

AGRICULTURAL DAMAGE BY ELK OUTSIDE
RIDING MOUNTAIN NATIONAL PARK
1950

Introduction

For several years complaints have been received by the Manitoba Game and Fisheries Branch, this Service, and other agencies, that elk from the Riding Mountain National Park herd have been causing considerable damage to hay stacks on private land bordering the park. The most serious damage occurs along the east side of the park, from Norgate to the Dauphin entrance. Unfortunately, I was not present during past periods of damage, nor do I have at this moment access to figures which can be compared with those presented here. This emigration of elk has been a great problem to the Manitoba Game and Fisheries Branch and it would appear that the time has come for the application of some definite management practices.

First complaints of this season were received by the Manitoba Branch during the latter part of November. The Conservation Officer stationed at Neepawa has spent considerable time interviewing farmers in the affected area and has received a great many more complaints. On January 25 and 26, 1950, the Manitoba Game and Fisheries Branch conducted an aerial survey of the farm lands bounding the entire Park. On February 15th the R.C.A.F. sent a Bell-Helicopter piloted by Flt. Lt. R. Heeslip to Dauphin from their Rivers Station. On February 16th, Mr. W. Goody of the Manitoba Game and Fisheries Branch and I went to Dauphin to take part in flights over the damaged area. Our primary purpose was to investigate the possibility of herding elk back into the Park by means of a helicopter. Secondary purposes were to examine the damage, census the elk outside the Park, and check on the possibility of using this type of aircraft for counting elk within the Park.

Observations

According to Mr. H. Krentz, Conservation Officer of the Manitoba Game and Fisheries Branch, the damage to private properties was most serious from the east entrance at Norgate, north to the North entrance at Dauphin. Within this area, some herds

were outside of the Park by $2\frac{1}{2}$ to 3 miles. The majority of these animals did not return to the park by day, finding their entire livelihood on the private lands. Some hay stacks were completely destroyed. Winter killing on seeded fields may be extensive due to pawing. On one field seeded to Timothy and Broom Grass near Laurier there is hardly one square foot that has not been pawed clear of snow.

Mr. Krentz's aerial survey showed that there were very few elk inside the Park east of No. 10 highway from the Norgate road to the North entrance. He was of the opinion that there were no more than 200 to 300 elk in this area. Elsewhere, wherever there were no elk outside of the Park, they were found in the interior and in large numbers where suitable forage was present.

Along the east side of the Park, on private land, Mr. Krentz observed 1,087 elk. During his complete circuit of the private land bounding the Park he counted 1,847 elk, including the 1,087 previously mentioned.

According to reports received by Mr. Krentz from residents adjacent to the Park, and from men working on No. 10 Highway within the Park, predators were very abundant. No wolves were seen during his aerial survey, although several coyotes were noted. In his opinion, the elk are frequenting the residential areas due to lack of forage plus the influence of the presence of wolves.

Flt. Lt. R. Hessler reported that during his flight over the Park en route to Dauphin he noted one dead elk surrounded by coyotes. He did not count them. He also mentioned that on approach, several larger, darker animals slinked away from the carcass into the bush. In his opinion, they were timber wolves. No further wolves or coyotes were seen during the aerial survey on February 16th.

(a) Cover—The farm land bordering the Riding Mountain National Park does not appear to be extensive. It is split up by open stands of aspen poplar, burr oak, elm and ash. Small grassy sloughs are frequent. The escarpment on the east side is quite steep, and covered by the same open stands of deciduous trees mentioned before. Several large creeks or rivers run through deep ravines out onto the plains. These ravines are bordered by

sheer rock walls. The top of the mountain is covered primarily with coniferous timber, spruces and fir. There is little open country on top of the mountain, and it is in general extremely rough. The whole area observed during these flights was covered with approximately $2\frac{1}{2}$ feet of snow.

(b) Elk—A total of 391 elk were counted during the flights over the area between the Dauphin entrance and the Norgate entrance. Two hundred and twenty six of these were observed outside the Park boundaries, on private lands. At no point were concentrations observed. The largest "group" counted was 103 animals which were bedded down over approximately 3 miles of open bush. These animals were scattered 50 to 100 yards apart in the bush and did not pay any attention to the aircraft. When elk were observed in small scattered groups, an attempt was made to count the sexes. The end result of this operation showed 56 bulls to 44 cows. Young animals were not frequently seen, the total observed being 4. Most of the bulls observed carried large horns. All animals observed were in excellent condition.

A group of six elk were selected for an experiment in herding with the helicopter. These animals could be driven successfully when approached closely in open country. When in bush it was extremely difficult to drive them for two reasons; the helicopter could not approach the tree tops too closely, and the elk appeared to feel reasonably secure within the trees. The band of six referred to were driven approximately $\frac{1}{2}$ mile across the open fields. They winded very quickly. On approaching a fence line, they started to parallel it but were pushed over it with no great difficulty. These animals were followed for approximately $\frac{1}{4}$ mile more, at which point they were left for the time being, proceeding in the general direction of the Park. On return, about one hour later, this same band was found in the nearby bush. They were once again chased into the open and headed towards the Park. When they appeared winded, they were left again. Some three hours later, the band was again checked and found to be back in the general area from which they were originally chased. It is apparent that herding must be kept up until the animals are well away from the area in which damage is occurring, and it is thought that it must be continued in order to discourage their return.

Several cultivated $\frac{1}{4}$ sections showed extensive trampling by elk. In several places, as many as 60 old beds were observed within a

small area. Signs of pawing were widespread. Hay stacks were scattered throughout the cultivated area. Many have been removed entirely by the farmer owning the land. Quite a few were observed in poor condition due to trampling and tearing down by elk. Few stacks were fenced, but those that were did not show signs of serious damage.

At one point during the flights, approximately $2\frac{1}{2}$ miles west, and 2 miles south of Laurier the carcasses of four large bull elk were observed. Two of these carcasses were examined from the ground, the remaining two from a low altitude. All showed slight blood stains on the snow. The carcasses were not covered with snow but were frozen solid. Hair had been chewed off along the back and stomach—apparently by mice. No wolf or coyote tracks were noted in the area surrounding the carcasses, nor were the carcasses in any way torn apart. It is the opinion of Flt. Lt. R. Heaslip and myself that these animals were shot. Several farmers who lived nearby were questioned but no information could be obtained regarding these kills.

