No.66 November, 1962

RESOURCE MANAGEMENT REPORT

These Reports are for Intra-Departmental Information
and Not for Publication

ONTARIO

DEPARTMENT OF LANDS AND FORESTS

Hon. A. Kelso Roberts, Q.C.
Minister

F.A. MacDougall
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SURVEY OF IDLE AND ABANDONED FARM LAND IN THE TWEED FOREST DISTRICT 1961

by
W. D. Tieman
Timber Management Forester

Abstract

As a companion study to, and adopting the same survey procedure as the Survey of Production from Private Woodlands in Tweed District, the extent of abandoned and idle cleared land was estimated to be 7.5% of all patented lands. Based on the judgment of owners, 90% (about 207 thousand acres) of lands not otherwise in use could be planted.

Purpose

For some time, the problem of increasing areas of abandoned and idle farm land in Eastern Ontario has occupied the attention and concern of government agencies responsible for resource management and economic development. Because much of this non-productive agricultural land has shown varying degrees of potential for timber and fish and wildlife production, as well as recreation and water conservation, the Department of Lands and Forests has been particularly interested in this problem.

The survey described herein was carried out to determine the extent of abandoned and idle farm land in the Tweed Forest District. In addition, an attempt was made to determine how much of this non-productive farm land might be considered suitable for growing trees.

Method

During the summer of 1961, the Tweed District Staff of the Department of Lands and Forests, in co-operation with the Federal Department of Forestry and the Dominion Bureau of Statistics, carried out a survey of the production of forest products cut from privately owned woodlands in the Tweed District. The survey of idle farm lands was carried out as a supplementary part of that survey. The method was designed by the Dominion Bureau of Statistics and applied to both surveys.

The Tweed District was broken into five strata or types based on broad land-use patterns.

Strata 1. Predominantly agricultural area along the north shore of Lake Ontario in the south part of the Tweed District; heavy soils over limestone.

Strata 2. A mixed farming, forestry and recreational area of low productivity; shallow soils over granite.

Strata 3. Predominantly agricultural area along the Ottawa River; relatively deep soils over granite.

Strata 4. Predominantly forested area; medium to shallow soils over granite.

Strata 5. Mixed farming and forestry area along the Madawaska River Valley; medium to deep sandy soils over granite.

Random blocks of patented land of varying sizes were selected within each Strata. All resident landowners within each selected block were contacted by Department of Lands and Forests Staff. Absentee owners were contacted through the mail by The Federal Department of Forestry.

Only those persons contacted by Department of Lands and Forests Staff were questioned concerning idle and abandoned farm land. A sample questionnaire is attached.

Table 1 Sampling Intensity

Strata	Total Land Area (1)	Estimated % of Patented Land (2)	Estimated Area of Patented Land (2)	Area of Patented Land Sampled	% Sampled
1	1,192,069	100%	1,192,069	42,527	3.6
2	717,108	90%	645,392	24,509	3.8
3	326,659	100%	326,659	12,853	3.9
4	1,380,288	45%	630,076	10,811	1.7
5	610,760	50%	305,380	20,555	6.7
Total Tweed District	4,226,784		3,099,576	111,255	

(1) Figures report in F.R.I. Survey 1957.
(2) All land except Crown and Federal lands.

Results

Using a ratio of total patented land area sampled to total patented land in each strata, it is estimated from the survey that there are some 230,000 acres of cleared farm land which is not being used for farming, in the Tweed Forest District. This figure includes completely abandoned farm land as well as idle farm land on active farms. This figure does not include pasture lands presently being used as such.

On the basis of the owners judgement as to the suitability of this idle land for the planting and growing of trees, it is estimated that some 90% of this area of idle farm land is suitable for forest production. Because of the common misconception that trees can be planted and grown successfully on almost any poor soil, this figure is likely high.

Table 2 Survey Estimates

Strata	Estimated Area of Patented Land (acres)	Cleared Land Not being used for Farming (acres)	% of Total Pat. Land Area	Plantable Land (acres)	% of Cleared Land
1.	1,192,069	43,083	3.6%	36,020	83.6%
2.	645,392	50,691	7.1%	43,344	85.5%
3.	326,659	30,828	9.4%	29,380	95.3%
4.	630,076	61,021	9.7%	59,389	97.3%
5.	305,380	45,120	14.8%	38,628	85.6%
Total Tweed District	3,099,596	230,743	7.5%	206,761	90.0%

Summary

From a survey carried out in 1961, it is estimated that 7.5% of all patented land in the Tweed District is cleared farm land which is not being used for farming purposes. Of this total of 230,000 acres, 90% might be considered suitable for forest production.

SUPPLEMENTARY QUESTIONNAIRE

Survey of Forest Production from Private Land in Ontario

1. Total area of land _____ acres. (from Form I).

2. Forested acres _____ acres. (from Form I).

3. Has any portion of the land been cleared for agriculture at any time?

   Yes _____ No _____

4. If "Yes" under (3), how many acres? _____.

5. How many acres of this cleared land are not being used for farming purposes?

   _____ acres.

6. How many acres of the cleared land which is not being used for farming purposes could be planted with trees?

   _____ acres.

7. Have any trees been planted on the cleared land which is not being used for farming purposes?

   Yes _____ No _____

   If "yes", how many trees? _____.

(For Tweed District Office Use Only)

FISH AND GAME ON AGREEMENT FORESTS
(as seen by a forester)

by
R. J. K. Murphy

Abstract

The 160,000 acres of Agreement Forests in Southern Ontario offer an opportunity to demonstrate multiple use management and at the same time alleviate some of the increasing demand for areas on which hunting and fishing may be enjoyed. Several suggestions are advanced based on the author's experience as a forester in the Lake Erie District during the period 1949-1960, and on a lifetime interest in trout fishing and small-game hunting.

In Southern Ontario, almost all, but not quite all, of the land is privately owned. The landowner (except for very few who charge for hunting or fishing privileges) can derive no revenue in the way of grants or tax relief for providing good wildlife cover. In spite of an increase in the number of biologists, the improvement of the technical level of conservation officers, and establishment of Watershed Conservation Authorities, the game habitat in Southern Ontario has deteriorated during this last decade. Suitable environment is being constantly destroyed by enlarging agricultural fields, chemically spraying fence rows, converting rail and stump fences to wire or electric, pasturing woodlots and by specialization in one crop economies (i.e., tobacco). In addition, more and more private land is being posted each year.

Resource managers realize we can transport timber products from Northern and Central Ontario to Southern Ontario, but we cannot move wildlife habitat. We can, however, create, improve, protect, renew, or prolong those conditions which will enhance fish and game production on areas over which we have influence.

The largest acreage of publicly-owned land in Southern Ontario is the Agreement Forest area. Planting open fields, excluding livestock and improvement cutting, has unintentionally and automatically improved conditions for wildlife, but little planned specific action takes place toward this goal. (Exception is an area adjoining Luther Marsh.)

On the 160,000 acres of agreement forests there are four broad situations where habitat improvement could be part of the overall management plan.

(1) Large areas of protection forest, such as much of the Bruce Peninsula or Moira Forest, which does not warrant silvicultural expenditure for timber production at present.

(2) Small areas in productive forest tracts which are too wet, too steep, too dry, too small, or too heavily covered with non-commercial vegetation to provide an adequate return as a forestry investment.

(3) Areas or facilities within the forest used for access or protection purposes.

(4) The productive forest area.

Possible Projects and Scope

The first set of circumstances are areas of quite wet or thin soil sites. Many foresters would like to see these areas managed mainly if not solely for wildlife production. While inventory is not complete it is estimated that there are at least 16,000 acres in blocks of 100 acres or more which must be at the present time considered protection forest. In a recent land acquisition by Big Creek Authority a 100-acre area was purchased and placed under agreement, although it has virtually no forest production potential. However, most of the acreage purchased by this Authority is productive. These areas of considerable protection forest may occur in most agreement forests, but the most significant are in the Upper Thames, Grand, Bruce, Victoria, Napanee, Moira and Grenville forests.

The second situation exists on virtually all forests. The amount of land available for mainly fish and wildlife production might vary from less than 5% on York County to over 20% on many other forests. If 10% is taken as an average, then 12,000 acres could be devoted to habitat improvement.

Suggested projects are as follows:

(A) Planting small fields or seasonally flooded areas to cereal crops and leaving same unharvested.

(B) Simply leaving some difficult sites in the present scrub-shrub-pioneer forest vegetation.

(C) Planting suitable shrubs or trees which provide a food supply in areas too small to constitute a potential forest stand.

The third class of projects would be used for wildlife habitat, facilities which are on the forests for other purposes. Possibilities are:

(A) Enlarging or adapting existing ponds to the point where they would provide useful waterfowl, fish or muskrat environment.

(B) Enpounding water in ravines.

(C) Planting currently worked fireguards to an annual plant like buckwheat. (Buckwheat planted July 1 should remain green until frost.)

(D) Plant suitable dwarf deciduous shrubs on temporarily abandoned roads or fireguards.

(E) Stream improvement.

(F) Artificial food, cover, or nesting accommodation.

The opportunities for the above type of project vary greatly from forest to forest. Pond sites can be found on most of the high water table properties in Erie and Huron Districts. Three natural kettle ponds and four dug ponds exist on York Forest.

The drier sand plains, interlobate moraines and shallow soil areas would offer little possibility for pondwork.

Ravines with continuous or seasonal stream-flow are common on most of the till soils, and wherever the sand soils are not too deep. For example, four dams have been constructed on York County, and three other places exist where one-half to one acre impoundments could be built without serious damage to surrounding timber. Naturally the acre-foot cost and possible timber destruction must be considered before estimating the number of opportunities that exist for impoundments.

Fireguard networks are maintained through most of the sand plain and interlobate moraines. For example, York County has about 40 miles of fireguard. As the plantations grow older, interior fireguards are often not cultivated. 1 - 2% of most productive forests could be considered roads or fireguards.

Trout streams exist on one Big Creek Property in Erie District, on a few tracts within the Ganaraska watershed and on several properties in Simcoe District. In Grey and Bruce counties over 20 different tracts contain or adjoin some 15 miles of trout water. Some of these streams need no improvement, while others could produce more or larger fish with work being done on them.

Creating artificial conditions, such as feeding stations, pheasant release pens, wood duck nests, etc., might depend largely on the interests of the local caretaker, the local conservation officer, and the proximity of the property to the home of the officer concerned. It is sufficient to say we do have publicly-owned property where these activities could take place.

The <u>fourth aspect</u> is to modify woods operations in activity, time, or extent to improve or prolong wildlife habitat.

Some actions could be:

(a) Do stand improvement work in late autumn so that browse (from tops) will be available for food during winter months.

(b) Spread harvest operations on an annual basis so that regeneration and "tops" browse will be available on a continuous basis.

(c) When it is debatable which way a stand should be treated from a silvicultural consideration, the decision could be made in favour of the method which will enhance habitat.

There are some reasonable objections to devoting funds to enhance Agreement Forests for public hunting:

(1) It may be felt the acreages involved are too limited to warrant attention.

(2) The increased use of area could lead to increased fire hazard, theft, and vandalism.

(3) There might be a drop in overall timber production.

(4) Confusion or controversy might ensue regarding what division should supply funds and what expenditures are a legitimate charge to the forest.

Some benefits that should accrue by specifically improving fish and wildlife habitat are:

(1) Increased hunting and fishing.

(2) Interest stimulated in forestry by a larger cross-section of the public.

(3) A place available in Southern Ontario where biologists can actually try out ideas and set an example for interested private owners.

(4) Greater interest in forestry and property protection might be taken by conservation officers.

(5) With the increase in posted lands, an answer can be given to the hunters when they ask, "Where can we hunt?"

(6) If hunting or fishing improved considerably on these areas, conservation officers could concentrate their efforts here. Much time must be spent now patrolling areas where game and hunters are scarce.

(7) Some land on which it is quite uneconomic to practise forestry would be withdrawn from same, and thus forestry expenditure would be reduced.

Some of the above thoughts are the result of:

(A) Experience as a conservation officer, as well as a forester, and thus having direct contact with hunters.

(B) Partaking in (1) upland game hunting, (2) rabbit hunting, and (3) trout fishing on agreement forests.

(C) Having the acquaintance and co-operation of Fish and Wildlife personnel in Erie District for several years.

THE LAKE PENAGE DEER YARD'S 1962 SPRING DEER SURVEY WITH OBSERVATIONS ON HABITAT CHANGES IN THE AREA

by
D. R. Hughson
Conservation Officer, Sudbury District

Abstract

From a survey carried out in the Penage Lake deer yards it was calculated that the 1961-62 wintering deer density was 16.5 deer per square mile and the winter mortality was 3.2 dead deer per square mile. A marked reduction of the 1961-62 winter deer range over that occupied by deer in 1958-59 was evident in this area. A review of the early logging history suggests a parallel in the changes observed in the deer herd. Three experimental areas were cut as a habitat improvement project using voluntary assistance. A "cut and push" system provided immediate browse which was used almost at once by the wintering herds. It was found that 3 man-days are required to cut a one acre area.

PURPOSE

In March of 1961 the writer, having completed several cruises of the Lake Penage Deer Yards, submitted a short report of his findings and a personal evaluation of the deer situation for this area to the Sudbury District Fish and Wildlife office. This report was subsequently forwarded to Maple where it was given critical consideration.

It was pointed out in the reply from Maple that more facts were needed to substantiate the writer's opinions and estimates. This report is designed to supply some of the missing facts and figures.

