE IN COLORADO

The presence and distribution of Blue Grouse in Colorado has been well documented (Steinhoff 1956, Rogers 1968) with older records being summarized by Bailey and Niedrach (1965). Aldrich (1963) presented the distribution of the eight recognized subspecies of Blue Grouse of which only one (*D. o. obscurus*) occurs within Colorado. Because of the secretive nature of the species, Blue Grouse are not commonly observed by birders, despite being found in 43 of the 63 counties in the State. Recent investigations in northwestern Colorado by Hoffman (1978) indicate densities averaging 20 to 30 birds per square kilometer of suitable breeding habitat.

CHARACTERISTICS

Body features of Ruffed and Blue grouse are similar. Both have stout bodies with short, rounded wings, and a long fan-shaped tail with a distinct band. Females of both species display a head crest when excited and their coloration is somewhat similar. The two species may occupy

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similar or adjacent habitats and have some common behavior patterns. Potentially adding to this confusion is yet another species, the Sharp-tailed Grouse (*Pedioecetes phasianellus*) that may also be found in close association with Blue and Ruffed grouse. Chances of misidentification are great and proper identification requires knowledge of the habits and distinguishing features of the species.

Body length and weight of Blue Grouse range from 454 to 584 mm, and 681 to 1362 gm, respectively (Rogers 1968). Comparatively, the Ruffed Grouse is smaller, with physical measurements of 381 to 482 mm (body length) and 454-681 gm (weight) (Edminster 1947). Whereas males of both species are typically larger and heavier than females, this characteristic is most pronounced in Blue Grouse.

Dorsal plumage coloration of the male Blue Grouse is a scaly, grayish-brown on the upper tail coverts, rump and lower back becoming more bluish-gray on the upper back and nape. Buffy or gray vermiculations occur on the upper wing and tail coverts and along the flanks, where a broken pattern of white, black, and bluish-gray markings predominate. The tail is black with a distinct, gray, terminal band. Ventrally, the breast is a mixture of bluish-black and white changing to slate gray and white on the abdomen. Underwing and tail coverts are mostly gray and white. Bases of the cervical feathers located laterally on the neck are white on males and grayish-brown on females. Dorsally, females have a mottled brown background broken by a pattern of white, black, and grayish-brown markings. The breast is brownish-gray grading into a mixture of slate gray and white posteriorly. The tail varies from brownish-black to black with a narrow, light gray, often indistinct and heavily speckled terminal band. Buffy barring frequently occurs on the central two tail feathers.

Ruffed Grouse occur in two color phases, red and gray. Sexes are similar, with males being slightly larger. In the Rocky Mountains gray phase Ruffed Grouse predominate. Dorsal color of this phase is grayish-brown with a broken background pattern of black and white markings. The ventral coloration is grayish-white grading into a mixture of brown or blackish-brown bars on the flanks. Field identification is best made by the distinct, black, subterminal tail band bordered by narrow bands of gray, and the black ruffs on each side of the neck. Males have a more prominent ruff than females, but this distinction is not easily seen in the field. The subterminal tail band of females is broken in the center, whereas males have a continuous band.

HABITATS

Species as widely distributed as Ruffed and Blue grouse occupy diverse habitats. Blue Grouse are commonly associated with coniferous

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forests as most winter within this habitat type. Breeding Blue Grouse prefer semi-open to open stands of conifers or aspen with an understory of shrubs or young trees. These open woodlands adjacent to coniferous forests are preferred during spring, summer and fall.

Ruffed Grouse prefer the aspen-shrub type in the intermountain area. The best areas are composed of uneven age stands of aspen supplemented by scattered or adjacent conifer stands, small openings and a mixture of shrubs varying in density and height. In Wyoming and Utah such areas usually occur along stream courses or in scattered pockets of varying size separated by expanses of unsuitable habitat.

