

REPORT ON EXAMINATION OF SMALL GAME AT BLOCKADES

A number of road blockades were established at various vantage points by the Field Administration Division during the current pheasant-squirrel hunting season. The cooperation of the officers afforded us a means, not otherwise available, of handling a series of pheasants, rabbits, and fox squirrels and securing sex and age ratios on these animals. A large amount of game was taken in sections of the state where sex and age ratios are not known. Data from this source probably represents near average conditions for most of the state. Since the Rose Lake managed hunting area is subjected to a hunting pressure probably much heavier than average, it is desirable to have records, of age ratios in particular, from other localities for check and comparison. In appreciation of these facts, every effort was made to have as many Rose Lake men as possible present on blockades of the Field Administration Division. We wish particularly to thank J. I. Tawse and Everett Tucker for their courtesy and cooperation in this work.

The accompanying tabulation shows the ages and sex of all game handled on each blockade and the total of each species. Corresponding data obtained from the Rose Lake managed hunting area is included for comparison. Age determination in the pheasants was made by means of the bursa Fabricii. Location of the bursa opening was greatly facilitated by slitting the lateral walls of the anal opening. A probe then inserted in the bursa opening indicated the presence or absence of the bursa proper. In the case of old cock pheasants increased spur length proved to be a fairly reliable confirming character. No entirely satisfactory method is known for rapidly determining the age of male rabbits in the fall, and the same is true to a lesser extent for male squirrels. Consequently, the age ratio for squirrels and rabbits was obtained from females alone. The size and condition of the testes were the principal character used.

The higher ratio of old to young cock pheasants (1 adult:10.4 juveniles) handled on blockade, as compared with the ratio of male birds (1 adult:16.3 juveniles) taken at Rose Lake, is of interest. A higher hunting pressure at Rose Lake, resulting in a heavier yearly kill, and leaving fewer cocks to reach the second year of hunting, may be the explanation.

A significant difference, which is difficult to explain, is also apparent in the age ratios of female squirrels handled from the two sources. Those examined on blockade show a ratio of 1 adult:1.4 juveniles, whereas, female squirrels handled at Rose Lake are in the ratio of 1 adult:0.5 juvenile. That a low juvenile population does exist in Rose Lake squirrels was suggested by fall trapping. It was found at this time that the age ratio for all squirrels handled on the area was one adult:0.3 juveniles. This data might indicate the possible failure at Rose Lake of last year's breeding stock to produce properly. Another possible explanation might be that a heavy mortality occurred for this year's young. There is no evidence at hand to indicate the true cause of this unbalanced age ratio, but continued study may yield data from which conclusions can be drawn.

A comparison of the age ratio of rabbits taken at Rose Lake (1 adult:1.7 juveniles) with those examined on blockade (1 adult:1.4 juveniles) shows a reasonably conforming figure. When the reproductive capacity of the rabbit is considered, the juvenile number appears to be exceptionally low. A heavy loss of young rabbits is known to occur during the spring and summer, and the above ratios suggest that the mortality of young rabbits at these times may be even higher than generally suspected. Continued studies at Rose Lake should make possible a listing of the important causes of mortality and the extent of each.

The sex ratios of rabbits (86 males:100 females) and fox squirrels (89 males:100 females) checked on blockades runs heavily to females, whereas the reverse is true on the Rose Lake area, the sex ratios here being 105 males:100 females for rabbits, and 129 males:100 females for fox squirrels. This difference in sex ratios, while of interest, is not necessarily of significance. It must be borne in mind that in one instance local conditions are represented, and very general conditions in the other. It is believed, however, that the sex ratios as found for Rose Lake represent more nearly the expected ratio.

Although the exact significance of all of these figures is not readily apparent now, comparable data in future years should make possible enlightening correlatives. Since the Rose Lake area is being more heavily hunted than the average for the state, age ratios are likely to run higher to young animals. It is hoped that these ratios may, in the future, be of use in measuring the effect of hard winters, unfavorable breeding seasons, over-hunting or other factors that tend to affect the age groups differently.

Compiled by:

J. P. Linduska

C. T. Black  
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## SUMMARY OF GAME EXAMINED ON BLOCKADE.

## AGE AND SEX RATIOS AS COMPARED WITH ROSE LAKE.

Blockade - Location and Date	Pheasants--Males		Rabbits				Fox Squirrels			
	Adults	Juvenile*	Adults Females	Juvenile Females	Males	Females	Adults Females	Juveniles Females	Males	Females
Breckenridge 10-20	3	24	7	12	11	19	0	3	2	3
Elsie 10-26	2	12	2	2	7	4	1	1	3	1
Almont 10-26	31	230	17	11	27	31	7	6	21	16
Otisville 10-27	11	106	3	12	13	16	2	4	6	6
Chapin 10-27	0	32	2	2	7	5	2	1	3	3
Otisville 11-2	5	108	1	4	3	6	4	7	7	11
Almont 11-2	12	149	11	14	20	25	10	11	12	21
Muttonville 11-3	1	12	0	0	1	0	0	0	0	0
Bath 11-3	2	26	6	14	19	20	1	10	10	11
Totals	67	699	49	71	108	126	27	43	64	72

	BLOCKADE		ROSE LAKE	
	Age Ratio		Age Ratio	
Pheasant	1 Adult:10.4	Juveniles	1 Adult:16.3	Juveniles
Rabbit	1 " : 1.4	"	1 " : 1.7	"
Fox Squirrel	1 " : 1.6	"	2 " : 1.	"
	Sex Ratio		Sex Ratio	
Rabbit	86 Males:100	Females	105 Males:100	Females
Fox Squirrel	89 " :100	"	129 " :100	"

\*Refers to animals of the year.