THE AREA

The 1961 report covered the townships of Atlee, Bevin, Caen, Dieppe, Goschen and Sale (Map 1). The 1961-62 winter range, as mapped in February, 1962, falls primarily within the townships of Caen and Goschen (Map 2). During the winter of 1958-59 the wintering concentration was located in Dieppe, Bevin and Sale, as well as Caen and Goschen (Map 2).

The overstory of the 1961-62 yarding area consists of red and hard maple, ironwood and a scattering of conifer. The understory is typically striped, red and hard maple, with an abundance of hazel. Some balsam fir and white spruce regeneration is also present. The topography is normally rolling ridges covered to depths of up to six inches of leaf litter and glacial till. About 5 per cent of the area is swamp.

While map 2 suggests that there may be as many as four concentration areas in Caen and Goschen townships this pattern is entirely superficial. This report will deal separately with the three individual units as surveyed and with all three units as a composite wintering area.

Forty-one land use permits were issued in 1961 for hunt camps in the Lake Penage area. Approximately 300 private camps are located on Lake Penage and another 30 on adjacent waters. One hundred of the Lake Penage camps are used as deer hunt camps, as are the 30 camps. Also, in the area are three commercial camps that accommodate deer hunters.

METHODS USED

This survey was carried out with the assistance of seven Royal Canadian Air Force Ground Search and Rescue men from the Radar Station at Falconbridge.

The methods used in the survey and the formulae used in the report are those outlined by Mulligan and Trodd (1960). Fifteen chain intervals were allowed between crotesing plot lines. A wintering period of 120 days is used in the calculations. The deer moved into the area in mid-December and out by mid-April.

All evidence of moose and wolves was recorded by the survey crews.

SURVEY RESULTS AND CALCULATIONS

Map 3 provides the survey area on a larger scale with the cruise lines and units marked in.

Unit 1

38 crotesing plots were examined and 2.4 miles of lines were searched for deer carcasses.

Seven crotesings or an average of .184 crotesings per plot and no carcasses were found in Unit 1.

$$\frac{.184 \times 100 \times 640}{12.7 \times 120} = 7.7 \text{ deer/sq. mi.}$$

Unit 2

Ten crotesings were found on 36 plots producing an average of .277 per plot. No dead deer were located along 2.3 miles of lines.

$$\frac{.277 \times 100 \times 640}{12.7 \times 120} - 11.4 \text{ deer/sq. mi.}$$

Unit 3

A total of 61 crotesing plots averaging .590 crotesing per plot were examined and 3.8 miles of line searched for dead deer in Unit 3. One deer carcass (that of a year old animal) was located in this area.

$$\frac{.590 \times 100 \times 640}{12.7 \times 120} = 24.8 \text{ deer/sq. mi.}$$

$$\frac{1 \times 640}{91.2} = 7.0 \text{ deer carcasses/sq. mi.}$$

Three Units Combined

One hundred and thirty-five crotesing plots yielded a total of 53 crotesings or an average of .392 per plot. One dead deer was found in 202.5 acres of survey strips.

$$\frac{.392 \times 100 \times 640}{12.7 \times 120} = 16.5 \text{ deer/sq. mi.}$$

$$\frac{1 \times 640}{202.5} = 3.2 \text{ deer carcasses/sq. mi.}$$

The combined area of the three units is 1.80 square miles. This area represents about 50 per cent of the total Lake Penage winter range as mapped from the air in February, 1962, and examined by foot and snow toboggan during the winter months. While there are larger yarding areas to the south, it is the opinion of the writer, collaborated by information received from Conservation Officer L. E. Drolet on deer movements that the Killarney Mountains provide a topographical boundary of deer range. This then means that the yards shown in Map 2 represents the winter range for the deer supplying the Lake Penage hunters. It should also be noted from Map 2 that there has been a considerable constriction of the range used by deer during the period, since the winter of 1958-59.

A total of six moose crotesings were found on the deer crotesing plots during the survey and four wolf scats were found on the dead deer strips.

DISCUSSION AND CONCLUSION

The Lake Penage country provided its best deer hunting during the 1930's and 40's. It was during the 40's that a slight decline in the success was first noted. This downward trend continued at an increasing rate during the 50's until the severe winter of 1958-59, when a very marked change took place. Deer were no longer seen regularly along the lake's shores, evidence of deer activity became scarce and the number of animals killed each fall drastically decreased.

A review of the lumber industry suggests a similar change in forest conditions. Timber operators who were active in the first decade of this century undoubtedly would be faced with a similar problem to that of the hunters. They would be hard pressed to find merchantable timber in the area.

Thorpe (1951) provides us with an interesting review of the lumbering industry in this area during the first 50 years of the 20th century. For example, the Victoria Harbour Lumber Company over a 16 year period (1908-25) removed from Bevin, Dieppe and Caen townships a total of 115,000,000 feet of white and red pine sawlogs and about 3,000,000 feet of hemlock and white spruce. Chew Brothers operating in Goschen township in the years 1918-47 cut 53,000,000 feet of red and white pine, along with the following:

1,000,000 feet birch;
2,500,000 feet white spruce;
9,000,000 feet hemlock;
500,000 feet cedar logs;
110,000 feet ash;
200,000 feet maple;
60,000 feet oak;
15,000 cords mixed pulpwood;
600 cedar poles;
1,000 cedar posts.

As a comparison to this early operation of Chew Brothers, E. Salo working in Goschen township in the period 1959-61 cut;-

34,850 feet of red and white pine;
6,488 feet of birch;
3,000 feet spruce;
16,340 feet hemlock;
439 feet cedar;
52 cords of hardwood fuelwood.

Salo's annual cut represents about 3 per cent of Chew Brothers annual cut. Old residents of the area recall these large operations early in the century and the gradual build up of deer. When questioned at length they revealed the conditions which we consider ideal for deer. Today it is difficult to find deer range in the Lake Penage area at all comparable to their descriptions.

The Lake Penage area, because of its limited access routes, provides the Sudbury District with one of its best sources of hunter success information. Prior to the decline of the deer herd a checking station located on the Penage Lake road provided this district with an adequate sample of hunter statistics. Since the decline, the author has been pressed to contact sufficient hunters to make the data collected worthwhile.

With access limited by the road system, and a check being made of the hunters through the commercial airways and by a camp survey, it is the opinion of the author that a very high per cent of the deer legally killed were checked in the fall of 1961. The calculated kill for the area described in this report is 25-30 animals.

To arrive at the number of hunters present in the area it is necessary to assume that the average of five men per camp recorded in the land use camp survey, Hughson (1962) holds true for private camps as well. The calculated hunting force is then:

41	land use permits	x 5	=	205 men
130	private camps	x 5	=	650 men
3	commercial camps	x 10	=	30 men
	casuals		=	100 men
				985

This then gives a hunter success for the area of:

$$\frac{25}{985} \times 100 = 2.5\% \qquad \text{or} \qquad \frac{30}{985} \times 100 = 3.0\%$$

It has been pointed out that a wintering deer density of four deer per square mile is needed to provide the hunters with any deer at all. The spring crotesing count indicates a winter deer density in excess of 4 deer per square mile, but the limited winter range (less than 5 per cent of six townships covered in this report) produces a small wintering herd. It would appear from winter aerial and ground surveys that a total winter range of five square miles would be the maximum for the Lake Penage area. This results in a calculated wintering deer population of 83 (16.5 x 5 = 82.5. In the opinion of the Sudbury District fish and wildlife staff the Lake Penage deer herd has declined to the point where hunter success will be negligible for some time to come.

Remedial operations have begun on an experimental basis in the Lake Penage area. The writer, observing the downward trend in the deer herd, discussed the situation with Fish and Wildlife Supervisor, C. F. Bibby, in the spring of 1960. Mr. Bibby, who is fully acquainted with the area and was aware of the problem some years ago, suggested several areas that might be considered for experimental work. The area forester was approached for his opinion and ideas and during the winter of 1961 two one acre plots were cut by the writer with the assistance of five men from the Creighton-Lively Conservation Club. The areas selected were adjacent to the 1961 yarding area (Map 3) and were covered primarily with pole size maples, with an overstory of conifer. The plots were clear cut of hardwood leaving only a few conifer trees standing. Some trees were cut part way through and pushed over, others were cut off completely. The "cut and push" system provided some browse during the 1961-62 winter and sucker growth from the ground is expected to provide considerable browse for the 1962-63 winter. During the winter of 1961-62 with the assistance of the Royal Canadian Air Force Ground Search and Rescue team the author enlarged one plot to three acres and cut a third plot of two acres.

It has been found, from the work carried out to date, that it requires three man-days to cut an acre. The areas are used almost immediately by the wintering herds and in one instance when the

cutting was carried out a short distance from the wintering herd, they were attracted from the cover of the area they were frequenting, across an open area to the cut. Considerable organization and provision must be made to carry out a relatively short cutting operation when using voluntary assistance. This tends to provide an imbalance between administration and operation and results in an unsatisfactory work load distribution.

It is evident that remedial work cannot be carried out on an economical basis by jobbers in this area and any further improvements will have to be done as the experimental work was or on a strictly district management project basis.

SUMMARY

1. A density distribution and dead deer survey was carried out in the spring of 1962 in the Penage Lake deer yards.

2. It was calculated that the 1961-62 wintering deer density for this area was 16.5 deer per square mile and the winter mortality was 3.2 dead deer per square mile.

3. The 1961-62 winter deer range is considerably less than that occupied by deer in 1958-59 in the Lake Penage area.

4. A review of the early logging history suggests a parallel in the changes observed in the deer herd.

5. The calculated 1961 legal kill of deer for the area was 25-30 animals for a hunter success of 2.5 - 3.0 per cent.

6. The calculated 1961-62 wintering deer population for the Lake Penage deer yard is 83 animals.

7. Three experimental areas have been cut as a habitat improvement project. A cut and push system provides immediate browse, while clear cutting results in future growth.

8. Three man-days are required to cut a one acre area.

9. It is suggested that remedial work be carried out as a district management program, as economical jobber operations in this area are non-existant at this time.

ACKNOWLEDGMENTS

We are indebted to the Royal Canadian Air Force Ground Search and Rescue Team headed by F/O L. Legrange, Falconbridge; and the Creighton-Lively Conservation Club for the assistance they provided during the spring deer survey and the winter cutting operations.

Thanks are due to Fish and Wildlife Supervisor, C. F. Bibby and Biologist, D. I. Gillespie, for suggestions and assistance provided in planning this work. I would like to thank Conservation Officer, L. L. Trodd, for the assistance he provided during the winter patrols of 1960-61 and 1961-62.

