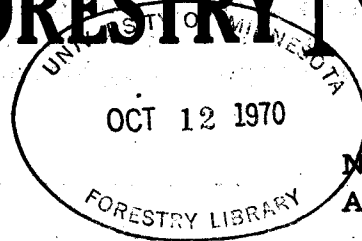




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RUFFED GROUSE ON THE CLOQUET EXPERIMENTAL FOREST

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Studies of the occurrence of ruffed grouse (Bonasa umbellus), recognized as the foremost forest game bird in the United States, have been made on the Cloquet Experimental Forest, Carlton County, Minnesota, by cover types since 1931. A previous report (2) presented data through 1948. The data on which this report is based were gathered by upper-class forestry students under the direction of the senior author during the spring quarters of 1946 through 1952. The data were recorded by students as they carried out normal forestry field projects on forties assigned to them. In some cases the same bird was undoubtedly flushed at different times so that the data show only relative cover type use and have no meaning as population estimates. Field observation procedures and the cover type rating system used have been uniform since 1946.

The timbered area of the Cloquet Experimental Forest is made up of approximately 72 per cent coniferous and 28 per cent hardwood types(3) as compared to the cover type proportions which are generally found in the commercial forest zone of northern Minnesota -- approximately 40 per cent coniferous and 60 per cent hardwood(4). Furthermore, type areas on the Cloquet Experimental Forest are relatively small and well interspersed as a result of both topography and cutting practice. A further consideration in evaluating data of this report is that averages recorded have leveled out the effect of phenological variation in the spring seasons of the seven-year period concerned.

Cover type use (see Table) is expressed in percentages which compare the ratios of number of birds observed through the years to the acreage of each type in the forest. Thus the ratio .876 for aspen-birch is 24.5% of the total (3.580) for all these ratios. These percentage figures permit the comparison of cover type preferences on the basis of equal area for each type.

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- (2) Magnus, L. T. 1949. Cover type use of the ruffed grouse in relation to forest management on the Cloquet Forest Experiment Station. The Flicker, Vol. 21.
- (3) Allison, J. H. and R. M. Brown. 1946. Management of the Cloquet Forest. University of Minnesota Agricultural Experiment Station Bul. 171.
- (4) Cunningham, R. N. and Forest Survey Staff. 1950. Forest resources of the Lake States region. Forest Resource Report No. 1. U. S. Government Printing Office.

The cover type preferences set forth in the following table are considered to be sound, being based on 733 observations of ruffed grouse during the May 5 through May 20 period of seven successive years. These preferences compare closely with those reported by Magnus(2).

Cover type	No. of birds observed	Type area (acres)	Ratio Col. 1 to Col. 2	Relative cover type use
	-- 1 --	-- 2 --	-- 3 --	-- 4 --
Aspen-birch	62	70.8	.876	24.5
Aspen	104	222.8	.467	13.0
Lowland conifers	108	259.9	.416	11.6
Conifer-hardwood	149	428.6	.348	9.7
Jack pine	163	559.7	.291	8.1
Mixed pine	48	189.5	.253	7.1
Norway pine	26	112.4	.231	6.5
Brush	8	42.0	.190	5.3
Lowland brush	20	131.2	.152	4.2
Tamarack	7	77.2	.091	2.5
Lowland conifer-hdwd.	23	283.0	.081	2.3
Open	4	53.5	.075	2.1
Spruce-tamarack	5	74.4	.067	1.9
Conifer slash	6	142.4	.042	1.2
Hardwood slash	0	26.5	---	---
Muskeg	0	143.7	---	---
Totals	733	2,817.6	3.580	100.0

Examination of this table shows that the aspen-birch type received highest use. Aspen, lowland conifer, and conifer-hardwood cover types ranked next. A third group -- jack pine, mixed pines, and Norway pine -- follows. The recorded relative use in the remaining types dropped off from this point.