

1M

CWS-22-53


53-22

McEwen, E.H.

Aerial beaver survey, Upper Mackenzie
Delta beaver sanctuary. [n.p., Canadian
Wildlife Service, 1953]

6 l. map.

1. Beaver - Aerial surveys - Upper
Mackenzie Delta I. Title



CWSC 109

AERIAL BEAVER SURVEY - UPPER MACKENZIE DELTA
BEAVER SANCTUARY

CANADIAN WILDLIFE SERVICE
WESTERN REGIONAL LIBRARY

This report contains data on the aerial beaver survey conducted on July 6 in that part of the Sanctuary, enclosed by the Arctic Red, Mackenzie and Peel Rivers and the 67° parallel of latitude, on the south. The objectives of this survey were as follows:

1. To determine whether the beaver were over - populated in this area.
2. To locate areas of high abundance in the open area outside the registered group areas where beaver could be live-trapped for transplanting purposes.
3. To determine the incidence of disease which has been reported in the beaver population.

The transects flown on this survey are recorded on Map 1. These lines were flown, more or less, parallel to the watercourses of the area rather than at right angles to them. Using this method and by comparing each transect, the distribution and relative abundance of beaver could be ascertained. Two observers, Warden Spreu, Fort McPherson, and myself counted beaver colonies and made observations within a quarter-mile strip. Thus the combined width of the strip of each transect was half-a-mile. The map reading along the transects was done by the pilot, M. Zubko, who did an excellent job.

The survey was flown in a "Cessna" 195 aircraft, flying at an altitude of 500 feet and a speed of 120 m.p.h. Excellent visibility and weather conditions prevailed throughout the survey, which was 200 miles in length, and 100 minutes of flying time. With little, or no wind, and "smooth" air, the altitude and ground speed remained as constant as possible.

This survey was conducted in the evening from 1936 to 2245 hours. Since beaver are active in the evening rather than in the daytime, it was hoped to utilize this characteristic to identify active lodges and from observing beaver on each strip to evaluate the incidence of disease. Also, in order to investigate the prevalence of disease, whether it was in epidemic proportions, or on a minor scale, we had planned to land on two or three lakes on each transect and examine the lake shore and lodges. Unfortunately, it was not possible to land the aircraft, since the lakes inhabited by beaver were too small and shallow. Normally, beaver are not found in large lakes.

A total of 22 beaver were seen from 2021 to 2240 hours. Since it was not possible to land and examine certain lakes on each transect, another method was used. By circling the lodge, beaver could easily be seen swimming near the lodge, or in another part of the lake. Although this is not strictly a positive method, it does indicate that beaver are not seriously depleted by disease as the reports would indicate.

Trappers at Arctic Red River and Fort McPherson were interviewed regarding sickness among the beaver population in the Sanctuary. At Arctic Red River, a trapper, who trapped 21 beaver at Traviar River, stated that the beaver were in a healthy condition and found no symptoms of disease. Nicholas and Elie Norbert, Arctic Red River, found one dead beaver respectively, and five lodges which had been opened by wolverine. They did not examine the carcasses to determine whether, it had been shot, injured by a predatory animal, or parasitized. Louis Cardinal, who trapped three beaver, found 15 vacant lodges which had been occupied last year. He does not know whether the beaver from these lodges moved to other lakes on his area. As far as could be ascertained from the interviews with the natives and R.C.M. Police only two dead beaver were found in the Sanctuary.

At Fort McPherson, 12 trappers were interviewed regarding the occurrence of a sickness among the beaver in the Sanctuary. Only one dead beaver was found. This carcass was not examined by the trapper so that whether the cause of its death was natural, or pathogenic is not known. No sick, or diseased beaver were trapped. Certain trappers, who trapped in the Yukon Territory stated that some beaver were in thin and emaciated condition and their pelts were "papery". This condition could be caused by an insufficient food supply during the winter months. One trapper stated he found 50 lodges which he believed did not contain beaver, as he was unable to trap or shoot any in these lodges. He claimed that no "feed bed" had been stored by the beaver last fall, which would indicate that the beaver had moved to another part of the lake, or other lakes. Also, some of these lakes with vacant lodges were drained, as the beaver dams were broken. He did not see any sick, or diseased beaver during his trapping operations. Six lodges were found by the trappers in the Yukon Territory, which were opened by wolverine.

It would appear from the evidence obtained on the survey and from the interviews with the natives that only a small number of beaver died from unknown causes.