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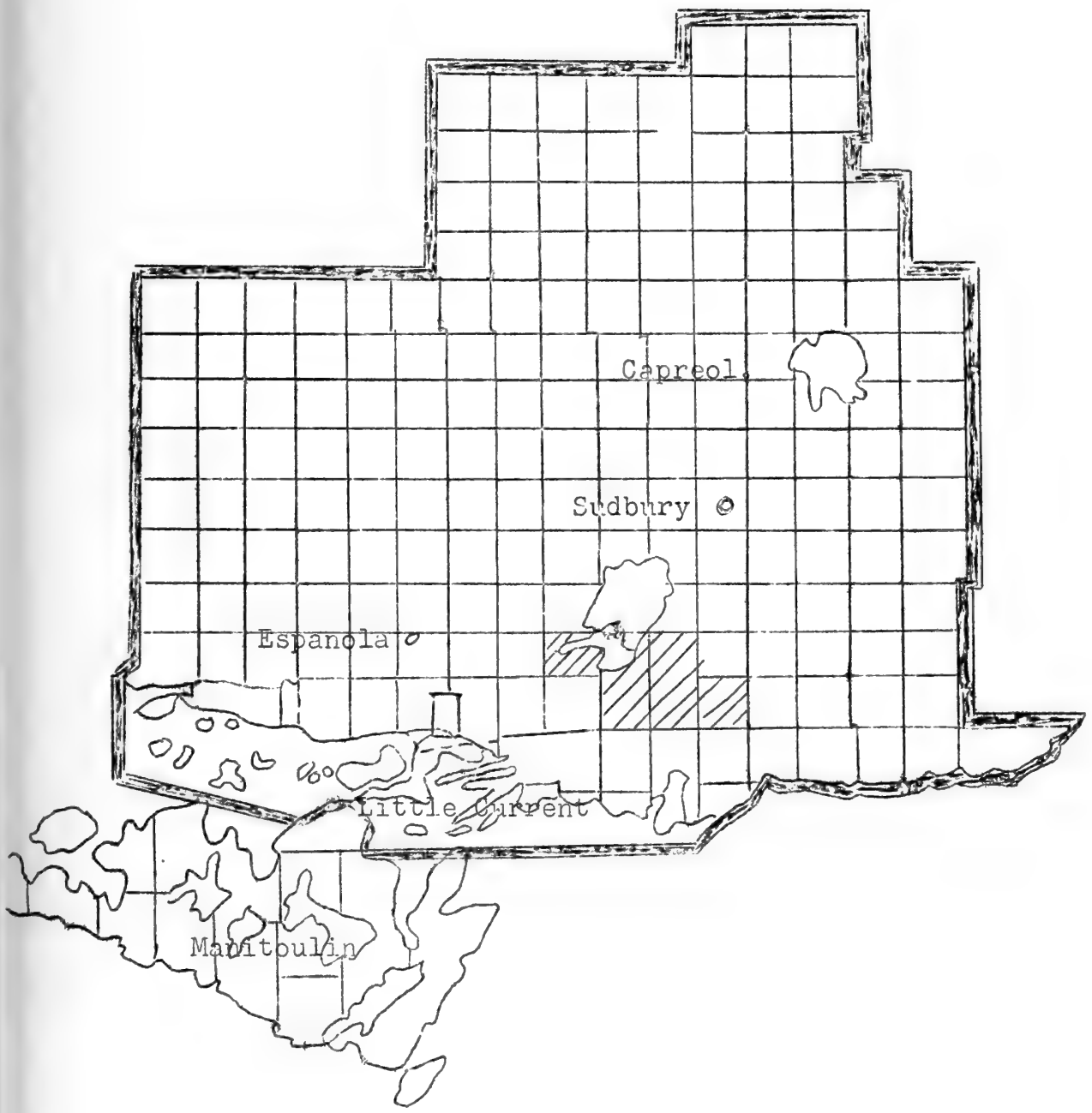
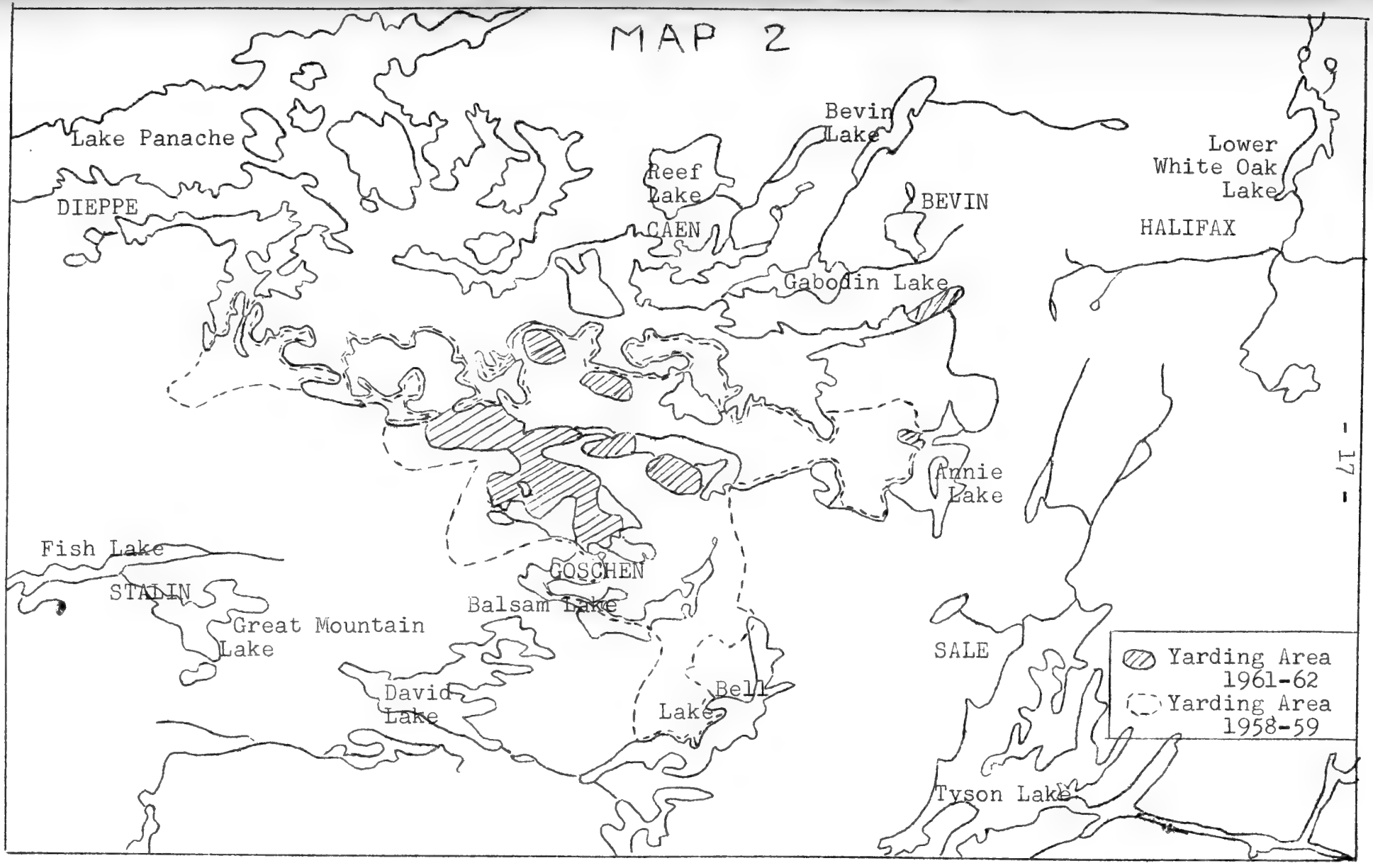
SUDBURY DISTRICT

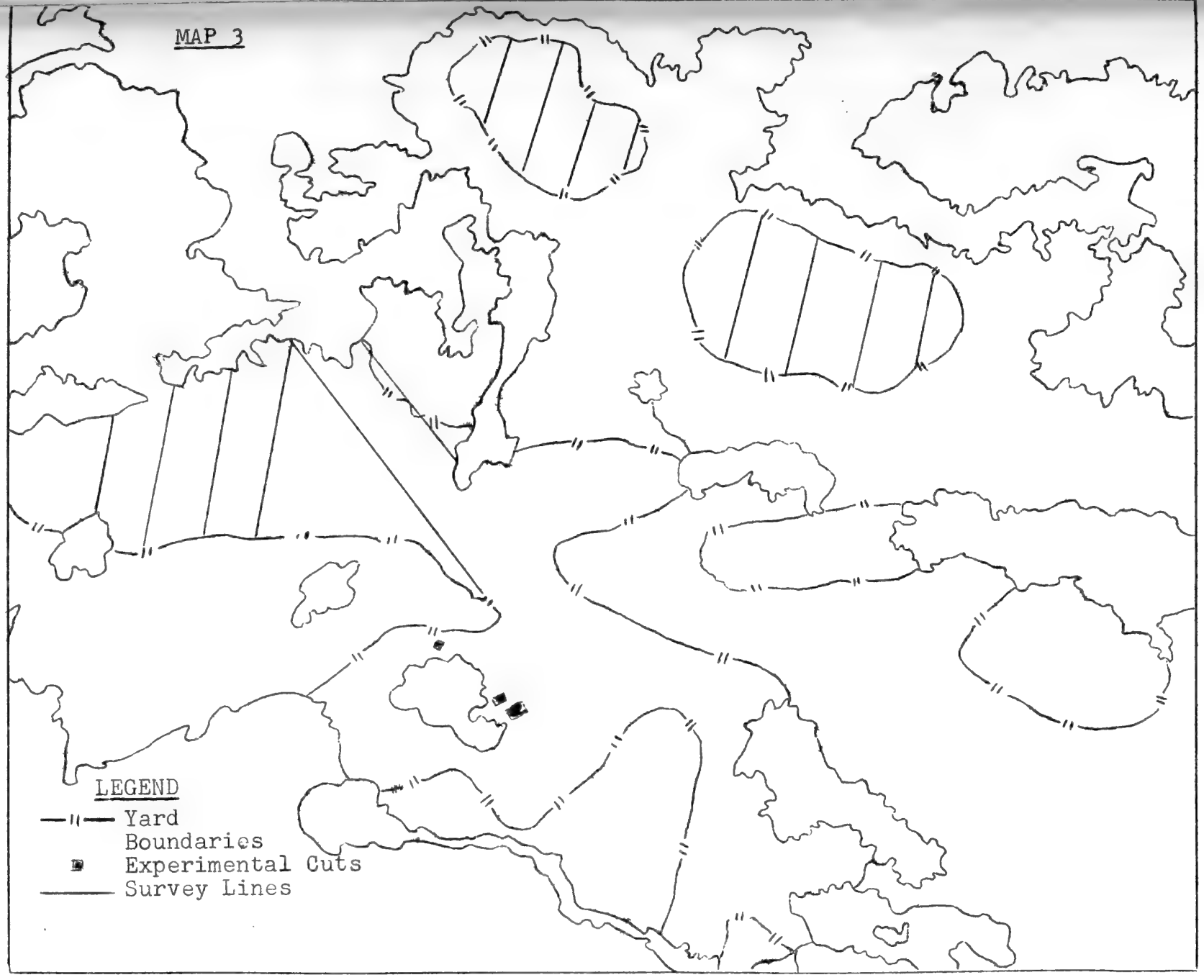


Map 1 Showing Survey Area.

Miles

20 10 0 20 40


MAP 2
Lake Panache
DIEPPE
Reef Lake
CAEN
Bevin Lake
BEVIN
Gabodin Lake
Lower White Oak Lake
HALIFAX
Annie Lake
Fish Lake
STADIN
Great Mountain Lake
GOSCHEN
Balsam Lake
David Lake
Bell Lake
SALE
Tyson Lake
Yarding Area 1961-62
Yarding Area 1958-59


MAP 3
LEGEND
Yard Boundaries
Experimental Cuts
Survey Lines

1962 WINTER AERIAL CENSUS OF WOODLAND CARIBOU (Rangifer tarandus) IN THE PICKLE CROW-ARMSTRONG AND KOWKASH-MARTIN FALLS REGIONS

by
B. H. Gibson
Biologist, Geraldton District

Abstract

An aerial woodland caribou inventory was carried out in 1962 in the Pickle Crow-Armstrong and Kowkash-Martin Falls regions of Ontario from January 12 to March 15. The survey area had latitude boundaries of 50°25'N. and 52°N. Longitude boundaries were 84°30'W. and 89°30'W. Only one herd of six caribou was sighted in 24,640 square miles. This herd was not on a transect. One hundred and eighty-four moose were seen. There were 4,510 miles of transect flown, with a total transect area of approximately 2,948 square miles. Of this total transect area, 1,865 square miles were sampled at an average altitude of 800 feet and 1,083 square miles were censused at 1,000 feet. Thus 11.9 per cent of the 24,640 square miles was actually surveyed. Nine flocks of sharp-tailed grouse were seen and beaver, otter and wolves appeared to be numerous over most of the area.

Purpose of the Census

The aerial survey carried out this year is part of a province-wide assessment of our woodland caribou populations. This study should help to provide us with valuable management data on the caribou. Data concerning the total number of caribou, and their densities and distribution over their winter range are valuable management aids. Information on the caribous' movements and the sex and age composition of the herds are also extremely valuable information derived from a survey of this type.

Method of Survey

The Geraldton District was asked to survey an area of approximately 25,000 square miles. This area has latitude boundaries of 50°25'N. and 52°N. Longitude confinements were 84°30'W. and 89°30'W. *Maps on a scale of eight miles to the inch were prepared of the survey area. Parallel predetermined flight lines or transects were marked on these working maps. The western portion of the area surveyed (from lines 1 to 28 inclusive) was flown at four mile spacings at 800 feet on the average because of the heavy forest cover. The eastern portion (from lines 29 to 41 inclusive) was flown at eight mile intervals at an average altitude of 1,000 feet because the open swamp of this region facilitated the sighting of animals at greater distances. The higher altitude made navigation easier in this area where navigation aids, (lakes, rivers) were fewer. Armstrong, Attawapiskat Lake, Geraldton and Pagwa in this order were used as bases of operations.

A large map showing the distribution of tracks of moose and woodland caribou, and sightings of moose, caribou, wolves and sharp-tailed grouse accompanied the original report. (Maple Library).

The aircraft used was a Beaver; its crew was composed of a navigator and two observers. A piece of typewriter ribbon was fastened to the wing strut at the number two position. Only animals sighted between the ribbon and the ski were considered to be on the transect. This gave us an effective coverage of 2 x 800 x 2 or 3200 feet at an altitude of 800 feet, and similarily 2 x 1000 x 2 or 4000 feet coverage on each transect of 1000 feet. There were 41 of these flight lines for the survey area. Each transect was 110 miles long, ran approximately north to south and required usually about 65 minutes to fly at an average air speed of 105 miles per hour. It was originally planned to fly four lines a day, but this was only accomplished on three occasions due to inclement weather experienced throughout the study period. A total of 41 x 110 or 4510 miles of transects was flown. Approximately 45 hours of flying time was involved in flying the transects.

Sightings of moose and caribou or their tracks were recorded directly on the working map by the navigator. Only actual sightings of other species (wolves, otter, sharp-tailed grouse, etc.) were recorded, but not their tracks. The observers recorded the sightings and the times of each sighting. The navigator also recorded the time of flight over prominent topographical features as an aid to navigation. At times it was difficult for the navigator to record all track or animal sightings and still navigate properly. In many such cases, it was necessary to mark in the observations later on the ground, using the records of the two observers. In all cases where caribou or their tracks were observed, however, these sightings were recorded immediately on the map for greater accuracy.

The survey was originally expected to require approximately three weeks to complete, beginning January 12. From the start of the survey, however, inclement and extremely cold weather retarded the survey. On several occasions, the aircraft became airborne in -20 degree temperatures with clear skies, only to encounter what appeared to be clouds of ice crystals which reduced the visibility to zero, and forced immediate landing of the aircraft or, if possible, a return to base until flying conditions improved. This ice-cloud condition was often met while flying out of Armstrong and Attawapiskat Lake. It usually was encountered on very cold and clear afternoons. This condition, this winter, has been the worst in years, according to bush pilots in the area.

Note: Daily flight logs were kept. On these forms meteorological data and numbers of animals sighted on each transect were recorded, as were observations of interest such as concentrations of moose and caribou tracks.

Observations

(a) Topography and Timber

The area surveyed was comprised of two generally different topographic and timber types. The terrain and timber were heterogeneous in the western portion (lines 1 to 28 approximately) of the census area. It was sometimes flat, as in the valleys, and

sometimes steep, with bluffs and hills common in the upland areas. In the lowland areas, black spruce was the dominant tree species; jackpine was the principal species on the uplands. Small dystrophic lakes were infrequently seen compared with the numerous "finger" lakes common to ice-scoured plain regions.

