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CWS-10-54

SY-10

Tener, J.S.

Aerial survey Prince Albert National  
Park. [Ottawa] 1954.

4<sup>l</sup> map (fold in packet)

1. Beaver - Population distribution - Prince  
Albert National Park. 2. Prince Albert  
National Park. 1 Title.

Aerial Survey, Prince Albert National Park - 1954

As part of the co-operative Federal-Provincial beaver mortality study, and in order to obtain some idea of the size and distribution of the beaver population in Prince Albert National Park, an aerial survey of the park was conducted October 15 and 16, 1954. In addition to beaver studies, brief examinations were made of moose wintering areas.

Itinerary

A brief itinerary is as follows:

- October 13 - arrived Park  
14 - trip along 57 Trail to examine moose winter range  
15 - aerial survey of north portion of park  
16 - aerial survey of remainder of park, boat trip to Kingsmere Warden Station  
17 - Examination of beaver lodges and sites north of Kingsmere Lake  
18 - Examination of beaver lodges and sites, Lily and Bagwa Lakes  
19 - Examination of moose browsing and of beaver lodges and sites - Beartrap Lake area and from Anglin Lake to MacKenzie Creek cabin  
20 - Short trip in morning along trail from Heart Lakes to Waskesiu Narrows  
21 - Return to Ottawa

Aerial Survey

A Cessna 180 aircraft was chartered from the Saskatchewan Government Airways. Warden Harry Genge acted as the second observer.

A total of 637 linear miles were flown along 25 transects. These were two miles apart, running in an east-west direction, as indicated on the accompanying map. Thirteen transects were flown north of Waskesiu Lake and twelve south of it.

The width of the observation trip on the ground was, as accurately as could be determined, one-quarter mile, giving a one-half mile coverage. All flights were made at an altitude of about 600 feet above ground level, at an airspeed of 100 miles per hour.

Counts were kept of the number of active and inactive lodges and dams, of cuttings not associated with lodges, and of moose, elk and deer observed. The presence of fresh feed piles was used as the criterion of active lodges. The piles were readily seen from the air. When absent, lodges appeared old, without fresh peeled logs or sticks, and dams were in disrepair.

Results

Beaver

There are important differences in the numbers of live and dead beaver lodges observed on either side of the aircraft, probably because of differences in observation techniques and in criteria used by both observers to distinguish between live and dead lodges. Figures quoted hereafter are mine, unless otherwise stated.

Table I lists the numbers of live and dead lodges recorded on each transect by both observers.

Applying the index of 1.33 lodges per square mile, based on my figures of 212 beaver observed on an area of 159 square miles, the number of lodges in the park is at least 1,900. If the combined counts of both observers are used, the calculated live lodge total is 2,036.

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(copy structure reference) *Patten's verbal statement.*

The Saskatchewan Government estimates that in their province an average of five to six beaver occupy a lodge. Applying this figure to the number of park lodges, there is a minimum beaver population of 10,000 in the park. This figure does not include bank beaver which are quite numerous. The minimum estimated beaver population, therefore, is 15,000 animals.

There is no money available in park estimates for trapping beaver this autumn, according to Chief Warden George Davies. During the course of nuisance trapping, nine beaver had been collected and skinned during the first two weeks of October. All of the skins were dark and not yet prime. It will be of interest to find out for how much the pelts were sold.

It is apparent that the <sup>annual</sup> removal of 300 to 400 beaver from the park that has occurred in past years will not materially reduce the total population. It has served, however, to limit quite effectively beaver numbers on streams where they were trapped. Because of terrain limitations, it would be a costly and arduous task to attempt to trap beaver throughout the park. In some areas, particularly north of the big lakes, it would nearly be impossible.

As in the case of the moose of the park, it would seem that natural controls may prove most effective on a long term basis in controlling beaver numbers. In some areas beaver have removed available aspen and are existing on willow, alder and even spruce and tamarack. On other beaver sites, aspen is available but is becoming increasingly difficult to obtain. In general, it appears that the beaver carrying capacity of the park was exceeded several years ago. Disease and food shortage will take an increasing toll, and many areas will undoubtedly be completely depopulated. Beaver will probably always be in the park, but in numbers much reduced from the present, once food supplies have been seriously depleted.