The return flight was made along a line well up the escarpment, and over the top of the mountain. One hundred and sixty five elk were observed within the Park boundaries along the line of flight. All were bedded down. Animals bedded in the open deciduous timber up the escarpment were easily observed. When coniferous timber on top of the mountain was encountered, animals were extremely difficult to locate. One dead bull elk, was observed on top of the mountain. Inspection was made from the lowest possible safe altitude. The area around this animal was liberally covered with blood and it appeared to have been somewhat disembowelled. Tracks were observed but could not be identified positively from the height of the aircraft. This was probably the work of wolves.

(c) Other Animals and Birds

Seven moose were observed within the Park proper. Two were bulls with large antlers. Deer were reasonably abundant in the bush on the plains surrounding the Park. Most of these animals were observed bedded down with or near elk. Snowshoe rabbits were also seen. Their reaction to the aircraft was most

interesting. They literally went crazy, much like a cat having a fit. Sharp-tailed Grouse were also observed and their reaction was much the same as the rabbits'. The hovering helicopter must appear to be a large hawk.

Summary

It would appear that the peak of the elk emigration is over. The numbers of elk observed on these flights were fewer than those reported by the conservation officers of the Manitoba Game and Fisheries Branch. Local residents mentioned that the elk move down from the mountain during very cold weather. The long cold spell (20 to 40 below) from mid-December to the end of January apparently started this outward movement. The break of the cold weather and continuing mild since approximately the 1st of February, seems to have started a return movement.

Quite a few hay stacks appeared to be damaged. Many had been taken in by their owners when the elk came from the mountain. Those which had been damaged, had up to one-third of their contents eaten and torn out. Destruction of winter crops by pawing may be a serious consequence of this movement: the whole area observed from the air was honeycombed with elk tracks.

The herding of elk by a helicopter is not successful except on the open cultivated plain. The animals winded very quickly. Over bush it was not possible to operate at a very low altitude due to wind gusts and the fact that full throttle is necessary when hovering. This leaves no safety margin should the machine suddenly drop. Along the escarpment it was not possible to approach the animals closely due to down drafts and trees. The safety margin in this area must be considerably greater than that on the plains. It was not possible, therefore, to herd animals up the escarpment. On top of the mountain within coniferous timber animals were extremely hard to see and they could not be approached closely due to the height of the trees. Many deep ravines cut the escarpment and extend across the mountain. The country is extremely rough and, if it were possible; herding elk would, at best, be a long slow job.

Elk which were bedded down in bush areas did not appear to be worried by the approach of the aircraft.

Conclusions—For the following reasons herding elk from farm lands back to Riding Mountain National Park by means of helicopter is not practicable.

A Limitations of the Elk

1. Elk are scattered over large distances. No real concentration of animals was noted at any point in the Park.
2. Elk become winded after a short run. A long drive would take considerably more time than could possibly be spent at such a job. Nearly 20 miles would be the distance which these elk should be pushed back to suitable range.
3. It appears impossible to keep the animals at a walk and still proceeding in the direction desired. When not harried they will turn back for the nearest cover.
4. The extremely rough topography of the Park would make a drive of any distance impossible as far as the elk are concerned.
5. When in coniferous timber animals are hard to see. They do not appear frightened by the aircraft probably due to the fact that a close approach is not feasible.