The northern portion of the western area surveyed was comprised of timber composed of about 95 per cent conifers, while in the south section, about 80 per cent of the timber was composed of conifers. The remaining percentages were comprised chiefly of hardwoods such as white birch, poplar, willow, tag alder and hazel. The birch and poplar were generally in isolated, homogeneous "patches", scattered throughout the expanse of spruce. The tag alder and willows were usually near the shores of the streams or lakes. A large burnt-over area of about 50 square miles was present southwest of Attawapiskat Lake.

East of line 28, approximately, there was a noticeable transition to flatter, more swamp-like terrain that was considerably more homogeneous than it was west of line 28. Swamp conditions probably made up about 60-75 per cent of this area. In the swamp areas, the spruce were either in random, small, isolated and confined patches of large trees within the expanse of swamp, or were widely scattered and stunted throughout most of the swamp region. The lakes in the swamp area were small, generally oval, widely scattered, with low shorelines and generally were typically dystrophic.

(b) Wildlife Observations

1. Caribou

The heavy coniferous region west of transect 28 did not appear to be utilized to any degree as winter range by the caribou. No caribou were sighted on the entire 28 transects. A few, scattered tracks were seen on one occasion each, on lines one and five. The spruce canopy at times was so heavy that some caribou could have been present, but not seen. From the scarcity of tracks observed, this whole area did not seem attractive to caribou.

In the portion of the surveyed area east of line 28, the swamp-like, relatively homogeneous terrain appeared to be more attractive winter caribou habitat. This appeared to be particularly true of the north end of the area between transects 31 to 35. Along these transects, tracks and feeding craters were seen on several occasions. In all cases, the animals appeared to be constantly on the move.

Only six caribou were seen in the swamp area; these were sighted on February 21, between transects 31 and 32 at the north end. Five unidentified adults and one unidentified calf formed the herd. Presumably, there were one or more does in the herd because of the presence of the calf. Attempts to drive the animals from the perimeter of mature spruce in which they stood were futile, and therefore, it was impossible to photograph them. The caribou did not appear to be unduly alarmed, but remained immobile and stared at the

aircraft. It is conceivable that this herd could have been part of a much larger herd, because of the large number of tracks seen in the area, compared with the small number of animals observed.

Only at the north ends of the transects were many caribou tracks sighted. The north boundary (latitude 52°) of the survey area appears to be on the fringe of the best caribou range, because most of the tracks observed were near this latitude.

2. Moose

Sightings of moose in the survey area were numerous. As many as twenty animals were seen during a day's flying. A total of 184 were seen on the transects. This number is probably only a small portion of the total population in the region. It is likely that many were unobserved in the heavy timber in the western part of the survey area.

In some localities, the moose tracks interlaced to a great degree, giving the impression that large herds were involved. The largest herd seen, however, was comprised of eight animals sighted on transect eight. The areas the moose favoured were generally on the edge of a stream where willows and tag alders were abundant. The large, burned area southwest of Attawapiskat Lake appeared to contain a large population of moose. Moose appeared to inhabit the entire survey area, although they were more abundant in the western portion of the area surveyed. Moose sightings were less frequent in the swamp areas near latitude 52°, where most of the caribou tracks were seen.

There did not appear to be anydirect competition in any way between the moose and caribou. There appeared to be separate ecological niches occupied by both species near latitude 52°.

3. Other Species of Wildlife

Numerous signs of other species were present over most of the census area. Beaver dams and houses were abundant, indicating that beaver are widespread and numerous over most of the region. Otter also were abundant; it was not unusual to see as many as twenty sets of tracks of this species in a day's flying. Only three wolves were seen, although wolf tracks were common across the area. Nine flocks of sharp-tailed grouse were seen totalling 75 birds and averaging 8.3 per flock. Fox tracks were numerous, while lynx tracks were seen infrequently.

Results and Conclusions

(1) Within the 24,640 square miles surveyed there were 41 x 110 or 4,510 miles of transect flown.

(2) (a) The area of transects covered at an altitude of 800 feet for lines 1 to 28 inclusive was 110 x 28 x $\frac{3200}{5280}$ = 1865 square miles.

(b) The area of transects covered at an altitude of 1000 feet for lines 29 to 41 inclusive was 110 x 13 x $\frac{4000}{5280}$ = 1083 square miles.

(3) The area actually surveyed represented $\frac{2948}{24640}$ or 11.9 per cent of the total area.

(4) No caribou were seen on the transects.

(5) Six caribou were seen off the transects.

From the small number of caribou observed (6), and from the restricted area near latitude 52° over which any concentrations of caribou tracks were seen, it appears as if over 90 per cent of the total surveyed area is not utilized by caribou as winter range, at least not to any great degree. It also appears to be conclusive that the caribou prefer the northeastern portion with its swamp areas fragmented with spruce "patches". The western portion of the surveyed area is relatively unused by caribou. They do not appear to remain any length of time in one locality, as the few tracks seen indicated that the caribou moved considerably to the west or east.

There were periods during the survey when it was not possible to fly for a week or more due to unfavourable weather conditions. In this time, it is conceivable that there could have been considerable movement of caribou from one transect to another, hence the same herd of caribou could be responsible for many of the tracks observed near latitude 52°. As a result, there might really be a much smaller number of animals in the area than would appear from the numbers of tracks and the area over which they extended. Just how much movements of this nature occurred is difficult to ascertain, but they must be considered.

Summary

(1) An aerial census of woodland caribou was expedited in the Pickle Crow-Armstrong and Kowkash Martin Falls regions during the winter of 1962.

(2) An area of approximately 25,000 square miles was surveyed. There were 4,510 miles of transects flown with a total transect area of 2,948 square miles. Of this transect area, 1,865 square miles were sampled at an average altitude of 800 feet, 1,083 square miles were covered at an average altitude of 1,000 feet. Also, $\frac{2,948}{24,640}$ or approximately 11.9 per cent of the total area was sampled.

(3) From lines 1 to 28 the strips were spaced at four miles, and from 29 to 41 at eight miles, because of the more open terrain encountered, which facilitated sightings of animals in the latter region at greater distances.

(4) Inclement weather hampered the census and extended the duration of the survey by several weeks.

(5) The tracks of moose and caribou were recorded on the working map. Sightings of other species (sharp-tailed grouse, wolves, etc.) were recorded also.

(6) The western portion of the census area (1 to 28 approximately) is heavily forested with black spruce in the lowlands and jackpine on the uplands. Hardwoods comprise only about 5 per cent to 10 per cent of the timber. From lines 29 to 41, swamp, fragmented with patches of spruce was typical of the survey area.

(7) Only six caribou were seen during the entire project; these were recorded off transect 31. Moose were numerous, with 184 being seen. Moose were most numerous in the western part (1 to 28). The entire area is far better suited ecologically for moose than caribou it seems.

(8) Caribou tracks were most numerous at the north ends of the transects in the swamp region (lines 31 to 35) near latitude 52°N.

(9) Caribou do not appear to use any of the survey area extensively except for the northeast portion along latitude 52°. This is probably the southern fringe of the best caribou range, judging from the greater number of tracks seen near this latitude, compared with the rest of the census area.

(10) Nine flocks of sharp-tailed grouse, totalling 75 birds and averaging 8.3 birds were seen. Three wolves were seen. Beaver, otter and wolves appeared to be numerous over most of the area, as judged from the large number of tracks seen of the latter two species, and from the number of houses and dams of the former species.

LYNX LIVE TRAPPING PROJECT IN WHITE RIVER DISTRICT

by
E. J. Mitchell
Conservation Officer

Abstract

A live trapping program was undertaken from January 4 to May 22, 1962 to obtain Canada lynx for tagging. The type of trap used is described and a sketch appended. Three areas where lynx tracks had been observed were chosen for trapping sites. Five lynx were captured, ear-tagged and released at the original trapping site. Recaptures of two different animals were recorded. Snowshoe rabbit and beaver meat were used as bait. A total of 14.5 man-days were spent on the project with an average of 62 trap-set-nights per animal taken.

Introduction

The lynx live trapping program was originally undertaken to obtain lynx for transfer and restocking within another district. This plan was later cancelled and the acquired equipment was used to commence a lynx tagging project in the Manitouwadge patrol area of the District on January 4th through to May 22nd.

Materials

Traps - A total of six live traps were built, four of which were used in this project. The traps were built from an original design believed to have been used in the Banff National Park for the purpose of live trapping, however, this could not be verified, nor could the name of the person responsible for the design be learned.

The following is a description of the trap, a sketch of which is appended to this report:

Dimensions - 2 by 2 by 6 feet

Frame - 2 by 2 inch wood

Covering - 1 inch chicken wire with plywood floor.

Door - A sliding drop door (originally wood replaced with metal due to warping)

Trigger Mechanism - When set the door is propped on a pin which is fastened by a flexible copper wire to the trigger lever, the wire passing through eye hooks inserted on cross bars on top of the trap.

Trigger Lever - Made of wood and swings freely on a wooden dowl (broom handle) attached to the sides of the trap at the top. A red flag is attached to the upper end of the lever the lower end being curved to receive the bait.

A removable plywood panel is situated immediately in front of the lever on top of the trap for inserting the bait. It is held in place by an iron rod passing through eye hooks fastened to the sides of the trap.

Tags

Ketchums Kurl Lock Ear Tags #2 and pliers were used with a piece of wolf snare wire as an aid in the tagging operations.

Baits

Snowshoe rabbits obtained by snaring and beaver meat donated by local trappers were used as baits.

Method

Trapping Operations

The sites chosen for the sets consisted of areas where lynx tracks were observed. Three areas were used throughout the trapping project; maps indicating the site of each trap set accompany this report. Areas are used in describing the trapping location sites since as many as three traps were set within a short distance of one another. These areas are similar in composition being regeneration jack pine, medium to dense stands, 15-20 years in age, and 15-25 feet in height.

The traps were checked frequently and left not longer than four days between visits. They were moved to a new location when tracks were no longer observed or when the traps were left untouched for a period of two or three weeks. When first set out the traps were completely covered with jack pine bows to form a covey and set within a stand of trees, being left in this manner for a period of two weeks. They were later moved and set on the edges of clearings, narrow trails and roads not used in the winter. This practice was continued throughout the remainder of the project after a book on lynx trapping methods had been obtained. The author expressed his opinion that trapping in this manner would produce best results.

Tagging

The lynx were tagged and released at the trap site, if possible. On two occasions the animals were transported to headquarters for tagging and returned to the trap site for release.

In the tagging operation the trap was turned on end limiting the animals movements. A piece of snare wire was formed into a loop and passed through one square of the wire mesh. It was then placed around the animal's neck and the head pulled against the cage, allowing the tag to be affixed at the base of the ear.

Results

A total of five lynx were successfully tagged and released at locations shown on the accompanying maps.

Area No.	No. Captured	Capture and release site Latitude	Longitude	Tag No.	Date of Release	Age
1	1	48° 54'	85° 55'	516	Jan. 25	Young
1*	1	48° 53'	85° 53'	517	Feb. 14	Young
1	1	48° 54'	85° 55'	518	Feb. 15	Young
2						
3	1	48° 49'	85° 51'	519	Apr. 9	Adult
3	1	48° 49'	85° 49'	520	May 22	Young

* This lynx was captured in a snare by a trapper and brought to headquarters for tagging. The trapper choked the animal with the snare, tied it securely while it was unconscious and transported it in the trunk of his vehicle. It was tagged and released without difficulty.

The lynx bearing Tag No. 516 was caught three days after release, approximately one mile from the site in a No. 4 trap by the same trapper. It was brought to headquarters in the same manner described, and released a second time when no apparent damage was noted to the foot. The trapper declined to kill both these animals due to their small size.

One lynx, upon being approached while in the trap, repeatedly charged the side of the cage inflicting minor cuts to the nose. The remainder of the lynx showed no signs of being nervous until the actual tagging procedure commenced. In some cases the lynx were reluctant to leave the trap when the door was opened even when no one was near the trap.

One lynx (Tag No. 519) was captured three successive times in three different traps within the same area, the traps being situated approximately 1/4 mile apart bordering an old road. This took place over a period of three weeks.

On one occasion the tracks showed a lynx had passed within 15 feet of a trap with no apparent hesitation. This trap was situated in clear view bordering an old road. On two occasions the traps had been set off and the bait taken. It was believed the first animal escaped through the removable plywood panel which had a hole chewed in it. On the second occasion the drop door was half closed and buckled outward. In both cases the identity of the animal could not be determined due to a recent snowfall.

Numerous fox tracks circled the traps on a number of occasions, some tracks showed that the fox had stepped into the opening of the trap but had not taken the bait. Wolf tracks also passed near the traps but none came closer than 30 to 40 feet.

Both beaver and rabbit meat seemed to work equally well for baiting.

A total of 14.5 man-days were spent on the project with an average of 62 trap-set-nights per animal taken.

Cost

The traps were constructed at a cost of $35.00 each. The estimated total cost of the operation was $450.00.

Average Snow Depth

January	16.5"
February	20.9"
March	24.9"
April	5.0"
May	0.9"

Conclusion

On two occasions while using the snare wire as an aid to tagging the lynx were choked unconscious. This resulted from applying too much pressure with the wire. The lynx revived but a loss could be encountered if care were not taken in this method.