Throughout much of the western range of Ruffed Grouse, the species overlaps with Blue Grouse. Where this situation occurs, Ruffed Grouse utilize more dense, mesic, aspen-shrub sites, whereas Blue Grouse are found in more open, xeric, conifer-shrub or mixed conifer-aspen-shrub types at higher elevations. All these types occur in Colorado and all are heavily utilized by Blue Grouse.

HABITS

Both Blue and Ruffed grouse have a promiscuous mating behavior. Males occupy territories and perform elaborate displays to advertise their presence and attract females for mating. Displays of Blue Grouse consist of flutter flights, strutting and hooting (Rogers 1968). Ruffed Grouse also strut during courtship activities, but drumming is the primary display (Edminster 1947). Males of both species exhibit a high fidelity to their territories and certain sites within the territory are preferred for display.

Like other tetraonids, Blue and Ruffed grouse are ground nesters. With initiation of incubation and subsequent hatching of chicks, hens lose interest in courtship and males soon abandon their territories. Whereas the male Ruffed Grouse may center his summer activities around the territory, male Blue Grouse move uphill to summer near mesic areas along ridgetops. Female Blue Grouse with broods seek out moist areas characterized by a mixture of shrub thickets, open meadows, and stands of trees where vegetation is lush and insects and fruits are abundant. Ruffed Grouse broods utilize areas with similar site characteristics but where brushy cover predominates.

Brood breakup and dispersal occur in late summer and early fall and individuals of either species may be found almost anywhere. With snowfall in late fall, individuals of both species change from primarily ground dwellers to arboreal habits and seek denser cover. Blue Grouse switch to an almost exclusive diet of conifer needles and buds and are closely associated with coniferous forest types until early spring. Ruffed Grouse also prefer conifers for winter cover but conifer needles are not

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important winter food for this species. Instead it feeds on the buds of adjacent trees and shrubs such as aspen, Western Choke Cherry (*Prunus virginiana*), serviceberry and willow (*Salix* spp.).

CONCLUSIONS

Many characteristics of Ruffed and Blue grouse are similar. Whereas Blue Grouse are larger, appear grayer in coloration and have different habitat requirements than Ruffed Grouse, enough overlap occurs to make species identification difficult. This is especially true of females with young in shrub or dense habitats.

We conclude that Ruffed Grouse do not occur anywhere in Colorado and that all reported observations have been of Blue Grouse and/or Sharp-tailed Grouse. In light of the limited flight capability of Ruffed Grouse (Palmer 1962, Moran and Palmer 1963) and the large expanses of unsuitable habitat between Colorado and established populations in extreme southwestern Wyoming and adjacent northern Utah, it is highly unlikely that even dispersing individuals would survive to reach Colorado as stragglers. Obviously the ecological barriers and distances between occupied habitats northwest of Colorado and habitats that superficially appear suitable for Ruffed Grouse within the state have been insurmountable. It is unlikely that ecological conditions will change to allow natural colonization of this species within the state even providing that conditions in Colorado are suitable.

In view of the lack of tangible evidence (specimens or photographs) and ambiguity of reported or published observations of Ruffed Grouse in Colorado, the current Colorado Field Ornithologists Official Records Committee recently decided to remove the Ruffed Grouse from the list of birds of Colorado (Robert Andrews pers. comm.). Most recently, Colorado Field Ornithologists (1978) excluded the Ruffed Grouse as an inhabitant of Colorado and included it among several species recorded in the state only on the basis of sight records, but not within the past 15 years.

ACKNOWLEDGMENTS

Several colleagues, especially Jerry Cebula and Gordon Gullion, stimulated our interest in Ruffed Grouse. We acknowledge their contribution in motivating us to prepare this review. Howard Funk and Ronald Ryder critically reviewed a draft of the manuscript and were quite helpful. The Official Records Committee provided access to their files on Ruffed Grouse for which we are grateful. We accept all responsibility for rejection of reported observations of Ruffed Grouse in Colorado. This is a contribution from Colorado Federal Aid in Wildlife Restoration Project W-37-R.

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Accepted 28 September 1978



Sketch by Narca A. Moore