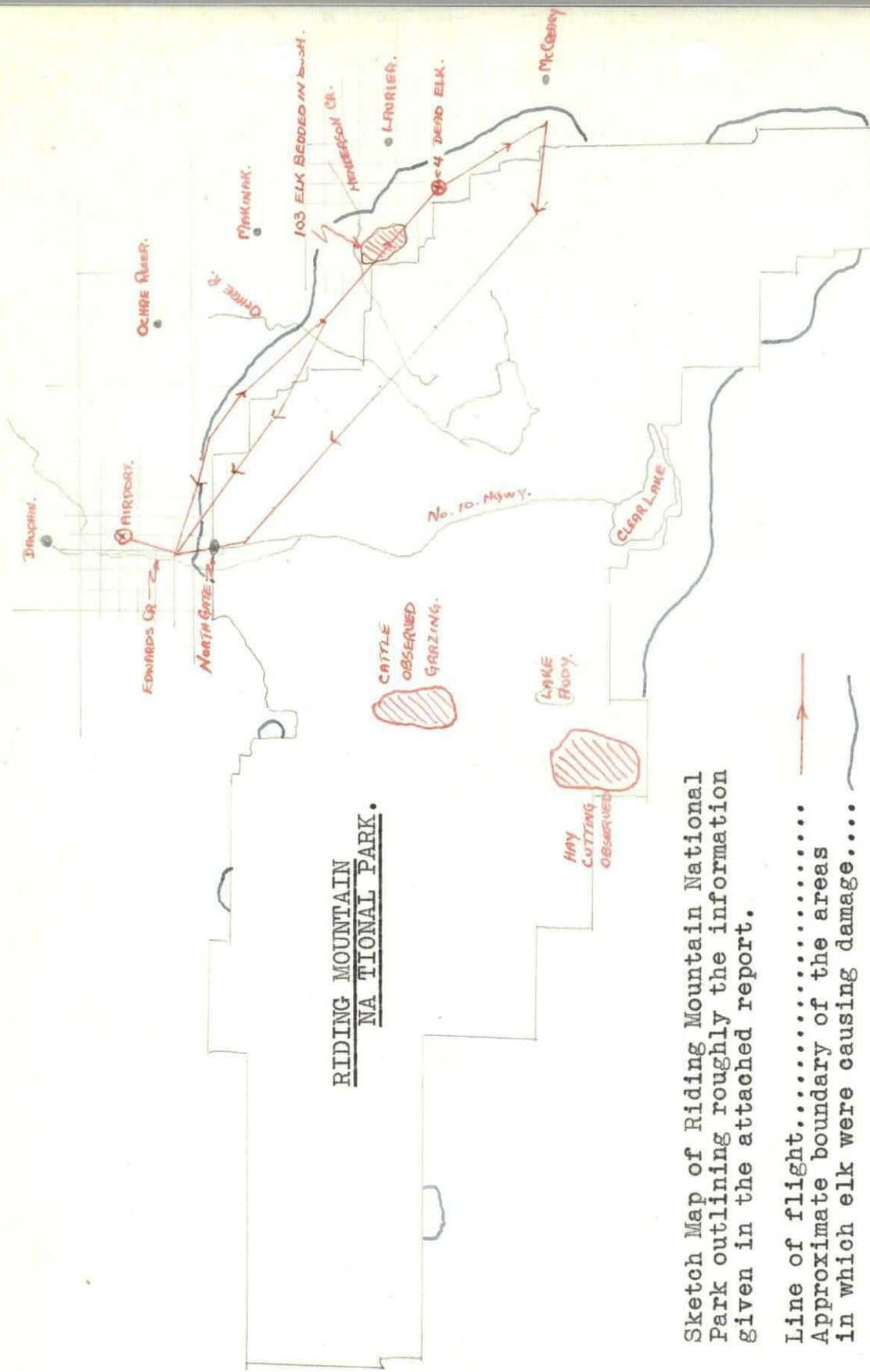
B Limitations of the Aircraft

1. Range of helicopter is approximately 200 miles, or two hours flying time. When hovering, this flying time is reduced considerably.
2. When helicopter is hovering, full throttle is required. This uses large amounts of fuel and leaves no safety margin should the machine drop suddenly.
3. Over open farm lands the altitude at which the machine may operate is practically unrestricted. It may hover but a few feet over the ground or may rise as high as required. When over trees, due to the point outlined in No. 2 the safe altitude is considerably higher. The elk are, therefore, not impressed.

4. Over the escarpment of the Riding Mountain National Park down drafts make it necessary to have an additional safety margin. Minimum altitude at which the machine could safely operate would be approximately 300 feet.

Recommendations:

1. It is apparent that sufficient forage for elk does not exist along the east side of Riding Mountain National Park, making it necessary for these animals to descend onto the farm lands during periods of snow and cold weather. It is suggested, therefore, either that feed be provided within the park for these animals or that a sufficient number of animals be removed from the area within the Park, east of No. 10 Highway, to ease the pressure on the farming land along the eastern boundary.
2. During field investigations in Riding Mountain National Park in the autumn of 1949, it was noted that a considerable amount of hay is cut (within the Park) by private individuals under some sort of lease. It was also noted that in certain areas (e.g. along the Strathclair Road beyond the Lake Audy enclosure—Kennice Creek area) cattle belonging to private individuals were grazing. The areas involved in both the hay cutting and the cattle grazing are part, at least, of the finest elk range. It is suggested, therefore, that these practices be stopped as soon as possible. The hay saved could then be used as winter feed for the elk along the east side of the Park, or an effort could be made to drive a large number of elk from the eastern into the western part of the Park where more food would then be available.
3. It is suggested that an annual census of the Riding Mountain National Park elk be made by means of a helicopter. The Royal Canadian Air Force Station at Rivers, Manitoba, have four of these machines available and appear to be very willing to aid the Manitoba Game and Fisheries Branch and this Division whenever possible. The results of this aerial survey should, of course, be correlated with data from a ground check run simultaneously.



RIDING MOUNTAIN
NATIONAL PARK.

Sketch Map of Riding Mountain National Park outlining roughly the information given in the attached report.

- Line of flight.....
- Approximate boundary of the areas in which elk were causing damage....

OF THE INTERIOR

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File copy.

XXXXXXX
Canadian
900 Dominion Public Bldg.,
Winnipeg, Manitoba.
December 21, 1950.

E 5.0.

Re: Agricultural Damage by Elk Outside
The Riding Mountain National Park.

I wish to advise that, as per my memo dated December 15th, on December 16, 1950, I made the first of a series of aerial surveys of elk which cause damage to agricultural interests along the east side of Riding Mountain National Park. This survey consisted of some six hours of flying, three and one-half of which were actually spent over the damage area and the eastern portion of the Park. I concentrated on that area in an endeavour to ascertain as accurately as possible the immediate status of the elk which are presently, or soon will be, causing damage to the farms adjacent to the Park. Weather conditions were ideal for the trip, and light conditions were excellent for observation of animals.

The area covered by an intensive search for animals is shown on the accompanying sketch map. Other flight lines, where a general search was conducted are also shown.

The survey covering the area immediately adjacent to the escarpment was flown at an altitude of approximately three hundred feet, observations being made on each side of the aircraft for a distance of about a quarter mile. When any number of animals was encountered, the group was circled at a lower altitude in an effort to obtain a count of the individual sexes. Over the Park itself, an altitude of about five hundred feet was maintained in the interest of safety. It was found that this altitude was quite satisfactory for observation, especially when the animals were in the tall timber.

A total of seventy-eight elk, one moose and two deer were seen during the intensive survey. This amount to 1.5 elk seen for each square mile of the sample area. It is estimated that fifty square miles were sampled in the damage area and that portion of the Park adjacent to it. The area concentrated on covers approximately 236 square miles. Our sample, therefore, covered approximately twenty-one percent of the study area.

(cont'd page 2)

The estimated population of elk in this area is, therefore, between three hundred and four hundred animals. These animals are those which are, at the moment, responsible for the damage which is occurring.

A total of twenty-six elk and one moose were seen during the flight over the Park area, (shown by a green line on the sketch map). Since this flight covers some twenty-eight square miles of sample the density of elk per square mile was approximately 1.0. The animals were scattered along the route shown on the map. No concentrations were seen at any point. Further coverage of this flight line should show whether there is any movement of animals from west to east.