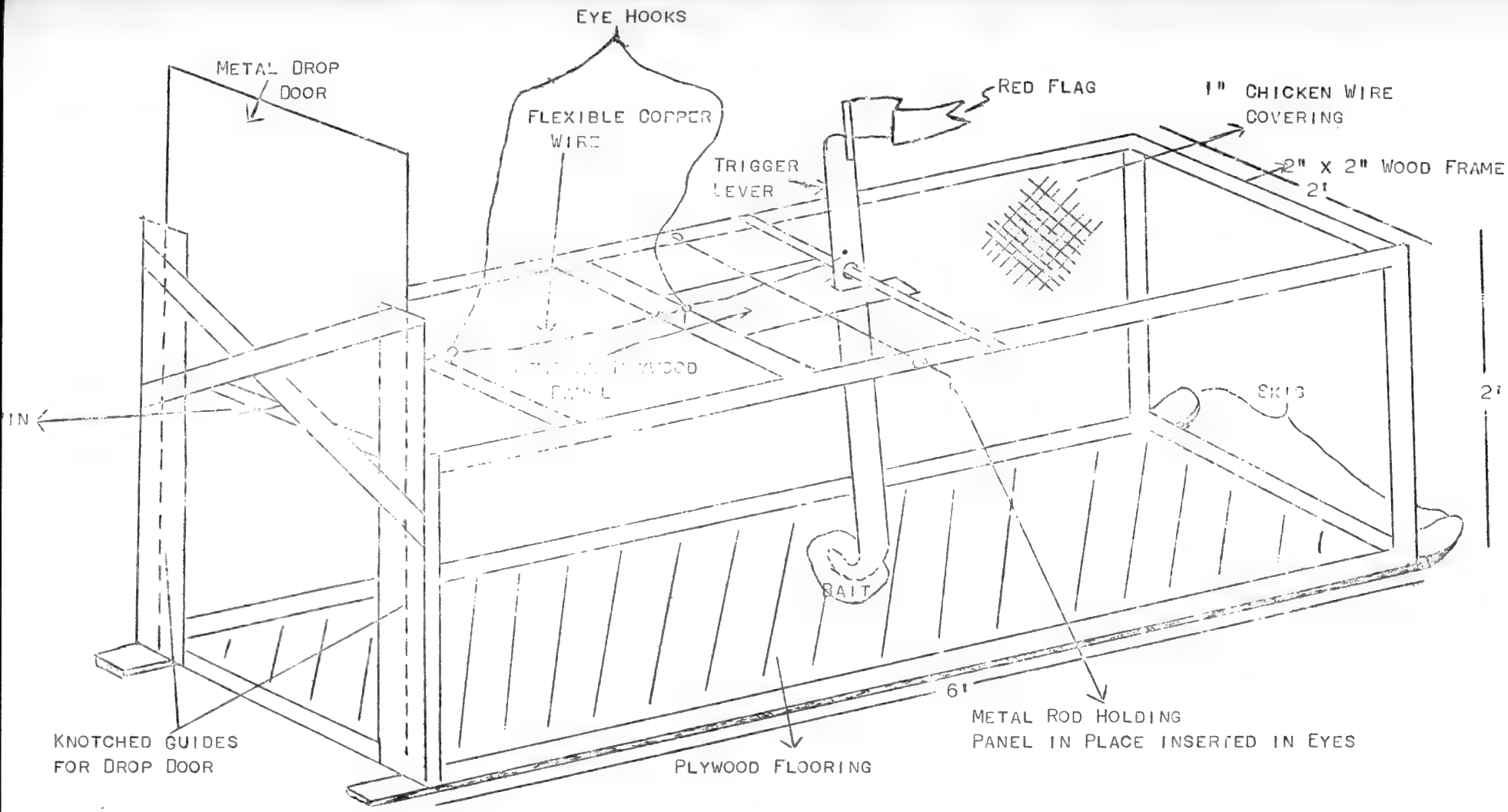
The lynx trapped and released were caught in sets left uncovered. No comparison could be made with the covey sets as this type of trapping was used for a short duration at the commencement of the project.

It was noted that more than one lynx travelled within the same area. This was evidenced by the fact that three lynx were caught in one area within a period of a month, two being captured in two days. One lynx was found dead in a snare (Trap area No. 1) within this period.

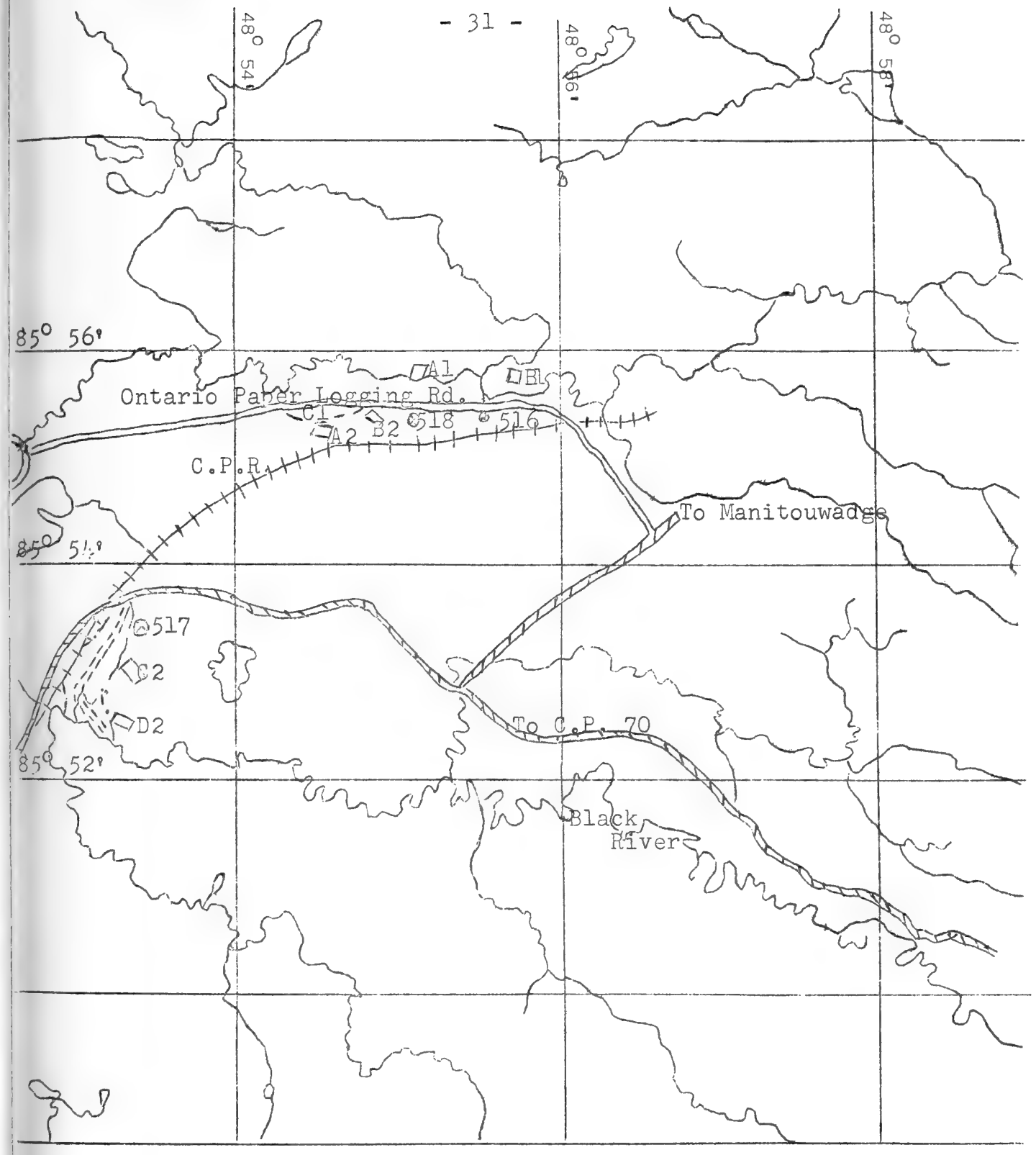
Information on the lynx trapped (e.g. sex, length, weight) was not taken but would prove valuable in future years. It is the intention at this writing to continue this project in future years and obtain pertinent information from all lynx captured.

References

Hawbaker, S. Stanley, 1953. Trapping North American Animals.

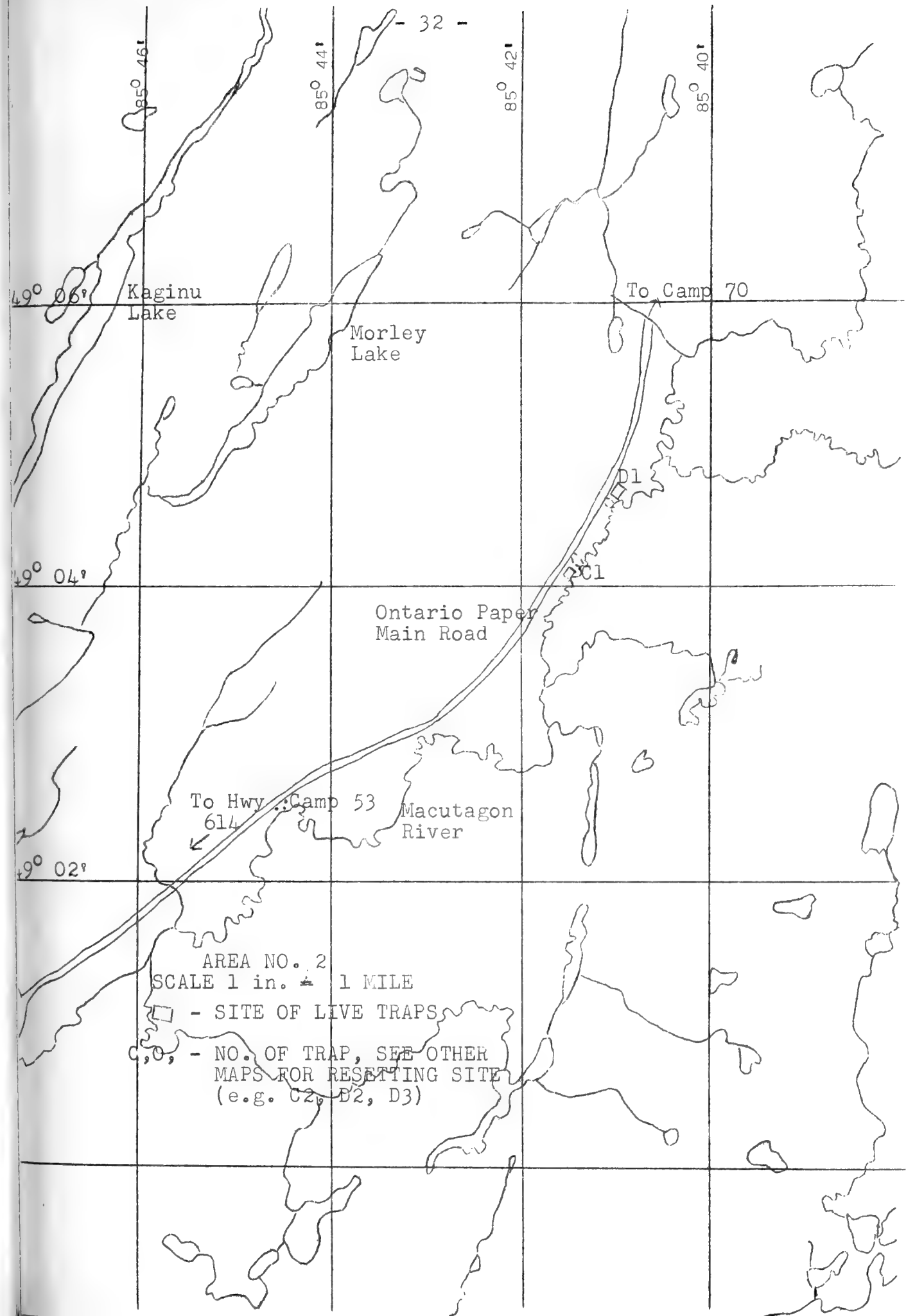


LYNX LIVE TRAP



AREA NO. 1
SCALE 1 in. = 1 mi.