Selected control of beaver along highways, trails and on important fish spawning streams should be conducted as necessary. It should be realized, however, that in many cases the job will be a continuing one until the general beaver population is lower, for as a beaver site is vacated, surplus animals will quickly fill it.

There are indications from the aerial counts that the proportion of dead lodges in the northern and southern sections of the park are significantly different. There were 116 lodges counted on the thirteen transects north of Waskesiu, of which 31 or 26.7 per cent were inactive or dead. On the twelve transects south of Waskesiu, 201 lodges were counted, of which 74 or 36.8 per cent were dead, a ten per cent difference from the northern counts.

*Table*  
It is known that mortality occurred last year among beaver in the Bear Trap Creek area, transects 16 and 17, as well as in other areas south of Waskesiu River. This undoubtedly has contributed to the greater percentage of dead house observations made in the southern half of the park. A further consideration in attempting to assess the significance of numbers of dead beaver houses is that the normal or usual proportion of live and dead houses in a healthy population in the park is unknown so that it is problematical what the recent mortality has meant in terms of increased number of dead lodges. The only really depopulated area observed during the survey was along Bear Trap Creek and parts of Rabbit Creek.

If this Service can send a biologist to the park to examine beaver carcasses when the animals are skinned, I would recommend that the next beaver trapping operation be carried out next autumn. If a biologist is not available for pathological examinations, I would recommend that trapping be done next spring, to take advantage of higher prices and to remove the potential increase in pregnant females.

Lodges on Adjawaan Lake, Lone Island Lake and Poplar Creek north of Kingsmere Lake appeared quite normal when examined on the ground, as do those on Lily and Sagwa Lakes. Cuttings of poplar and willow are extensive and in some areas, such as along Poplar Creek, are quite old. The lodges on the Spruce River, between Anglin Lake and MacKenzie Creek cabin, do not show any change since the last examination in May. No lodges occupied then have since become vacant.

#### Moose

Seventy-nine moose were counted from the air during the survey. This is a considerable reduction from the 248 observed last January along much the same transects, but cannot be considered significant in terms of total population number. Although all leaves were off the trees, there was no snow on the ground and the moose were very difficult to distinguish, particularly as the main effort was directed to counting beaver lodges or dams.

Browsing surveys were made along the 57 Trail, in the Beartrap Lake area and along the Spruce River from MacKenzie Creek cabin to Anglin Lake. Heavy browsing was recorded in the two former areas but was moderate to light in the latter region. The moose population has reached the point where consideration must be given soon to reducing the number of these animals. Observations of twin calves have been numerous this summer, indicating a healthy calf increment. With a population of at least 1,000 and possibly 1,500 moose, it will not be long before the carrying capacity of the wintering areas has been exceeded. Reduction should occur before this destruction of the range occurs.

It will be difficult to attempt to control moose numbers in the park because of the large area involved. Control measures will have to be directed to wintering areas where moose aggregate, but even here success may not be remarkable. Probably the most effective control of moose numbers is the wolf, apart from forest succession changes which will eventually remove most of the presently available food.

It would be particularly valuable to resurvey the park next January to compare figures with the October and January results and to compare the two winter surveys for total counts and calf percentages. If the population is increasing as suspected, then a survey next January should yield concrete figures to prove it.

The aerial survey should also provide enough concrete information to indicate whether or not a slaughter should be conducted next year.

#### Elk

Fifty-one elk were seen, all in small groups in the southern portion of the park.

#### Deer

Only four deer were observed during the flights.

#### Summary

The aerial survey of Prince Albert National Park, October 15 and 16, involved 637 linear miles of flying along 25 transects. An index of 1.53 lodges per square mile was determined, giving a calculated total of at least 1,900 lodges. The estimated minimum beaver population in the park is 15,000 animals.