At this time of year, there is a certain amount of error in differentiating between lodges which are occupied (alive), or vacant (dead). There is less chance of mistaking an occupied lodge in September as the "feed bed" is plainly visible in front of the lodge. At this time of year the "feed bed" does not contain fresh vegetation and is not visible from the air. In order to reduce this error, the lodges were observed critically through binoculars (6 x 30). One landing was made on a lake containing two lodges which were close together. From a comparison of these lodges one had been used during the winter and was presently in use, while the other was vacant. On the vacant lodge fireweed and grass were growing on the top and sides of it, the mud has been washed away leaving a network of sticks projecting from it, and the channel on the bottom of the lake to the entrance of the lodge showed signs of silting in. The other lodge had little vegetation growing on it, the sticks were covered with mud and channels used by beaver to enter the lodge were muddy. A beaver was seen swimming in this lake. Other criteria used to identify occupied lodges were: the condition of beaver dams on the lakes, runways on the shores of the lakes and whether beaver were seen swimming in the lakes. By this critical method of examination of the lodges, I believe the amount of error was slight in differentiating between occupied and old, vacant lodges.

The results of the transects are summarized in Table I. This includes a short, aerial survey made on July 4 in that part of the Sanctuary north of the Mackenzie River.

A total of 75 occupied lodges were counted in an area of 100 square miles, or approximately .75 lodges per square mile. The total area of this section, determined by counting squares, is 1300 square mile. The total number of beaver lodges in the area would be about 900 to 1000.

The number of lodges per square miles on the five transects ranged from .5 to 1.0 with an average of approximately .8 lodges per square miles.

On July 7, a short transect was flown in that portion of the Sanctuary in the Arctic Red River Group Area, north of the Mackenzie River. On this transect 11 lodges were counted in 12 square miles, amounting to about one lodge per square mile. The same method was used on this survey as described earlier in this report. A considerable part of the area northeast of Point Separation has been heavily burnt in previous years and is not beaver habitat. It was not included in this transect. Since this part of the Sanctuary was not under consideration, a detailed aerial survey was not flown at this time.

The area between the Arctic Red and Peel Rivers has been divided (see Map 1) according to good and poor beaver habitat. The poor habitat lies south of the line. It is a flat, muskeg area with shallow lakes which are in an advanced stage of silting. The area is covered with stunted, sparse black spruce with little deciduous growth. Table II contains a breakdown of the five transects. From these data the density of beaver lodges per square mile north of the line is about twice that of the number south of the line.

TABLE II

Minutes	Number Lodges	Lodges per square mile
15	14	.9
x 24	9	.4
19	23	1.2
x 17	9	.5
25	20	.8
Total: 100	75	

x Parts south of line.

The best beaver habitat observed on this survey was in the vicinity of Niger Lake (local name). Judging from the amount of aquatic vegetation and the deciduous growth, in this particular area, where the beaver population is most abundant there is a good food supply still available. Also, suitable lakes without beaver can be found, to which the surplus beaver can establish themselves. The population could be considered high, but whether it constitutes an over-population is open to discussion, since there is available food supply and suitable lake remaining unfilled. Recommendations have been submitted for allowing controlled beaver trapping in this area in the "Report on the Mackenzie Delta Beaver Sanctuary".

The area in the vicinity of Niger Lake is in the open area outside the registered areas of the two groups. However, it would be a slow progress to live-trap beaver in this area because of its inaccessibility by boat. It would be necessary to land the equipment and supplies by an aircraft on Niger Lake and portage to the surrounding lakes containing beaver lodges. Also, this part is included in the Peel River Preserve and would cause a certain amount of resentment by the natives at Fort McPherson, if beaver were live-trapped. A more practical method would be to register this open area to persons, now, without an area, or on poorly, productive area rather than to attempt to live-trap the excess beaver in it.

I am in favour of conducting a live-trapping and transplanting program of beaver on a minor scale to suitable registered areas in the Mackenzie Delta. About 4 to 8 colonies, amounting to 25 or 30 beaver, could be live-trapped on registered areas in the East Branch and certain areas in the Fort McPherson Group Area, which border the Mackenzie and Peel Rivers. The holders of these areas could assist in the live-trapping operations and be remunerated for the beaver taken from their areas. A survey to locate suitable areas for transplanting beaver on the registered areas of the Mackenzie Delta, will be made, if the above scheme is approved.

In conclusion, it was found certain sections of the Sanctuary have a dense population of beaver. It does not appear that the area is harmfully over-populated. No evidence of a serious disease, or sickness among the beaver was found. Twenty-five to thirty beaver should be purchased from registered areas in the East Branch and Fort McPherson area and transplanted in the Delta rather than live-trapping the beaver from the open area in the Sanctuary between Arctic Red River and Fort McPherson.