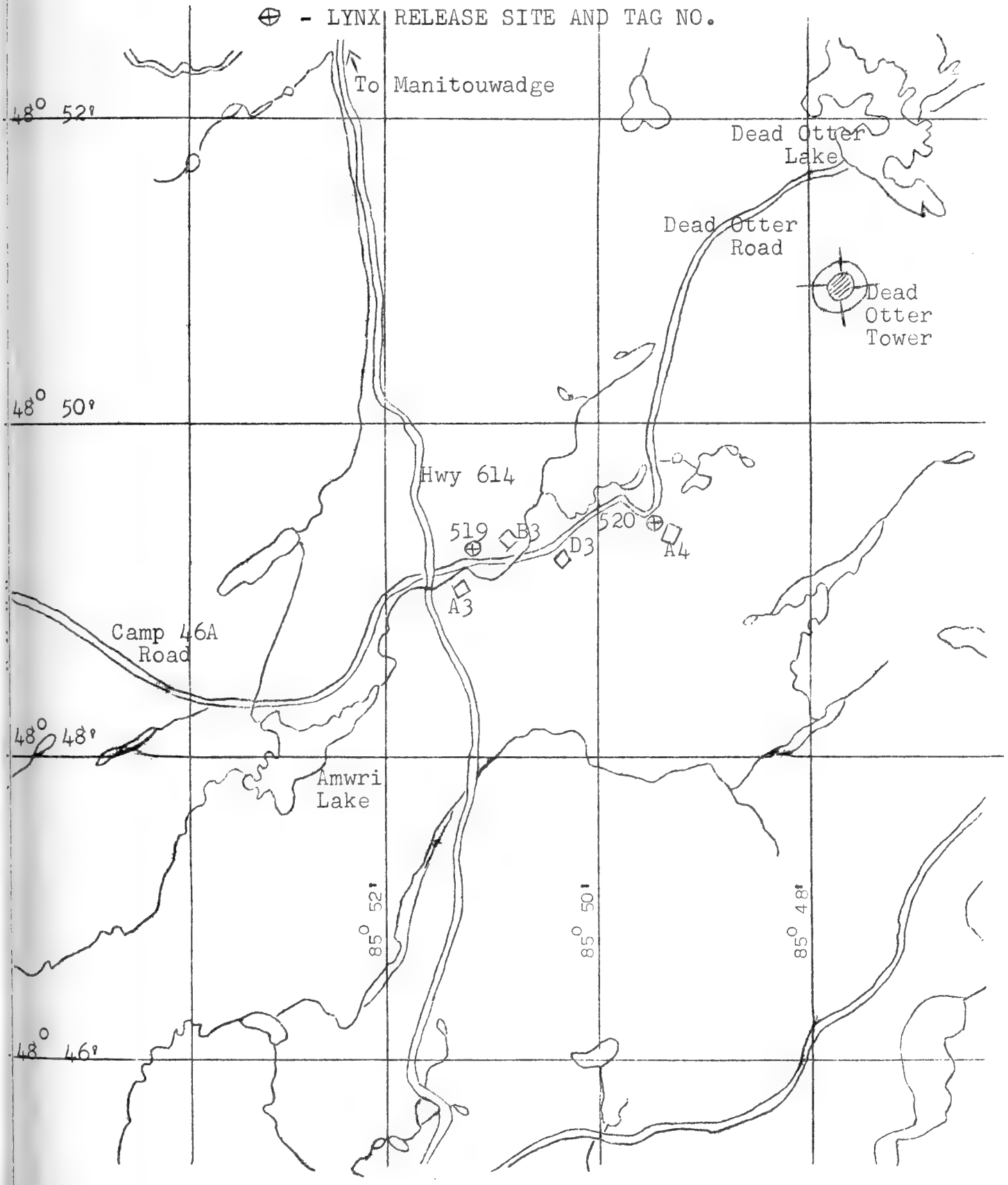
▭ - SITES OF LIVE TRAPS
A,B,C,D, - SHOWING MOVEMENT AND RESETTING OF EACH TRAP (e.g. A1, A2, A3,)
⊗ - LYNX RELEASE SITE AND TAG NO.


85° 46'
85° 44'
85° 42'
85° 40'
49° 06'
49° 04'
49° 02'
Kaginu Lake
Morley Lake
To Camp 70
D1
C1
Ontario Paper Main Road
To Hwy 614
Camp 53
Macutagon River
AREA NO. 2
SCALE 1 in. = 1 MILE
- SITE OF LIVE TRAPS
C,D, - NO. OF TRAP, SEE OTHER MAPS FOR RESETTING SITE (e.g. C2, D2, D3)

AREA NO.3
Scale 1 in. = 1 mile

▭ - SITES OF LIVE TRAPS
A,B,C,D, - SHOWING MOVEMENT AND RESETTING OF EACH TRAP. (e.g. A1, A2, A3)

⊕ - LYNX RELEASE SITE AND TAG NO.



WOOD DUCK BANDING, PEMBROKE DISTRICT, 1961

by
W. R. Catton
Assistant Senior Conservation Officer

Abstract

A wood duck banding program was carried out during the summer of 1961. Information is given on the selection of trapping areas, prebaiting and the construction of bait platforms and traps. Raccoons presented a serious predation problem. At one stage of the operations of 30 birds captured 14 were lost to raccoons. Twelve raccoons were destroyed at the trapping sites. A total of 52 wood ducks and one green-winged teal were banded and released during an 18 day period from August 12 to 31. Seven birds were recovered within 50 miles of the trapping site but one recovery was made in south-central New York State, approximately 300 miles from Pembroke.

At the request of Head Office a program was undertaken in 1961 to attempt the marking of as many wood ducks as possible. The project was carried out in an effort to make a Provincial contribution to a continental wood duck banding program. The main purpose of the project was to study, on a continental basis and in conjunction with numerous Atlantic and Mississippi States:

(a) the effects of additional regulations on species,
(b) to obtain information on local production and harvest,
(c) to record information on wintering grounds.

Preparation

Trapping Areas

Prior to actual trapping, a number of important steps have to be carried out.

Although other species of waterfowl can be readily trapped in quantity on sloughs and mustering grounds this has not as yet proven to be the case with wood ducks. Nesting and other generally secretive habits of the species dictates that trapping for juvenile and immature wood ducks be carried out on brood production ponds. These include not so much marshy sites as isolated, flooded wooded areas such as beaver ponds; sites containing older and decayed trees (or those for which artificial nesting sites have been provided and are utilized.) Due to this trapping of almost inacessible ponds it has been our observation to date that a great deal of effort is involved in capturing comparatively few wood ducks.

Prebaiting

Once likely trapping ponds are located, they are baited with cracked or kernel corn; we prefer whole kernels. Trapping areas more often than not, contain highly acid brackish water. Such a condition restricts the depth at which the bait may be seen by ducks and whole kernels were thought to be best for the situation.

In trapping marsh ducks, competition from natural food did not present any problem until late August when wild rice kernels and other food forms were available. However, in the case of young wood ducks, competition on stagnant ponds begins earlier as duck weed is normally abundant and heavily utilized by ducklings. In areas where this floating weed is present it was observed that chances of getting birds to take bait were considerably lessened.

Rafts

Rafts were constructed of 1½ inch lumber framing covered with chicken wire over which burlap was placed. Constructed in varying sizes they must be restricted to a size permitting easy handling and transportation.

Purpose of the rafts was to provide a platform over which bait could be spread. In an effort to entice birds off local natural food, platforms were placed at depths varying from completely afloat to six inches beneath the surface. On trapping sites for which a poor bottom is present, bait was displayed on burlap, hog-ringed to a section of chicken wire and pegged down to form a suitable bottom.

Trap Construction

Traps were constructed beforehand and several kinds were tried; we favoured a collapsible trap made of #16 and #14 ga., 1 inch by 1 inch welded wire, the lighter recommended. Traps were put together using hog rings, an average trap measuring 3x6, 5x6, 6x5 feet, base, walls and ends. Tops were made of cotton netting, however, if there is danger from predation stronger material is recommended.

Entrances (one to a 3x6 trap) with an opening of 3 to 4 inches in width are recommended. It is suggested the final few inches of a funnel be left flexible enough to permit ducks to squeeze through the opening. Mr. Frank Bellrose who has done considerable wood duck banding in the United States suggests a funnel opening of 3-4 inches and a height of 5 inches. It is his belief that the smaller the trap the more apparent the entrance is to the duck.

A less cumbersome and somewhat smaller portable trap is thought to be easier to work with especially when attempting captures on almost inaccessible ponds.

A small "barrel shape" trap constructed of a page wire foundation with chicken wire wrapped over it was employed and found satisfactory on one site. This trap (previously a poacher's fish trap) might best be employed where it is hard to locate larger traps along deep water such as on a river bank. Predation is the main drawback to this type of trap, although this problem was found to be serious wherever raccoons made their presence known regardless of trap types employed.

Predation

Previous experience at capturing black ducks in northern Ontario held little similarity when compared to capturing wood ducks in raccoon country!

Predation was so serious at one stage that we were ready to cease our operations having captured thirty odd birds while losing fourteen to raccoons. At this point we had developed little love but a lot of respect for the species!

Every precaution should be taken to minimize predation. The "U.S. Guide to Waterfowl Banding" offers some suggestions. We recommend:

- covering pans of steel traps with aluminum foil.
- use of corn cobs in attempting to decoy raccoons away from trap proper.
- use of Conibear traps (to be tried this year).

On one occasion a floating trap was set out some 50 feet from shore where a good concentration of birds existed. Raccoons continued to prey despite all precautions swimming to the trap and killing all the captured birds. In areas where predation is serious it is even suggested banding be discontinued if the problem cannot be surmounted. When a sure catch is immenent it is suggested twice daily visits be made to trap sites and that the trap be kept under constant surveillance. At such a site during an evening visit we observed one raccoon inside the live trap and four others walking the outside perimeter. Some ten feet from the funnel entrance the brood of wood ducks fed seemingly unconcerned. Before this trap was removed three raccoons were destroyed but not before they had killed two ducks.

Despite fine 1x1 inch mesh, raccoons seem to be quite adept at killing ducks from outside the trap.

A total of twelve raccoons were destroyed at trapping sites. It has occurred to us that Conibear traps would be more successful than conventional jump traps.

Trapping results

A total of 52 wood ducks and 1 green-winged teal were banded and released during a period covering 18 days trapping from August 12th to 31st. An additional 14 birds were killed by

predators, 1 drowned in a raccoon trap and 2 others released in poor condition following raccoon attack.

Daily Record of Catch

Date	New Birds	Repeats	No. Live Traps	Predator Losses	Remarks
Aug. 12	0	0	2	0	
13	1	0	2	0	Funnel too obvious, ducks got in and out.
14	0	0	2	0	Checked twice. A live decoy left overnight.
15	1	0	2	1	Checked twice. Decoy dead. 1 new bird in trap.
16	5	0	3	0	Checked twice. A.M. results only. Adult + 4 young
17	4	0	3	0	Flying ducks noted on corn. New trap set.
18	0	0	3	0	New trap set.
19	3	0	4	0	Killed 3 coons. Water too high in Ottawa R.
20	0	0	4	0	Killed 1 coon. Water too deep, took muskrat, snapping turtle and bullhead.
21	11	2	4	0	New trap set. 1 mud turtle. Chicken wire trap set.
22	1	1	3	5	River low trap exposed. Chicken wire trap demolished loss 5 ducks. Still 10 w. ducks on site, 1 coon.
23	3	0	3	0	2 coons. Barrel type set on deep water shore.
24	3	0	4	0	Barrel type successful.
25	1	1	4	0	1 coon at barrel trap, removed. Deep water floating raft trap set.
26	3	0	3	8	Remains of 8 ducks at raft trap, removed. New birds taken at another site.
27	4	1	2	0	1 new bird was green-winged teal.
28	8	4	2	0	5 were adults, (4 males) 1 coon.
29	0	2	2	0	
30	4	3	2	0	
31	1	0	2	0	Water lowered; traps high & dry so dismantled.
Totals	53	14		14	

Sex, Age Composition

Species	Imm. Males	Imm. Females	Adult Males	Adult Females
Wood Duck	15	23	11	3
Green-winged Teal				1

Band Recoveries

Recoveries reported through U.S. central banding agency - 8

Recovery

Under 5 miles from site of banding	- 0
5-25 miles from site of banding	- 4
25-50 miles from site of banding	- 3
50 plus miles from site of banding	- 1*
	8

* This recovery made in south-central New York State approximately 300 miles from banding site.

Summary

Insufficient information was obtained to form a comparison of attempts to trap flightless breeding pond birds and feeding ground flyers. Limited experience does, however, lead us to believe the species may be taken on mustering grounds particularly if there are some flightless birds in trapping area also.

Correspondence with an experienced wood duck bander in United States suggests best trapping sites are those where wood ducks feed and not so much where they roost.

Due to the dense raccoon population predation is a constant threat and every precaution should be taken to guard against possible attacks.

Trapping procedure followed was mainly that of locating likely trapping sites, prebaiting, trap construction and actual trapping.

Traps were set in stages allowing birds frequenting the site to get used to the trap for 2-4 days depending on bait acceptance.

Wood ducks are most unpredictable. An area in which birds are practically eating out of the bander's hand will sometimes fail to produce while a less likely site will turn out to be a major contributor.

Trapping terrain such as found in eastern Ontario requires a good deal of travel in tending traps; for this reason if traps can be successfully operated on mustering grounds it would cut down on the effort and could be more productive than trapping brood ponds.

When deemed necessary and certainly when predation or over-crowding is a consideration traps should be tended twice daily. Experience to date does not, however, indicate any significant increase in catch as a result of tending traps twice daily.

Band recoveries although admittedly of little significance indicate most of the recoveries are taken within Ontario.

Sex ratios show adult females are taken but are less apt to be captured than adult males.

Acknowledgments

- A sincere note of thanks to District Biologist, J. F. Gardner without whose encouragement the project might have folded early when predation seemed an insurmountable problem and also for his assistance in actual trapping.

- Frank Bellrose, U. S. Game Specialist; for his helpful remarks on trapping techniques.

DUCK BANDING - GOGAMA DISTRICT, 1961

by
Bruce Turner
Assistant Senior Conservation Officer

Abstract

Duck banding at Halliday Lake was carried out for the sixth consecutive year. A marked decrease in duck numbers over the past several years was noticed this year; 112 ducks banded compared with 163 in 1960 and 198 in 1959. Daily records of waterfowl trapped along with a comparison of daily records of ducks banded from 1956 to 1961 are presented, as well as a breakdown of the cost of the operation.

The duck banding project at Halliday Lake, commenced on August 9th and was completed on September 14th, for the sixth consecutive year. Conservation Officers supervised the project with the assistance of Raymond McKay, Treaty Indian from the Mattagami Reserve.

On August 9th the grass was cut at all the banding sites, traps pulled out into view, and the sites were baited with cracked corn. Water levels were approximately 18 inches higher than the previous year. The second visit was made to Halliday Lake on August 14th, the traps were partially erected, and the sites were re-baited. At Dog and Baker traps there was no acceptance to the bait. It was thought that the water was too deep for black ducks to feed on at both these traps.

Because of the soft bottom and deep water, Dog trap was moved one mile upstream to a new location. At Baker trap, a platform was built out of poles covered with burlap and camouflaged with mud. Cracked corn was then scattered over the platform for bait.

August 21st, camp was set up at Halliday Lake, and the erection of the traps began, all sites were re-baited. On August 23rd all the traps were completed and in operation.

