Mr. Hatch

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AERIAL CENSUS OF BIG GAME, RIDING MOUNTAIN PARK

February - 1958

Introduction

Each winter since 1955, with one exception (1951) aerial surveys have been conducted in Riding Mountain National Park in order to follow fluctuations in the number of elk and other big game.

Banfield[1] described a situation which developed in the period leading up to 1947 when elk in the park reached a peak population and a heavy winter die-off occurred. The forage resources were so badly overused that scars of that catastrophe are still in evidence on the range.

The main purpose of a periodic big game census is to detect any increase of elk beyond a safe level. If such is detected some action can be taken to reduce the herd and so avoid a repetition of the 1947 occurrence.

Procedure

This year, all of the 33 transects originally plotted by D.G. Colls were flown. Even though past surveys were conducted in March it was decided this year to conduct it earlier when complete snow cover would make animals more readily visible. Early in January the snow cover was very light but when I arrived in Manitoba January 26 to make the survey Riding Mountain was entirely blanketed with snow. During the following two weeks, low cloud over the higher slopes prevented flying much of the time.

Transects 1-18 were surveyed on February 3 under conditions which were fairly calm, with an overcast sky. On February 4, transects 19-24 were flown under conditions of an overcast sky and variable wind. When transects 25-33 were surveyed February 6 there was a clear sky, variable wind, and fresh snow on the ground. Vegetation on transects 19-24 carried hoarfrost but on transects 25-33 this condition was sporadic in occurrence.

1 Banfield A.W.F. 1949. An irruption of elk in Riding Mountain National Park, Manitoba. Jour. Wildl. Mgt. 13 (1) : 127-134

A Cessna 170, piloted by Hector Burton, was chartered from Maple Leaf Aviation in Brandon for the operation.

Flook observed from the front seat on the right side of the plane. The left observer's position in the rear seat of the aircraft was occupied by Mr. J. Allen, Chief Warden, on February 3 and 6 and by Mr. N.G. Perret on February 4.

In order to survey a strip one-quarter mile wide, tape markers were placed on the side windows and on the wing struts at an angle of 59 degrees from the vertical. An attempt was made to maintain a height of 400 feet above the ground throughout the survey, thus the pilot did not search for animals, but concentrated on keeping the plane on course, at the correct altitude, and at an airspeed of about 85 m.p.h.

Mr. Perret judged the technique used in this survey to be comparable to that of last year's survey.

Population

The numbers of each game species counted in the current survey are presented by transect in table 1.

The area within the sample transects was 142.5 square miles; the total area of the park is 1,148 square miles.

The population estimates based on the survey are: 2653 elk, 773 moose, and 103 deer. These indicate little change in elk number, and a decline in moose. Although only six elk were seen outside the park tracks were in abundance all around the boundaries. This would indicate that elk have been leaving the park to forage.

Thirteen deer were counted on the transects this year as compared to 3 last year. This may represent an actual increase in deer numbers. All the deer which could be positively identified were whitetails. In addition to the deer counted on the transects, seven were observed just outside the park boundaries. In flights between the park and Dauphin and between the park and Brandon deer were observed fairly frequently in aspen bluffs.

Table 2 presents population estimates of elk for the east and west halves of the park in each year since aerial surveys were started in 1950. For this comparison the park area has been divided by a line running north and south. Table 3 presents similar information for moose.

Inspection of table 2 shows that elk have not consistently favored either the east or the west end of the park because from survey to survey the distribution has apparently shifted back and forth. It may be that within any one year there is considerable shift of distribution and had the survey been conducted at a different time it might have shown a different distribution.

Mr. Perret has commented that during the 1955 count the elk were hard to see because thaws had reduced the snow cover. It is believed however that the 1956, 1957 and 1958 survey estimates are fairly reliable. A peak population is indicated during the summer of 1956. Mr. Perret described the 1955-56 winter as extreme and quoted warden's reports of heavy winter mortality, followed by a low calf crop in the spring. During 1957-58 reproduction has apparently been balanced by mortality.

From an inspection of table 3 it appears that in 1950 moose were equally distributed between the east and west halves of the park. In 1951, 1952, 1953 and 1958 moose were seen consistently in greater numbers in the east half. Data concerning moose distribution are not available for the 1955, 1956 and 1957 surveys.