No real concentration of elk was observed at any time during the flight. In one area, on the eastern slope of the Park west of Laurier, thirty-four elk were seen in about two lineal miles of flight. This was the heaviest concentration noted. All animals seen were within the Park boundary. These elk venture into the fields during evening and morning feeding periods. Tracks were seen in almost all areas surveyed, the heaviest number being in the farm land adjacent to the Park west and northwest of Laurier. At no point on the farm lands were hay stacks observed which had been seriously damaged. Some showed signs of utilization by elk, but use was very light. According to local reports, domestic stock will not touch hay from stacks which have been visited by elk.

In only one case was it possible to obtain a sex count of the animals. The group mentioned about thirty-four elk in about two lineal miles, was circled and counted carefully for sex. It was not possible to differentiate between cows and calves in the group. A count of fourteen bulls and twenty cows and calves was obtained.

The number of elk outside or alongside the eastern boundary of Riding Mountain Park is at the moment very low. Damage is considered light and not serious. However, as the winter progresses, it is very probable that more and more animals will move down to the eastern plains and damage to hay stacks will increase substantially. It is apparently with this in mind that the

Manitoba Game and Fisheries Branch have declared their special open season on elk. Mr. Malsher advises that licences have been going "like hotcakes". He estimates that from 1,500 to 1,700 licences will have been sold before the elk return to the Park. The present limit is one animal of any sex or age per licence. A report of the kill is required. We should, therefore, have some interesting information when the season closes.

At present there is no set date for this season to close. It is anticipated that the number of elk descending the plains will increase as usual, with the advent of more snow and colder weather. In the past, this movement outwards has reached its peak in February. There is no telling what effect this season will have on the movement, or how many animals will be removed.

Since my survey on December 16th, several more reports have been received to the effect that elk are now out of the Park in the Onanole and Gilbert Plains areas. I will endeavour to include these areas in my next coverage which is slated tentatively for January 5th or 6th, 1951.

It is anticipated that future coverages will supply more useful information, inasmuch as it will then be comparable to previous surveys. I hope to be able to ascertain where the elk which move out of the Park come from, and the approximate number which make the migration.

Since this matter has been thoroughly discussed with Mr. Malsher, I am not including a copy of this memorandum for his office. The final report will be submitted with a copy for Mr. Malsher's office.

I trust that you will find this information of interest.

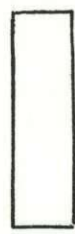
D.G. Colls.

Dr. Harrison F. Lewis,
Chief, Canadian Wildlife Service,
Department of Resources and Development,
Norlite Building,
Ottawa, Ontario.

DGC/PT
Encl.

SKETCH MAP OF EASTERN PORTION OF
RIDING MOUNTAIN NATIONAL PARK,
 SHOWING AREA IN WHICH ELK CAUSE
 MOST SERIOUS DAMAGE TO HAY STACKS,
 SHOWING FLIGHT LINES AND AREA IN
 WHICH GREATEST NUMBER OF ELK WERE
 OBSERVED ON DECEMBER 16, 1950.

AREA IN WHICH ELK CAUSE MOST SERIOUS
 DAMAGE.



AREA MOST INTENSIVELY SEARCHED FOR
 ELK ON DECEMBER 16, 1950.



FLIGHT LINES IN LATER AREA.



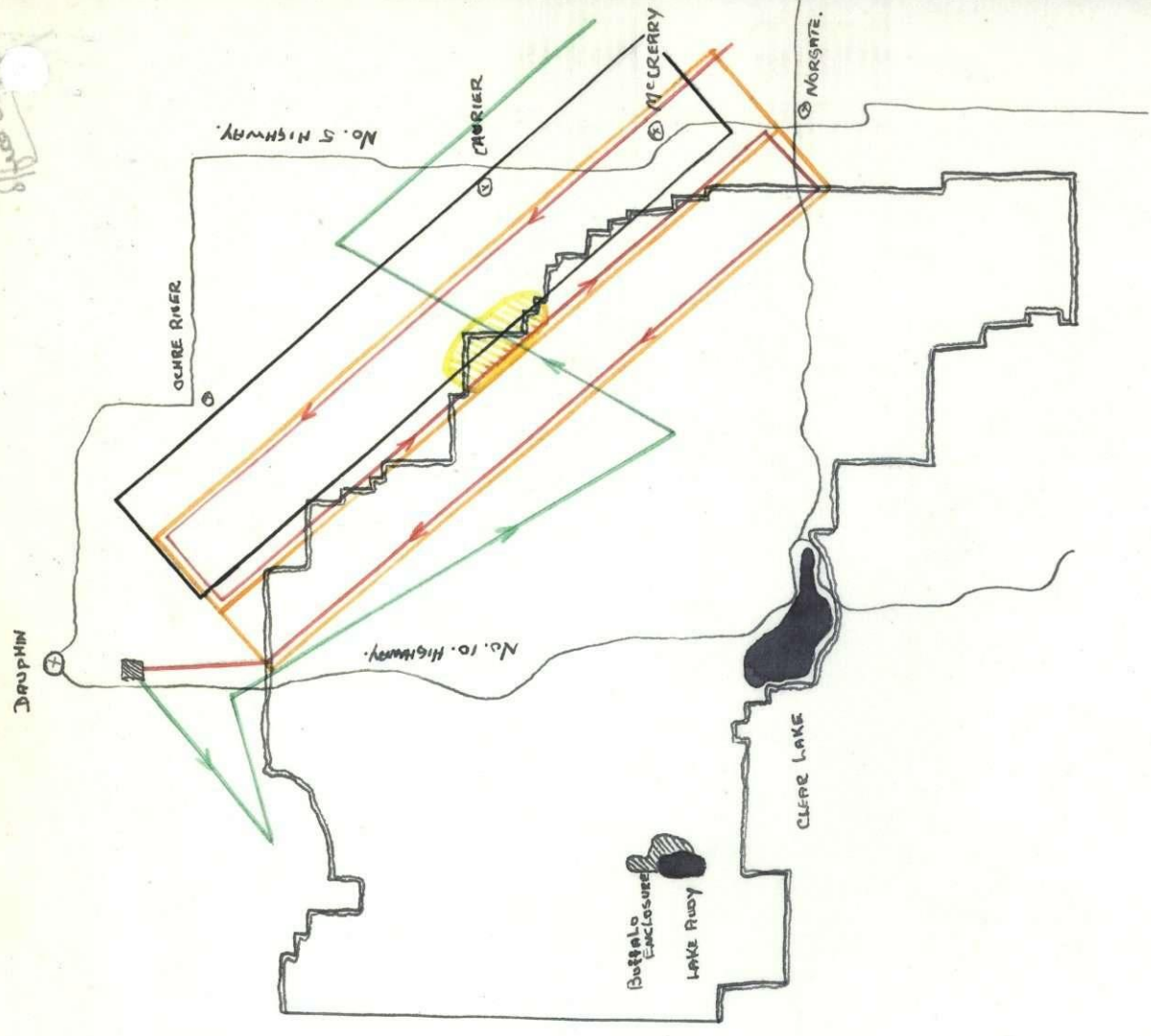
FLIGHT LINES OVER OTHER AREA.