The southern half of the park is presently supporting about twice as many beaver as the northern half and has ten per cent more dead lodges.

Removal of 300 to 400 beaver each year, as in the past, will not significantly reduce the total population.

The beaver carrying capacity of the park was exceeded several years ago. Food is becoming increasingly scarce. It can be expected that in many areas of the park food shortage and disease will depopulate beaver.

Moose winter ranges are moderately to heavily browsed.

Recommendations

1. The Park Superintendent should be given authority to destroy at will beaver that damage facilities such as roads and culverts or scenic areas along trails and roads.
2. If a biologist can be assigned to collect pathological data at the next beaver reduction operation, it is recommended that this operation be carried out in the autumn of 1955. If a biologist cannot be assigned to this project; it is recommended that trapping be done next spring to take advantage of higher prices and to remove the potential increase in pregnant females.
3. The trapping quota should be 1,000 animals. A decided effort should be made to take beaver from areas not yet trapped, particularly in the southern interior along the Moose Trail and north of the big lakes, Waskesiu, Crean and Kingsmere, if only to gain first hand knowledge of conditions in these areas.
4. An aerial survey of the park is recommended at the end of next January to count moose, elk and deer. This survey should not cost more than \$500.00.

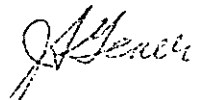
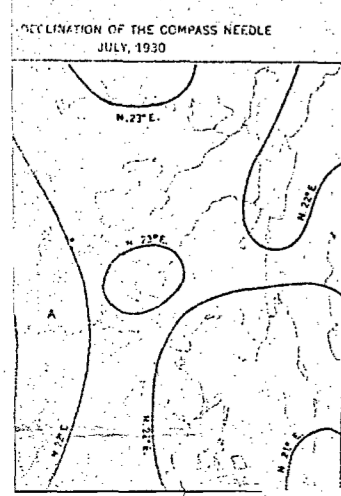
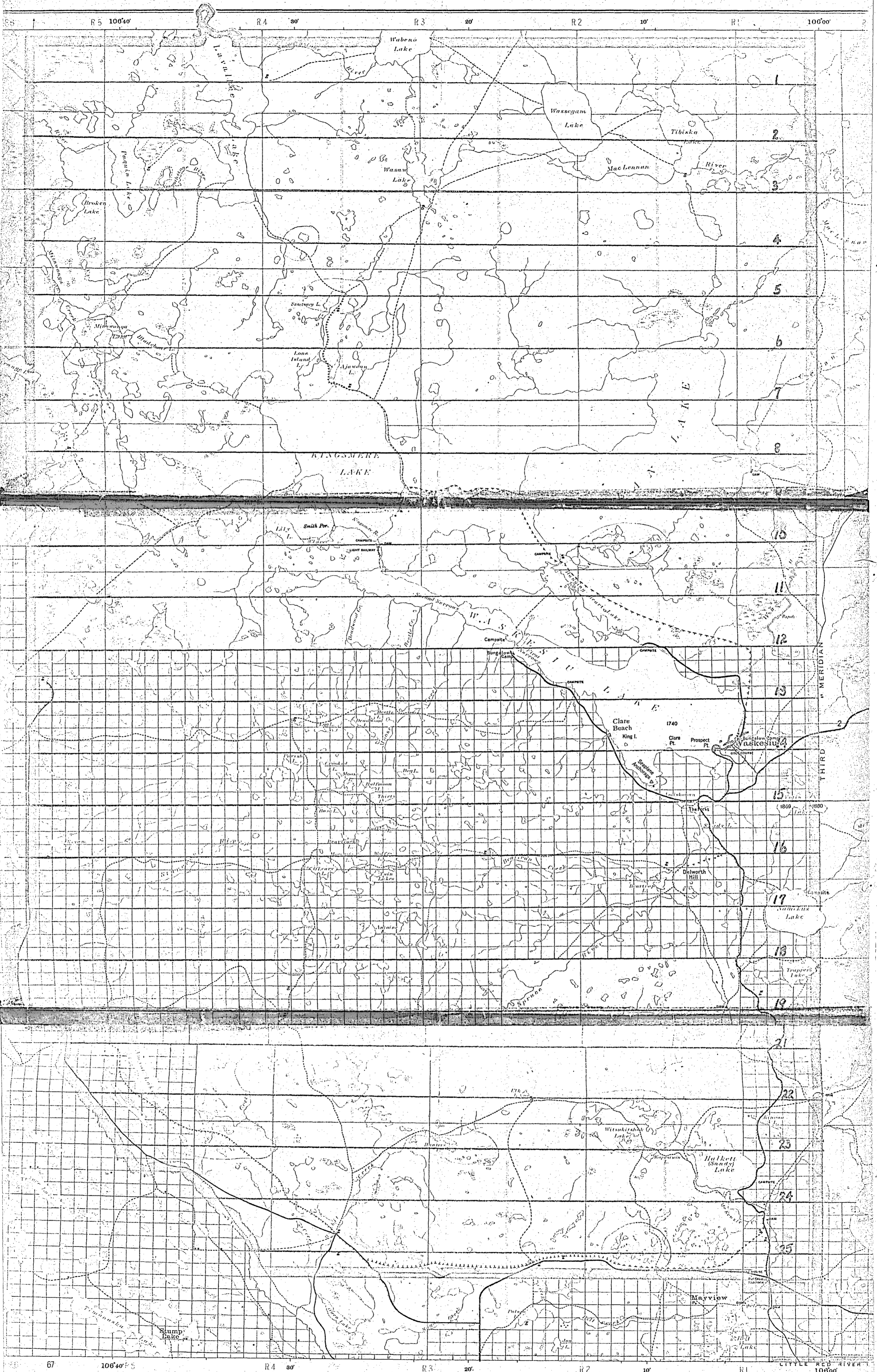
  