The estimate of 1100 moose in 1957 was the highest obtained so far in the park. Apparently, adverse conditions have reduced their numbers during the past year because the current population estimate was only 773 animals.

Management

It is the practice of the Manitoba Game Branch to open the elk season in lands adjoining the park when deep snow on Riding Mountain plateau causes elk to disperse onto adjacent private land. Cropping of surplus elk in this manner benefits all interests because it helps to stabilize the elk population and thus to safeguard against an elk buildup such as occurred in the period leading up to 1947.

To have the park staff attempt a reduction of elk in the park would be an expensive task. In the Rocky Mountain parks elk slaughters are facilitated by the winter concentrations of elk on the grassland areas in the valley bottoms though even there the operation is an arduous one. In Riding Mountain Park, during winter elk are scattered over the whole plateau and organized hunting would be too difficult to be feasible.

Recommendations

In order to stabilize the ungulate populations in the park wolves and coyotes should be preserved. In addition to their value in helping to control the numbers of elk, deer and moose, these species are interesting members of the native fauna of Manitoba and I see no justification for their removal.

The practice of the Manitoba Game Branch to adjust elk seasons to utilize elk which disperse from the park is desirable. In view of the large area of the park and the extent of its elk winter range there is no danger of depleting the elk through hunting outside the boundaries. The larger the harvest that can be removed in that way, the better, both in terms benefiting Manitoba sportsmen, and of stabilizing the park elk population.

(Sgd) Donald R. Flook

Donald R. Flook,
Wildlife Biologist.

Edmonton,
March 26, 1958.

TABLE 1 GAME OBSERVED ON TRANSECTS, 1958

Transect No.	Length (mi.)[1]	ELK			MOOSE			DEER
		Left	Right	Total	Left	Right	Total	Total
1	9	0	1	1	0	0	0	
2	9	0	0	0	0	0	0	3
3	9	0	2	2	0	0	0	
4	9	2	1	3	0	0	0	
5	9	0	0	0	0	0	0	
6	9	2	0	2	0	0	0	
7	9	0	0	0	1	0	1	
8	9	0	1	1	0	1	1	
9	10	0	3	3	0	0	0	
10	17	1	15	16	2	2	4	
11	12	0	8	8	2	0	2	4
12	16.5	12	8	20	6	0	6	
13	19	4	4	8	2	0	2	
14	19	0	3	3	2	0	2	
15	19	13	6	19	2	0	2	
16	20.5	7	4	11	2	1	3	
17	21.25	3	18	21	0	1	1	
18	19.25	0	2	2	1	0	1	
19	18	7	2	9	0	0	0	3
20	19	2	15	17	2	0	2	
21	21	8	10	18	2	0	2	
22	21	5	3	8	2	4	6	
23	24	1	2	3	2	1	3	
24	25	7	0	7	2	4	6	
25	24	26	5	31	2	2	4	
26	22	6	11	17	0	2	2	
27	20.25	10	16	26	2	3	5	
28	21.05	11	0	11	2	2	4	3
29	20.5	4	10	14	0	1	1	
30	22.5	1	4	5	1	2	3	3
31	23.0	11	13	24	0	1	1	
32	21.0	4	4	8	1	2	3	
33	17.5	13	9	22	5	2	7	
Totals	570.25	161	168	329	51	45	96	13

[1]Length of strip one quarter mile wide.

TABLE 2 ELK POPULATION ESTIMATES BY AREA AND BY YEAR, 1950-1958

Area of Park	1950	1951	1952	1953	1955	1956	1957	1958
West Half	3040	2740	2015	1375	873	2538	1620	1077
East Half	1620	1896	2637	1085	259	2755	884	1576
Entire Park	4660	4 730	4652	2460	1132	5293	2504	2653

TABLE 3 MOOSE POPULATION ESTIMATES BY AREA AND BY YEAR, 1950-1958

Area of Park	1950	1951	1952	1953	1955	1956	1957	1958
West Half	125	119	149	69	---	---	---	311
East Half	123	130	325	124	---	---	---	462
Entire Park	247	255	474	193	---	907	1100	773

CWS
58-12 Flook, Donald R.
Aerial census of big game, Riding Mountain Park.

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