AREA IN WHICH HEAVIEST CONCENTRATION OF ELK
 WAS NOTED DECEMBER 16, 1950.



Office copy



900 Dominion Public Bldg.,
Winnipeg, Manitoba.
January 10, 1951.

E 5.0

Re: Agricultural Damage by Elk Outside
Riding Mountain National Park.

I wish to advise that the second of a series of proposed surveys of the elk along the east side of Riding Mountain National Park was carried out on January 6 and 7, 1951. The area in which most of the flying was done was that along the eastern slope of the Park. The flight lines in this area are the same as those shown on the sketch map attached to my memorandum dated December 21, 1950, with regard to this same subject. These flight lines, since they are the same, are not shown on the sketch map attached to this memorandum.

In addition to a second coverage of the above mentioned area, a flight was made along the north boundary of the Park to a point roughly south of Grandview, south to the Birdtail Valley, east to Gunn Lake, south-east to Whitewater Lake, to Lake-Audy and Clear Lake, and then north along the east side of Number 10 highway into Dauphin. The purpose of this flight was to check on reports of elk outside the Park area south of Gilbert Plains, and to see whether there were any large concentrations of elk at any point along the flight line. I endeavoured to set up this flight, primarily over territory listed by Banfield as concentrated or marginal elk range in that portion of the Park west of Number 10 highway. In addition, I tried to cover by air, part at least, of the route taken two days earlier when I made a trip by a Manitoba Game and Fisheries Branch bombardier. This latter trip will be covered later in this memorandum.

As mentioned before, the area along the east side of the Park covered by an intensive search for elk, is not shown on the attached map. It is precisely the same as that shown on the map attached to my previous memorandum and may be superimposed on this map by placing one on top of the other. The method of making the survey was the same as that outlined previously. A total of 83 elk were seen during this intensive survey, an increase of only five animals over the number seen on December 6, 1950.

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The increase in animals is, I believe, not significant as yet. From my observations along the top of the escarpment, the number of tracks and beds seen, and the amount of pawing noted, I feel that there is a large population of elk present which could, should the snow depth increase, move down to the plains and cause considerable trouble to the farmers.

I am somewhat troubled by Banfield's map of Riding Mountain National Park showing the elk range, particularly that area east of Number 10 highway. Seen from the air, this portion of the Park shows sizeable areas which I would call good elk range. There are large open areas and many open creek and river beds surrounded by the high hills to the north and east. These areas are covered with tracks, beds, and signs of pawing. From all of my observations in Riding Mountain National Park during the past two years, I would guess that as much as one-quarter of the total elk population of the Park inhabit this area on a year round basis. I have discussed this matter with Mr. O.E. Heaslip, Superintendent of the Park, and with Mr. J. Allan, Chief Warden of the Park. It is their opinion that the elk which move down to the eastern plains are year round residents of that area east of Number 10 highway. They do not believe that there is a significant movement (migration) of elk from the area west of Number 10 highway to east of the highway.

With this in mind I tried to get some idea of the movement of animals across the two main highways which make the south and east boundaries of the area referred to as being east of Number 10 highway. On January 3rd, just before dusk, I drove out along the Norgate Road for four miles. I counted the tracks of elk which had crossed the road. The counting was simplified due to the fact that the ground was covered with a reasonably fresh fall of snow. My idea was to obtain some idea of the movement of elk across the road. The number of tracks averaged about 80 per mile for the four miles sampled. Close examination showed that approximately the same number of animals crossed the road heading south as heading north.

The same technique was tried along Number 10 highway

(cont'd. page 3)

from the point where the highway leaves Clear Lake, to the North Gate. On this run I counted tracks for one mile and drove four miles, counted for one mile, and so on. Once again the fresh snow made counting easy. The number of tracks per mile of road averaged out to about twenty. An equal number of tracks appeared to be going to the east and to the west.

From data obtained during my aerial survey of elk in Riding Mountain Park in March 1950, I would estimate that the population of elk at that time, in that area east of Number 10 highway, was about 1,000 animals. Prior to this survey, a Manitoba Game and Fisheries Branch survey had indicated that there were roughly 1,200 elk in that area bordering the Park from the Dauphin road to the Norgate road. By the time of the March 1950 survey, there were very few animals observed outside the Park boundary.

I am fairly certain that there is a sizeable population of elk in the area bounded on the east by Number 10 highway and on the south by the Norgate road. I feel that this is a normally resident population which moves out to the plains when a heavy snowfall makes food difficult to obtain. This is, therefore, the population which is potentially dangerous so far as the farmers along the east side of the Park are concerned.

This present survey has been thoroughly discussed with Messrs. G.W. Malaher and A.P. Davey of the Manitoba Game and Fisheries Branch. As it stands now, the elk season, which is open only to farmers living around the Park, is due to close on January 31, 1951. Mr. Malaher advises me, however, that it is his intention to have the season extended to at least February 28, 1951. He feels that a new snowfall will bring greater numbers of elk out to the Plains as happened in 1950. In any case, he feels, as do I, that the peak of the outward movement has not yet been reached. This occurred in mid-February of 1950, and could certainly occur again in 1951. For the time being the season will be open only to farmers, but his Minister has the right to extend it to the general public on advice from the Game Branch. If the elk do not move out in great numbers there will be little complaint of damage to hay and the extended season will not hurt the elk population. The only complaints

are liable to come from those who have acquired licences but cannot find a legal elk.