J. S. Tener,  
Mammalogist.

TABLE 1  
Numbers of Live and Dead Beaver Lodges

Observed on 25 Transects, Prince Albert National Park

Transects	Lodge Counts		Lodge Counts		Total Lodge Counts	
	J.S. Tener Live	J.S. Tener Dead	H. Genge Live	H. Genge Dead	Live	Dead
1	3		2		5	0
2	6	3	8		14	3
3	5	2	9		14	2
4	5	7	8		13	7
5	6	4	18		24	4
6	5		10		15	0
7	11	2	13	2	24	4
8	6		4	1	10	1
9	6	2	8	0	14	2
10	8	1	9	2	17	3
11	5	4	9	0	14	4
12	10	4	8	1	18	5
13	9	2	23	2	32	4
14	7	5	16	0	23	5
15	16	8	26	1	42	9
16	11	16	24	3	35	19
17	31	10	16	2	47	12
18	16	4	10	1	26	5
19	10	1	7	1	17	2
20	4	8	9	1	13	9
21	3	3	6	0	9	3
22	8	1	5	1	13	2
23	9	8	5	1	14	9
24	8	8	5	2	13	10
25	4	2	5	1	9	3
TOTAL	212	105	263	22	475	127





DECLINATION OF THE COMPASS NEEDLE  
JULY, 1930

Reference	Symbol
Boundary, park	—
Indian Reserve	—
Township	—
Surveyed line	—
Motor road	—
Wagon road	—
Trail or portage	—
Telephone	—
Marsh, bog or open muskeg	—
Woods	—
Bluff line	—

NATIONAL PARKS OF CANADA  
**PRINCE ALBERT PARK**  
SASKATCHEWAN

Scale 1:150,000 or 2.37 miles to 1 inch  
Miles 2 1 0 2 4 6 8 10 Miles

PERMANENT FLIGHT  
TRANSCROSS

Datum is mean sea level  
NOTE: The location of the grid lines is shown by small letters in the margin of the map. The north-south lines are marked every four miles by letters A through S. The east-west lines are marked every four miles by numbers 1 through 25.

CWS

54-10 Tener, John S.

Aerial survey, Prince

Albert National Park

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