Respectfully submitted,

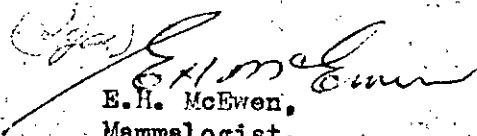
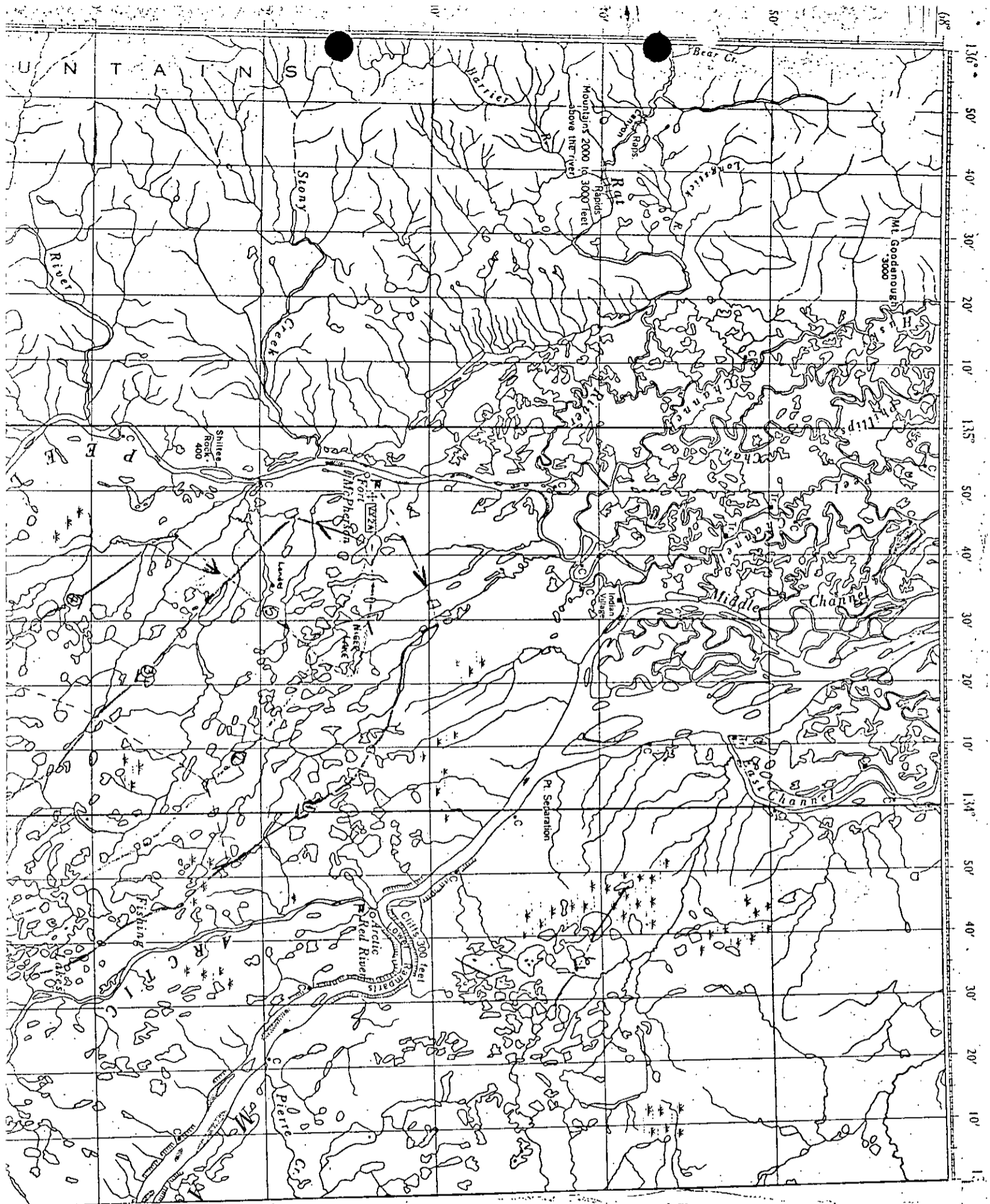

E.H. McEwen,
Mammalogist.

TABLE I

TRANSECT	MINUTES	MILES	AREA OF TRANSECT	OCCUPIED LODGES	NO. LODGES PER SQ. MILE	REMARKS
1	26	52	26	17	.7	4 dead lodges
2	21	42	21	19	.9	4 dead lodges, two runways, 1 dam, 1 beaver.
3	22	44	22	15	.7	3 dead lodges, two runways, ----- 7 beaver.
4	16	32	16	8	.5	3 dead lodges, 2 dams, 6 beaver.
5	15	30	15	16	1.0	4 dead lodges, 1 uncertain, 1 runway, 3 dams, 8 beaver
Total:	100	200	100	75	0.8	18 dead lodges, 1 uncertain, 5 runways, 6 dams, 22 beaver.



CWS

53-22

McEwen, E. H.

Aerial beaver survey,

Upper Mackenzie Delta

Beaver Sanctuary.

sanctuary

DATE

ISSUED TO

Date Due

CWS
53-22

McEwen, E. H.
Aerial beaver survey,
Upper Mackenzie Delta
Beaver Sanctuary.

..1

uary

MAY 23 1997

IMAGIC

LIBRARY
ENVIRONMENT CANADA
PRAIRIE & NORTHERN REGION
EDMONTON, ALBERTA, CANADA