It has also been suggested by Mr. Malaher and Mr. Davey that the latter gentleman accompany me on my next aerial survey of elk along the east side of the Park. This is slated tentatively for January 20, 1951. They have suggested that the Manitoba Game and Fisheries Branch will provide the funds to pay the aircraft rental for that particular trip, and that the trip should be extended to take in a complete survey of the Park boundary. They feel that this will allow me to stretch the funds I have available for these trips so as to carry out the surveys to at least the end of February 1951. I should add that they are very pleased that we are making these surveys and are cooperating as much as possible.

I expect that the survey of January 20th, will be carried out as outlined above, in cooperation with the Manitoba Game and Fisheries Branch.

I might also add that Chief Warden J. Allan of Riding Mountain Park expressed the desire, during our discussions at Clear Lake, to accompany me on one of these aerial surveys of elk along the east side of the Park. I therefore intend to make arrangements to meet Chief Warden Allan in Dauphin sometime early in February so that he may take part in at least one of these trips.

The flight made out through the western part of the Park did not locate any sizeable herds of elk. All told, only 58 animals were seen, or 1.2 animals per square mile of area sampled. This per square mile figure is considerably lower than that figure established after the March 1950 aerial survey. It must be remembered, however, that the present sample represents coverage of only three percent of the total Park area, and can therefore hardly be called representative of the total Park area. In such locations as the Birdtail Valley, large areas were seen in which a great deal of pawing had been done. Beds were noted in large numbers, sometimes several hundred in an area of about one acre. The shores of lakes such as Gunn,

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Whitewater and Audy were covered by tracks, beds and pawing. In other words, there was ample evidence observed of a large elk population even though it was actually not seen. This population does not appear to be undergoing any hardship due to lack of food, overpopulation, and so on.

Prior to the aforementioned flight over the Park, I visited Riding Mountain Park by car on January 3, 4, and 5, 1951. At the time of my arrival in Clear Lake on January 3rd, Mr. H. Krentz and E. Eyford, Manitoba Game Guardians were patrolling the south-east boundary of the Park by bombardier. They arrived in Clear Lake on January 3rd, and the present special elk season was discussed with them. They advised that the whole eastern boundary of the Park was literally crawling with hunters. Some of these men were farmers from as far away as Roblin and Russell at the western end of the Park. Eyford, who drives the Manitoba Game and Fisheries Branch bombardier and who has been in the area since the season began, estimates that there have only been 75 to 100 elk shot up to January 3rd, along the eastern side. The remainder of the Park boundary is presently being checked by the Manitoba Game and Fisheries Branch and they will soon, no doubt, have a further estimate of the kill. There have been, however, no reports of good shooting anywhere but along the east side. Further evidence of this is shown by the fact that farmers from other areas around the Park are to be found along the east side.

On January 4th, I was able to accompany Messrs. E. Eyford and W. Goody of the Manitoba Game and Fisheries Branch on a patrol by bombardier along a short section of the Park boundary between Clear Lake and Lake Audy. Messrs. J. Allan and J. Goodison of the Riding Mountain Park staff also were on this trip. The route taken is shown approximately by the green line on the attached sketch map. Numerous trips into the Park area were made at the request of Chief Warden Allan, when sleigh tracks could be seen and followed. When the road from Lake Audy south to the boundary was encountered we turned north and followed this road through the Park as far as Gunn Lake. Once again numerous side trails were followed when fresh sleigh tracks were observed. The return to the townsite was made

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along the Lake Audy road to the junction of Number 10 highway and across the ice of Clear Lake.

During the course of the patrol from Clear Lake to Lake Audy, no elk were observed. Elk sign was common, however, and would indicate fairly substantial population. The first real herd of elk, about 75 animals, were seen just south of the Lake Audy enclosure. All were observed to be in excellent condition. The second large group, 125 animals, ran across the road in front of the bombardier, just west of Whitewater Lake. The animals ran in single file and a fairly accurate count was obtained. These animals were all in good condition, with the exception of one young bull which was seen to be limping.

Elk sign was common along the route taken by bombardier west of Lake Audy. Many quite fresh beds and signs of pawing were seen and fresh tracks crisscrossed the road almost continuously.

I had the opportunity several times during the aerial and ground trips to get a breakdown of sexes in several groups which were encountered.

These are as follows:

- Along top of eastern escarpment - 9 bulls
20 cows & calves.
- During flight over western area - 8 bulls
16 cows & calves.
- During bombardier trip - 5 bulls
120 cows & calves.

In several areas where elk appeared to be numerous there was no evidence of overbrowsing. There was good growth observed on species such as willow and aspen, little of which had been touched. The animals seemed to have been acquiring most of their food by pawing, of which there was ample evidence. I do not believe that, at the moment, the elk are experiencing any great difficulty in obtaining their natural food.

In several localities it appeared that poaching of elk was common. In one spot along the Park boundary, we found a fresh elk hide that had apparently dropped off a sleigh heading out of the Park. In several other spots, we located the signs of an elk kill by man. During the bombardier trip west of Lake Audy, we encountered two horse-drawn sleighs. The occupants claimed to be looking for timber. There was some suspicion from the way they acted that they were more interested, or involved, in looking for elk. The bombardier was an ideal machine for enforcement work, and, in my opinion, should be used extensively in the Park during the winter months.

Chief Warden Allan made several comments which are of interest and will be included here. He mentioned that he thought that the coyote population was fairly low at present. He did not think that many were being shot by the wardens. More information on this matter will be obtained from warden diaries during my next visit to the Park. Chief Warden Allan also mentioned that during the recent slaughter of seventeen elk in the Lake Audy enclosure, one cow was found to have "cysts" on the intestine and some sort of swellings in the lungs. The "cysts" are described by Chief Warden Allan as being as large as a tennis ball, attached to the intestine rather than the mesentery, and containing a yellow-colored, bad smelling substance of about the consistency of curdled milk. The lung "abscesses" are described only as being a little darker in colour than the lung itself. He did not examine the animal any further, although he stated that the animal was fat and otherwise appeared to be in good condition prior to being shot.