The following table gives a comparison of duration and success of the project since 1956:-

Year	Banding Commenced	Banding Ceased	Total Days	Total Banded
1956	August 23rd	September 15th	24	462
1957	August 16th	September 6th	22	206
1958	August 19th	September 11th	24	285
1959	August 18th	September 13th	27	198
1960	August 19th	September 14th	26	163
1961	August 22nd	September 14th	24	112

(108 Black Ducks, 4 Mallard Ducks)

As the above table shows a decidedly decrease in ducks

banded this year, we are at a loss to know what factors contributed to this decrease. Ducks are scarce and do not inhabit the area in as great numbers as in the previous years.

Four ducks were killed by predators while the banding stations were in operation, one mink was caught, banded and released in Noble Township, approximately 20 air miles from place of capture. A pair of Bald Eagles was seen on several occasions in the vicinity of the banding sites.

Fifteen ducks that were banded in previous years were recaptured this year, while only three were recaptured in 1960.

Baiting of the sites ceased on September 13th, with the last ducks being banded on September 15th. The traps were dismantled and stored away for future use.

All the unused bait was tramped into the mud, as in previous years when the baiting ceased and the ducks did not return to the baited areas.

An enforcement patrol was carried out for the next three days, sixteen duck hunters were checked and all made the comment that they had seen few ducks, and those shot carried no bands.

Although the water level was consistantly high all season, there was an above average crop of wild rice. This was the first season in the last three that the largest percent of the crop was not lost to the ducks because of high winds shelling the rice off the stocks before it could be utilized by the ducks.

Recommendations

When water levels are high, platforms should be built as described on the first page of this paper, to improve the trapping success.

If duck banding is to be carried out at Halliday Lake, some thought should be given to possibilities of the whole project being done by Treaty Indians under the supervision of the Department of Lands and Forests. This year one Indian was trained in all phases of the work and we feel confident that Raymond McKay is capable of handling the duck banding program with the help of another Treaty Indian. We also think that arrangements can be made with the Department of Indian Affairs, to hire two Indians for the duck banding project. They could take their families to Halliday Lake and along with the banding program, they could harvest wild rice, thus utilizing a large crop now going to waste. This would increase the income for two Indian families at a time of the year when there is little work for them.

Daily Record of Ducks Trapped 1961

Date	New Ducks	Repeats	Total per Day
August 23rd	4		4
24th	9 (1 dead)	1	10
25th	9	1	10
26th	3	1	4
27th	6	4	10
28th	9 (2 dead)	2	11
29th	3	2	5
30th	2		2
31st	4	11	15
September 1st	4	6	10
2nd	2	1	3
3rd		4	4
4th	5 (1 dead)	4	9
5th	1	6	7
6th	5	2	7
7th	3	1	4
8th	11	3	14
9th	3	3	6
10th	2	4	6
11th	7	9	16
12th	2	1	3
13th	15	5	20
14th	3	1	4
TOTALS	112	72	180

Total by Species: 4 Mallards

108 Black Ducks

Comparison of Daily Record of Ducks Banded 1956 - 1961

August and September dates

	August 16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1956								8	22	39	40	20	13	20	16	13
1957	10	18	14	14	10	7	23	12	9	8	11	12	11	9	4	4
1958				6	11	13	3	9	12	2		15	12	17	15	11
1959							2	0	9	1	24	13	13	32	5	11
1960				4	0	2	17	1	1	4	2	2	8	5	2	3
1961				0	0	0	0	4	8	9	3	6	7	3	2	4

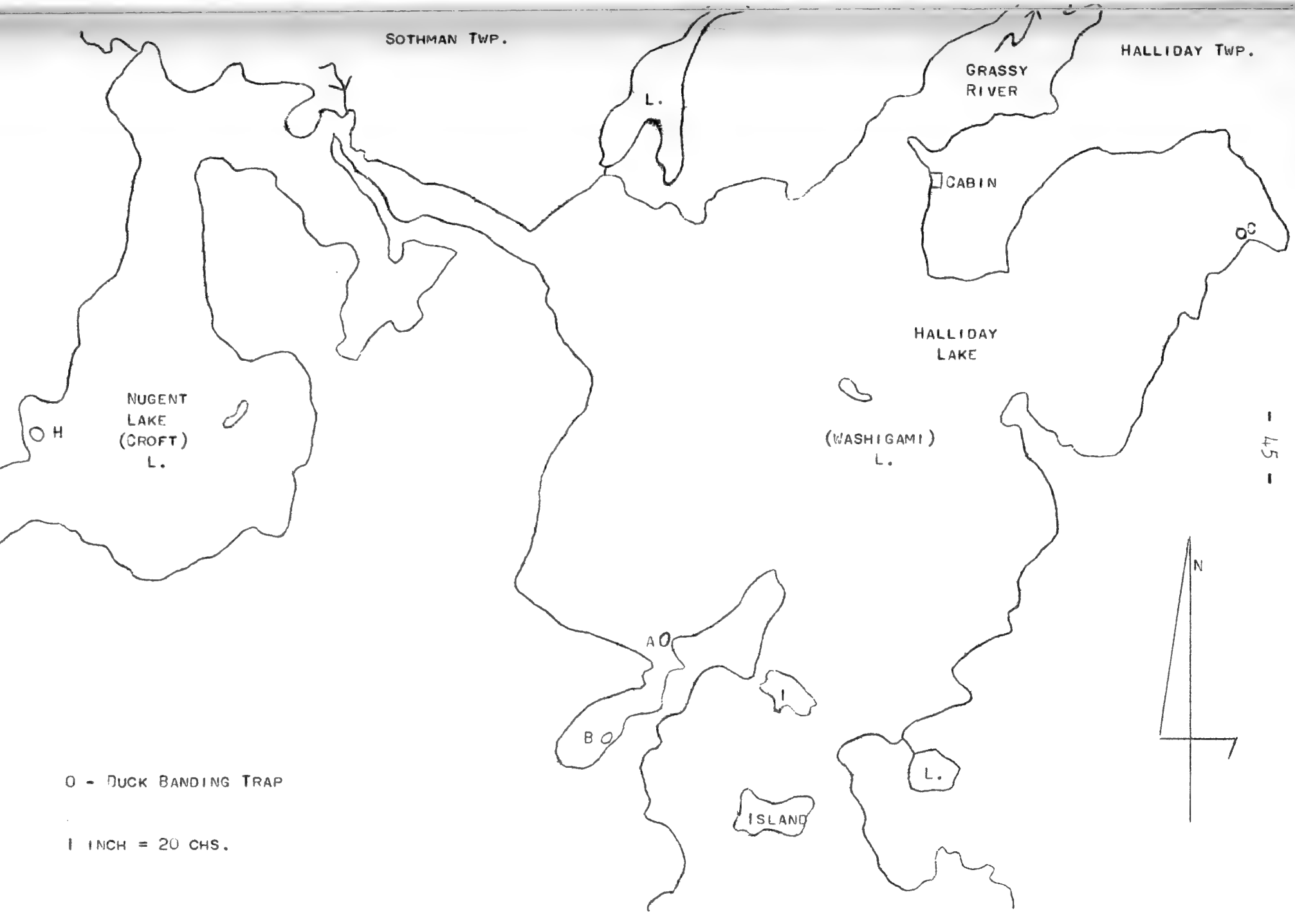
	September 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1956	16	6	10	24	21	21	30	15	31	28	14	13	17	10	13	
1957	3	4	1	1	4	10										
1958	7	29	23	9	24	11	8	20	9	6	2					
1959	13	8	9	12	3	7	3	2	6	8	2	6	9			
1960	3	12	0	12	3	13	11	14	10	2	12	3	13	4		
1961	4	2	0	4	1	5	3	11	3	2	7	2	15	3		

Cost of the 1961 Duck Banding Project, exclusive of Conservation Officer's wages and transportation are as follows:-

Grain for bait ----------	$ 63.00*
Provisions ----------	116.12
Wages (Raymond McKay) ----------	202.40
Gas for outboards, lights and cooking ------	30.00
Outboard motor oil ----------	3.83
Other Supplies (wire and rope) ----------	9.61
TOTAL -	$ 424.96

* Because of the few ducks feeding on the corn, we used 3/4 of a ton of corn in 1961, whereas in previous years one ton was used.

Special Appropriation from Head Office -	Salaries -	$ 202.00
	Maintenance -	260.00
		$ 462.00
	Total Cost -	424.96
		$ 38.04


SOTHMAN TWP.
HALLIDAY TWP.
GRASSY RIVER
L.
CABIN
C
HALLIDAY LAKE
(WASHIGAMI) L.
NUGENT LAKE (CROFT) L.
H
A
B
I
L.
ISLAND
N
O - DUCK BANDING TRAP
1 INCH = 20 CHS.

FRENCH RIVER ANGLING, 1961

by
J. M. Sheppard
Conservation Officer
Sudbury District

Abstract

Despite the increased fishing pressure that developed with the completion of Highway 69 in 1952, fishing in the French River area has remained one of the best in Sudbury District. A creel census conducted over a 12 week period from July 17 to Oct. 2, 1961, revealed that 4,957 fish of five species were caught in the Main French River between Parisien Rapids and Flat Rapids by 864 anglers. The average catch was 5.7 fish per angler with the average fishing success about 1.25 fish per rod-hour. 4,032 hours of angling were logged by the interviewed fishermen for an average of 4.7 hours per sportsman. The average fishing success for yellow pickerel was .57 fish per rod-hour while that for smallmouth bass was .46 bass per rod-hour. It is the writer's opinion that fish taken in the Main French River are not from the same population taken by sportsmen and commercial fishermen in Georgian Bay.

The French River has over the past years earned itself a reputation as Sudbury's leading, and one of Ontario's finest, sport fishing areas. With the completion of Highway 69 in 1952 many of the visiting anglers and some of the local sportsmen were ready to write the area off as a continued source of angling pleasure. Many changes have taken place since 1952 -- more cottages have appeared, more tourist camps have been built and more tourists have visited the area, but the fishing has remained as one of Sudbury's best.

When physical changes take place about a semi-wilderness area and access is improved the innate response of ardent sportsmen is to condemn the advancements of civilization and look for more distant fields. It was hoped that the data gathered and the resultant report might graphically show to those who, in the past have fished in the French River waters, that while the angling success may not be equal to that of the days of its early angling history it still provides some of the best fishing in accessible Ontario.

Methods Used

There are many methods available for the censusing of the sportsman's creel -- some result in an extensive coverage of the fishery, others produce intensive information. At the suggestion of the District's Fish and Wildlife Supervisor the French River creel census was designed to provide maximum information from a limited

portion of the river's total area. Mr. C. Shortts of Lift-the-Latch Lodge was approached to seek the assistance of his guides in providing the data for this report. Spot checks were made throughout the census period by the author and the guides were interviewed as frequently as possible. In addition to giving maximum coverage of that portion of the Main French between Parisien Rapids and Flat Rapids (Map 1) several neighbouring lakes were sampled throughout the season. Two of the latter appear in this report for comparative purposes. Form 1 was designed and used throughout the census period.

The census period reported on this paper covers twelve weeks of the angling season: July 17 to October 2. The data, while recorded daily, have been tabulated on a weekly basis the week beginning on the same date as that of the McGregor Bay Creel Census (Silva and Gillespie, 1960) and the Mindemoya Creel Census (Zimmerman, 1961) for comparative purposes.

Survey Results

864 anglers were interviewed during 52 angling days and they reported a catch of 4,957 fish of five species, viz: yellow pickerel (*Stizostedion vitreum*); smallmouth bass (*Micropterus dolomieui*); yellow perch (*Perca flavescens*); northern pike (*Esox lucius*) and maskinonge (*Esox masquinongy*). A total of 4,032 hours of fishing effort or an average of 4.7 hours per angler was exerted to produce an average catch of 5.7 fish per angler. The seasonal fishing success was slightly less than one and one quarter fish per rod-hour.

The average angling success for the yellow pickerel during the twelve week period was .57 fish per rod-hour varying between a low of .29 fish per rod-hour and high of 1.32 fish per rod-hour. Smallmouth bass showed an average success rate of .46 fish per rod-hour with a range of .20 to .58 fish per rod-hour. Table 1 provides the data grouped on a weekly basis with monthly totals. Table 2 provides the weekly and monthly fishing effort, fishing success and angling census days.

Dalton and Cat lakes are also reported on in this paper. Both are primarily smallmouth bass lakes approximately 60 acres and 330 acres, respectively. Both produced an angling success during the census period of 1.72 fish per rod-hour, although in terms of smallmouth bass Dalton Lake exceeded Cat with a smallmouth bass success of 1.64 fish per rod-hour to .90 fish per rod-hour. Table 3 provides the creel data of both lakes.

Considering the catch per unit effort for yellow pickerel the monthly figures suggest a decrease in the availability of this species to the fisherman in August from the month of July, followed by an increase in September and October. This trend closely parallels the findings of Zimmerman (op. cit.) in his work on Lake Mindemoya.

The catch per unit effort of smallmouth bass in this portion of the Main French River does not completely coincide with the trend observed in McGregor Bay (personnel communication, Gillespie); but does follow fairly closely the seasonal increase noted at South Baymouth (personnel communication, Budd).

Table 4 provides the temporal distribution of the catch-effort for these two species taken in the Main French River during 1961.

Maskinonge fishing in this portion of the river was not particularly significant in 1961. The 13 reported in this paper represents about 50 per cent of the harvest of maskinonge in an average year in this portion of the river.

