



United States  
Department of  
Agriculture

Soil  
Conservation  
Service

517 Gold Ave., SW  
Room 3301  
Albuquerque, NM 87102

April 3, 1989

BIOLOGY TECHNICAL NOTE NO. NM-37  
190

SUBJECT: ECS - BIOLOGY - BLUE GROUSE

Purpose. To distribute habitat and life requirement information obtained from recent literature. This information will be useful in planning for the improvement or preservation of blue grouse habitats.

Effective Date. When received.

Filing Instructions. File in Biology Technical Note binder.

*Bob McQueen*

Bob G. McQueen  
State Resource Conservationist

Enclosure

DIST:  
AC - 1  
C - 1



The Soil Conservation Service  
is an agency of the  
Department of Agriculture

## BLUE GROUSE

The blue grouse, also called the dusky grouse, is a native game bird of New Mexico. Grouse populations occur in the Sangre de Cristo, San Juan, Jemez, San Francisco, and Mogollon Mountain ranges. There have been infrequent sightings reported in the Sandia, San Mateo, and Magdalena Mountains.

The blue grouse is associated with the mixed conifer and spruce-fir forest types at elevations from 7,500 feet to timberline. There are apparently suitable habitats in other mountains of the state which do not presently support populations of blue grouse.

Blue grouse exhibit an unusual seasonal migration, spending the winter months in dense conifer stands at higher elevations and moving to semi-open timber at lower elevations in the early spring. Male birds establish a one to two acre breeding territory near openings and edges. The mating call of the male is a distinctive "hooting."

Following mating the males move back to higher conifer zones. Nesting occurs on the ground in grassy openings within the forest. Young are hatched in July and August and remain within the openings until the onset of cold weather when they start moving to higher country.

#### Habitat Needs

Food: The diet of adult blue grouse is composed largely of plant material. A great variety of plant species are utilized; however, the bulk of the food supply consists of wild pea, vetch, oakmast, raspberry, aspen, dandelion, currant, and Douglas fir. During the season of active plant growth, grouse feed on green leaves, flowers, fruit, and seeds. Insects, primarily ants, caterpillars, and grasshoppers will make up 7 to 10 percent of the diet.

During the winter months, the blue grouse feeds almost exclusively on the needles and buds of Douglas fir, but will also feed on needles of other fir species, pines, and spruces.

The diet of chicks and juvenile birds is composed of a much larger percentage of insects. For a period of six to eight weeks, from July to September, the rapid physiological development of the young birds is dependent upon the availability of an ample supply of insects.

During the fall, grouse will concentrate to feed on the berries of chokecherry, currant, elderberry, serviceberry, or other fruiting shrubs.

Page 2

### Cover

Winter cover requirements are satisfied by the dense conifer habitats which also supply the primary winter food source.

Nesting females select sites within or along the edges of grassy forest openings. The broods are raised entirely within these openings. Since grasses are not utilized as food, it is believed that the use of tall grass meadows and parks by broods reflects the availability of insects within this vegetative type.

The presence and distribution of tall grass openings within mixed conifer or spruce-fir forest types has been considered as one of the limiting factors in maintaining high blue grouse populations.

Research indicates that grouse seldom attempt to nest or raise broods in openings where the grasses are not at least 10-14 inches in height. It is theorized that tall grass cover provides frost insulation, allowing for an early and continuous hatching of insects which provide the food specifically required by young grouse.

### Water

Blue grouse are able to obtain moisture from succulent vegetation. Grouse may be totally independent of free water sources. However, their habitats normally contain springs, streams, or snow, and the availability of water is not considered limiting.

### Planning For Habitat Improvement

Forested areas which furnish suitable habitat conditions for the blue grouse are usually being managed primarily for timber production or livestock grazing; frequently for both. Therefore, habitat preservation or improvements must be planned to be compatible with these primary management objectives.

The key to perpetuating grouse populations is the maintenance of relatively small, scattered areas in an early successional stage within the forest. These openings or edges will provide essential nesting and brooding areas as well as being the source of most of the foods during other than the winter period.

Page 3

Existing grassy parks or meadows; deciduous shrub and tree thickets along streams, roads, or in burns; and aspen groves need preservation from heavy livestock grazing or invasion by conifer trees if they are to retain their values for grouse production.

Where grassy openings or deciduous shrubs and trees do not occur within a large conifer stand, openings must be made. Planning of a timber sale in the spruce-fir type can be designed to provide a number of well spaced logged openings and road clearings. Following logging, reseeding of openings with adapted tall grasses will accelerate the conversion to suitable habitat for nesting and raising of broods. Edges and stringers of wet soils may be planted with fruiting shrubs if the area is deficient in this food supply. The planting of forest trees in logging openings will shorten the number of years of suitability for grouse brooding.

Management of grazing intensity on these small openings is admittedly difficult. Livestock tend to concentrate in the openings and heavily utilize the forage. Normal season of grazing at these elevations is June to October. The design of a grazing management system which provides for the yearly exclusion of some grassy openings, while allowing for proper grazing utilization of other openings, is needed.

A planned grazing system which alternates one year of grazing with one year of rest will provide for better grouse habitat than will a system of grazing every year.

When a grazing unit is properly utilized on the key grazing areas, there will normally be acceptable forage for grouse brood rearing sites located away from the livestock waters.

Fencing of small openings, or the edge portions of larger openings, is probably the most realistic approach to preserving key grouse brood areas within a grazing unit. Excluding livestock from one to two acre tall grass openings for each quarter section of suitable grouse habitat should provide for maintenance of grouse populations.

There does not appear to be any need to develop sources of water specifically to enhance grouse habitat.

#### Applicable Conservation Practices and Measures

The following practices may be applied in order to preserve or improve habitat for blue grouse: Livestock exclusion, wildlife upland habitat management; and as a component of planned grazing systems.

On land where woodland is the primary land use and timber is harvested according to a plan which provides for creating openings and widened access roads which are to be seeded for blue grouse habitat, the practice, woodland improved harvesting is applicable.

#### Related Management

Blue grouse contribute to recreational hunting opportunity in New Mexico. Annual harvest for the period 1963-1973 averaged between 1500 and 2200 birds. The average hunter bagged only one bird for each day of hunting.

The most productive grouse habitats are in the San Juan and Jemez Mountains.

The New Mexico Department of Game and Fish has attempted to establish or reestablish blue grouse into unoccupied areas of suitable habitat. Wild-trapped birds have been released in the White Mountains and on Mount Taylor. These transplants have not been considered successful, and additional releases are not being planned.

Grouse populations are subject to cyclic fluctuations which may greatly reduce or increase its numbers. Management cannot eliminate this characteristic of the bird. Hunting pressure is not believed to be a limiting factor of grouse populations.