As was the case with my last memorandum on this subject, I am not enclosing a copy for the information of the Manitoba Game and Fisheries Branch, inasmuch as this whole trip has been thoroughly discussed with Messrs. O.W. Malsher and A.P. Davey.

(cont'd. page 8)

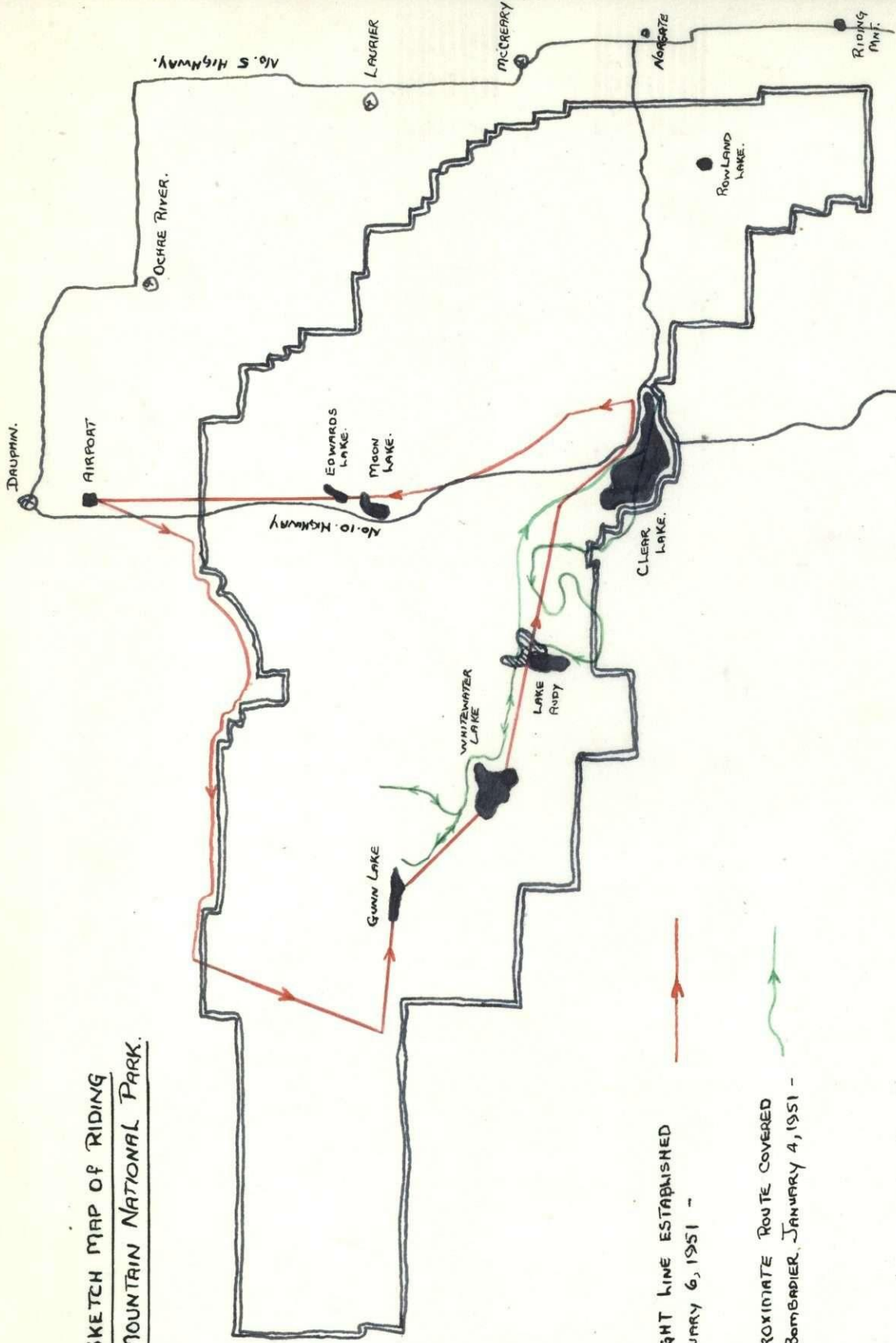
Further reports will be submitted as these surveys are carried out. I trust that you will find this information of interest.

D.G. Colls.

Dr. Harrison F. Lewis,
Chief, Canadian Wildlife Service,
Department of Resources and Development,
Norlite Building,
Ottawa, Ontario.

DGC/PT

SKETCH MAP OF RIDING
MOUNTAIN NATIONAL PARK.



FLIGHT LINE ESTABLISHED
JANUARY 6, 1951 -

APPROXIMATE ROUTE COVERED
BY BOMBARDIER JANUARY 4, 1951 -

N.B. AREA MOST INTENSIVELY SEARCHED FOR EIK
IS NOT SHOWN ON THIS SKETCH MAP. IT IS
HOWEVER EXACTLY THE SAME AS SHOWN ON
THE SKETCH MAP ATTACHED TO MY REPORT
ON THIS SAME SUBJECT DATED DECEMBER 21, 1950.

XXXXXXX
CANADIAN

900 Dominion Public Bldg.,
Winnipeg, Manitoba.
January 22nd, 1951.

E 5.0

Re: Agricultural Damage by Elk outside
The Riding Mountain National Park.

I wish to advise that on January 20 and 21st, I made the third of a series of surveys of the elk which have been, or are likely to, cause damages to agricultural interests around the Riding Mountain National Park.

As mentioned in my last memorandum on this subject, I was accompanied on this trip by Mr. A.P. Davey of the Manitoba Game and Fisheries Branch. Seven and one-half hours of flying were completed in the two days and the Game and Fisheries Branch have signified that they will pay the expenses of the trip.

In view of the considerable amount of work that I have on hand at the moment and due to the lack of assistance, I am not at this moment preparing my usual report on this subject. This will be done, however, as soon as the opportunity presents itself, even though it may be some week or ten days hence.

For the time being, I wish to advise that within the area intensively surveyed for elk as shown on the sketch map attached to my memorandum on this subject dated December 21, 1950, there was no change noted in the general situation. It must be remembered however, that the area bordering the Park on the east side is being heavily hunted and there are no doubt some animals being removed.

Additional estimates of the kill, over and above that mentioned in my memorandum on this subject dated January 10, 1951 is not yet available since it is believed that the bombardier crew have transferred their scene of operations to the Duck Mountains for a short while. We are at the moment experiencing weather which might be expected to produce a fair amount of snow. It is anticipated that should this snowfall occur, more animals will move out of the Park area into the Eastern plains. This will be investigated further during future aerial surveys in this regard.

In addition to coverage of the area along the eastern border of the Park, Mr. Davey and I followed the boundary of the Riding Mountain National Park for its entire length. We observed one hundred and thirty elk during this coverage of the complete Park boundary. A great many tracks were observed leading in and out of the Park area and it was apparent that many animals would leave the Park when conditions make it necessary to do so.

Mr. Davey advises me that it is still their recommendation, and intention, to have the special elk season continued during the month of February 1951.

I trust that this information will be of interest and will be satisfactory in view of the present circumstances with regard to the present amount of work that I have on hand.

D.G. Colls.

Dr. Harrison F. Lewis,
Chief, Canadian Wildlife Service,
Department of Resources and Development,
Norlite Building,
Ottawa.

P.S. Saw four wolves on small lake 1 mile south of Helen Lake and 6 miles WNW of Riding Mountain.

CWS
50-21
c.2

Colls, D.G.

Agricultural Damage by Elk
Outside Riding Mountain National
Park, 1950.

DATE DUE	BORROWER'S NAME



REDI Binding Covers

Can be made in all sheet sizes and capacities from 1" to 6" with Standard Fastener centres of 2 1/4", 4 1/4", 5 1/4", 7" and 8 1/4".

Unless otherwise specified fasteners with (B-2 3/4") centre will be supplied for sheet sizes up to 6", (D-4 1/4") centre for sheet sizes 7" to 10" (H-8 1/2") centre for sheet 11" to 14". All covers are punched to take any of these centres within the cover size. Tang capacities of 2" supplied on 2 3/4" centres, all larger centres with 3" capacity.

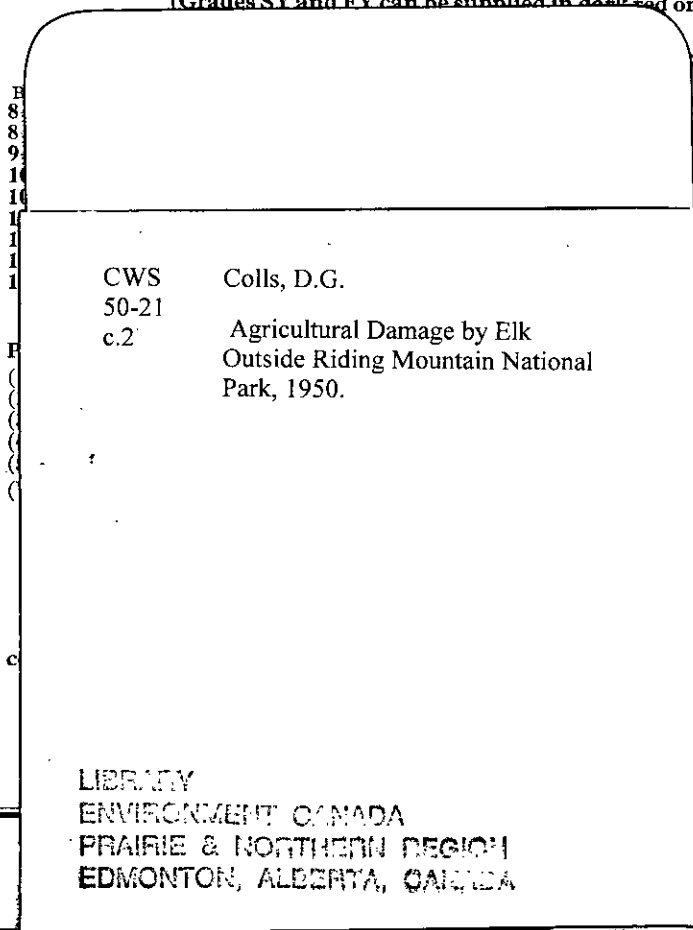
Due to the many combinations in which these Covers can be made we have adopted the following representative letter and figure symbols to cover grades, sheet sizes, centres and capacities, a number to represent any particular one of thousands of combinations can be easily ascertained from the illustration as shown below:

COVER GRADES

- | | | |
|------------|---|---------------------------------|
| Grade "V" | 200 lb. Filetex | } With double ply binding bars. |
| Grade "HV" | 300 lb. Filetex | |
| Grade "C" | .012 Leatheroid | } Double ply binding bars. |
| Grade "HC" | .023 Leatheroid | |
| Grade "GW" | An extra strong terra cotta coloured paper material of leather appearance and wearing qualities. .
Green Pressboard Covers — Blue cloth bound binding bars. Red Pressboard can also be supplied, change "GW" to "RW" if red is wanted. | |
| Grade "CV" | Leatheroid with Filetex Lining — Canvas hinge. | |
| Grade "F" | Full black cloth — Board covers. | |
| Grade "J" | Full canvas — Board covers. Colours: Maroon, Green, Blue black, Light blue, Fawn and Brown. (Specify colour, otherwise Maroon will be supplied). | |
| Grade "SY" | Full Black grained imitation leather, stiff board covers. | |
| Grade "FY" | Full Black Seal grained imitation leather, flexible covers. (Grades SY and FY can be supplied in dark red or green when | |

CAPACITIES

Capacity	Symbol
1"	1
2"	2
3"	3
4"	4
5"	5
6"	6



OLS

t 14" x 8 1/2".

re, maroon

NY

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