Throughout the season there was a significant change in the size of the fish caught, particularly in the yellow pickerel portion of the creel. During most of the early stages of the creel census the yellow pickerel ranged between 3/4 and 4 pounds, with 1½ pound fish being the most commonly taken size. Late in the season, particularly in the latter part of September and early October pickerel weighing 4 to 12 pounds were regularly landed. Smallmouth bass averaged 1-3/4 pounds throughout the season; perch ran about ½ pound or 8" and pike were taken between ½ and 4 pounds. The maskinonge of this portion of the river run up to 38 pounds, but the thirteen reported in this paper averaged 11 pounds.

Discussion and Conclusions

The creel census carried out in that portion of the Main French River between Parisien Rapids and Flat Rapids during the 1961 season may be somewhat biased insofar as most of the anglers contributing to the creel data were guided by some of the area's most experienced guides. It is the author's opinion that these men through their daily pursuit of the fish have significantly increased their knowledge on the movements and location of the fish and subsequently are able to assure the average angler of better success than might normally be expected.

Since 1960 this District has carried out several creel censuses on lakes (most of them large bodies of water) in the effort to determine the quality of fishing produced by these waters. It has been difficult to set a standard of quality (or quantity) that should be acceptable to our visiting and resident anglers as so many factors have to be considered. First and foremost is the difference in angler wants. For example, anglers interviewed on McGregor Bay are omnivorous in their piscine diet -- anything from northern pike to rock bass is acceptable. Sportsmen fishing George Lake on the other hand are specific -- they're seeking lake trout. Here at the French pickerel and smallmouth bass are king, with maskinonge a very desirable but evasive creel species.

As a comparison to the pickerel fishing of the French, Zimmerman's (op. cit.) data from Lake Mindemoya have been used. The seasonal availability of pickerel on Lake Mindemoya was .38 pickerel per rod-hour compared to .57 pickerel per rod-hour for the French River area. For comparable periods Table 5 has been constructed to show the temporal changes in angling success in the two waters. Differences in the hydrographic qualities of these two waters undoubtedly account for some of the differences shown in Table 5, but in the author's opinion the major difference is in the type of angler using the two waters and the assistance they receive from the guides.

It is interesting to follow what seems to be shifts in the pickerel habitat as the season progresses. The hypothesis that this species moves along the river is based on the habits of the experienced guides in seeking certain waters at certain times of the year. Map 1 while showing the location of the creel census area also provides, along with the legend, a chronological picture of what has been assumed to be the movements of the pickerel.

Dalton and Cat lakes provided us with some very interesting information on the angling success of small lakes that are typical for the area. Both showed a fishing success of almost one and three quarter fish per rod-hour, which is good fishing by most standards. Dalton was particularly productive of smallmouth bass with a seasonal success of 1.64 smallmouth bass per rod-hour. Both lakes produced more fish per angler than did the French.

Over the past few years with the increase in sport angling there has been a growing suspicion among anglers that commercial fishermen operating in Georgian Bay at the mouth of the French are competing directly with the sportsmen for pickerel. If this hypothesis is true for the Main French then the pickerel must travel past what the author considers are impassible barriers. Map 1 shows these barriers, Recollet Falls to the west provides the most imposing restriction on the movement of fish with a vertical drop of more than seven feet.

Summary

1. 4,957 fish of five species (yellow pickerel, smallmouth bass, yellow perch, northern pike and maskinonge) were caught in the Main French River between Parisien Rapids and Flat Rapids by 864 anglers during the 52 day census period.

2. 4,032 hours of angling were logged by the interviewed fishermen for an average of 4.7 hours per sportsman.

3. The average catch was 5.7 fish per angler and the average fishing success was about 1.25 fish per rod-hour.

4. The average fishing success for pickerel was .57 pickerel per rod-hour, while the average for smallmouth bass was .46 bass per rod-hour - both high by this District's standards.

5. Dalton and Cat lakes both provided excellent fishing success with a reported 1.72 fish per rod-hour.

6. The bass fishing success of Dalton Lake was three and one half times that of the Main French River.

7. The seasonal changes in the catch per unit effort statistics for pickerel paralleled the changes in the Mindemoya success.

8. Seasonal changes in the bass catch per unit effort resembles the changes experienced in South Baymouth, but deviates slightly from that noted in McGregor Bay.

9. Maskinonge fishing for this portion of the French was about 50 per cent of the normal.

10. The data presented in this report may be higher than would normally be expected inasmuch as the anglers interviewed were guided by some of the best guides in the area.

11. It is the author's opinion that the fish taken in the Main French are not from the same population taken by sportsmen and commercial fishermen in Georgian Bay.

Acknowledgment

The author would like to express his gratitude to Mr. Cam Shortts and the merry men of Lift-the-Latch Lodge who contributed considerably to the collection of the data for this paper.

References

Silva, H. R. and D. I. Gillespie, 1960. The warm water sports fishery of McGregor Bay. Resource Management Report No. 60, pp. 38-60.

Zimmerman, F. A., 1961. Some observations on the quality of angling in Lake Mindemoya, Manitoulin Island, 1961. District Report (unpublished).

TABLE 1 - WEEKLY AND MONTHLY SUMMATION OF FRENCH RIVER CATCH DATA BY SPECIES

Period of	Yellow Pickerel	S.M. Bass	Yellow Perch	Northern Pike	Maskinonge	Total Fish
July 17	40	70	13	13		136
24	40	24	8	8	1	81
31	120	45	33	28	2	228
July Total	(200)	(139)	(54)	(49)	(3)	(445)
Aug. 7	153	246	110	99	-	608
14	168	221	13	103	-	505
21	238	195	11	98	2	544
28	-	-	-	-	-	-
Aug. Total	(559)	(662)	(134)	(300)	(2)	(1,657)
Sept. 4	95	72	18	32	2	219
11	229	164	2	24	-	419
18	434	425	16	124	2	1,001
25	263	147	6	18	4	438
Sept. Total	(1,021)	(808)	(42)	(198)	(8)	(2,077)
Oct. 2	(538)	(231)	-	(9)	-	(778)
SEASON TOTAL	(2,318)	(1,840)	(230)	(556)	(13)	(4,957)

TABLE 2 - FISHING EFFORT AND SUCCESS AND ANGLING CENSUS DAYS

Period of	Anglers	Hours	Fish/ Rod-Hour	Fish/ Angler	Fishing Effort (hours)	Fishing Days
July 17	29	140	.97	4.69	4.83	2
24	11	50	1.62	7.36	4.55	1
31	71	229	1.00	3.21	3.23	2
July Totals	(111)	(419)	(1.06)	(4.01)	(3.77)	(5)
Aug. 7	98	476	1.28	6.20	4.86	7
14	103	509	.99	4.90	4.94	7
21	95	481	1.13	5.73	5.06	7
28	-	-	-	-	-	-
Aug. Totals	(296)	(1,466)	(1.13)	(5.60)	(4.95)	(21)
Sept. 4	32	193	1.13	6.84	6.03	3
11	87	407	1.03	4.82	4.69	7
18	124	733	1.37	8.07	5.91	6
25	71	406	1.08	6.17	5.72	4
Sept. Totals	(314)	(1,739)	(1.19)	(6.61)	(5.54)	(20)
Oct. 2	(143)	(408)	(1.91)	(5.44)	(2.85)	(6)
SEASON TOTALS	(864)	(4,032)	(1.23)	(5.74)	(4.67)	(52)

TABLE 3 - CREEL DATA - DALTON AND CAT LAKES

Lake Name	S.M. Bass	Yellow Perch	Northern Pike	Maskin-onge	Total Fish
Dalton	128	6			134
Cat	85	2	73	2	162

Lake Name	Anglers	Hours	Fish/ Rod-Hour	Fish/ Angler	Fish-ing Effort	Fishing Days
Dalton	16	78	1.72	8.38	4.88	5
Cat	22	94	1.72	7.26	4.27	13

TABLE 4 - CATCH PER UNIT EFFORT
DATA MAIN FRENCH RIVER, 1961

Period of	Yellow Pickerel	Smallmouth Bass
July 17	.29	.50
24	.80	.48
31	.52	.20
July Total:	(.48)	(.33)
Aug. 7	.32	.52
14	.33	.43
21	.49	.41
28	-	-
Aug. Total:	(.38)	(.45)
Sept. 4	.49	.37
11	.56	.40
18	.59	.58
25	.65	.36
Sept. Total:	(.59)	(.46)
Oct. 2	(1.32)	(.57)
SEASON TOTAL:	(.57)	(.46)

TABLE 5 - COMPARATIVE TEMPORAL DISTRIBUTION OF
CATCH PER UNIT EFFORT, LAKE MINDEMOYA
- FRENCH RIVER PICKEREL, 1961

Period of	Lake Mindemoya	French River
July 17	.37	.29
24	.39	.80
31	.36	.52
Aug. 7	.26	.32
14	.29	.33
21	.36	.49
28	.31	-
Sept. 4	.22	.49
11	.11	.56
18	.22	.59
25	.20	.65
Oct. 2	.32	1.32
SEASON TOTAL:	(.38)	(.57)

THE ONTARIO DEPARTMENT OF LANDS AND FORESTS

FRENCH RIVER - DAILY CREEL CENSUS

LODGE OR INDIVIDUAL		NO. OF FISH REPORTED														EFFORT		
DATE:		RESIDENT PICKEREL	NON-RESIDENT PICKEREL	RESIDENT S. M. BASS	NON-RESIDENT S. M. BASS	RESIDENT PERCH	NON-RESIDENT PERCH	RESIDENT PIKE	NON-RESIDENT PIKE	RESIDENT MUSKELUNGE	NON-RESIDENT MUSKELUNGE	RESIDENT OTHER SPEC.	NON-RESIDENT OTHER SPECIES	NO. OF HOURS	NO. ANGLERS	REMARKS OR SIZE
	GUIDE																	
	NO GUIDE																	
	GUIDE																	
	NO GUIDE																	
	GUIDE																	
	NO GUIDE																	
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MAP 1

LEGEND

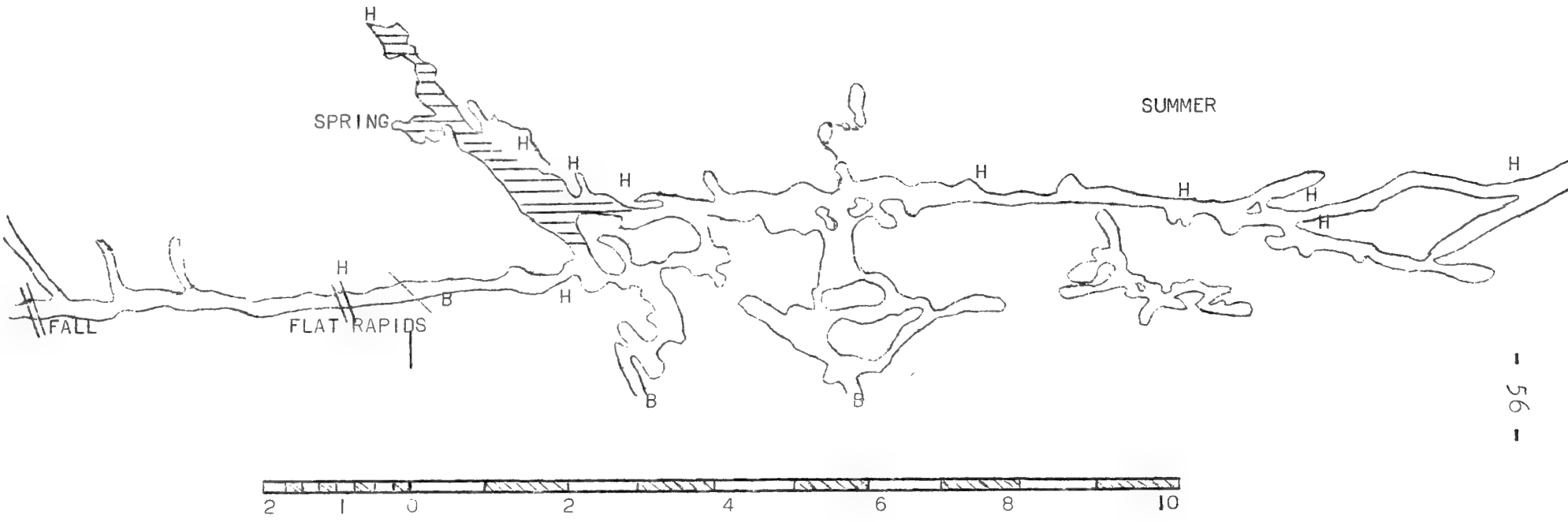
H - HIGH ANGLING PRESSURE

= - LOW ANGLING PRESSURE

-- MODERATE ANGLING PRESSURE

B - NATURAL BARRIER

FRENCH RIVER, 1961



SCALE: 2 MILES = 1. INCH

TAXONOMY OF LAKE NIPISSING PIKE-PERCH

by
Wilson Sinclair
Conservation Officer
Parry Sound District

Abstract

Some doubt has arisen concerning the variety of pike-perch being taken by anglers from Lake Nipissing. This has posed a potential law enforcement problem. Work done in 1961 indicates that the majority of these pike-perch do not fit the Hubbs and Lagler description of blue or yellow pike-perch. While all the pike-perch have been treated as yellow pike-perch (Stizostedion vitreum vitreum) for the purposes of the Fishery Regulations, features such as body colouration and small average size suggest that some of them are blue pike-perch (S. vitreum glaucum). Harkness (1) stated in 1936 that the original population of the lake consisted of blue pike-perch, but introduced yellow pike-perch were supplanting the native variety. The possible continued presence of blues presented an enforcement problem in that the catch and possession limit on blues is 35 fish while the limit on yellow is six fish. The closed season in April and May in Lake Nipissing applies only to yellows. In an effort to answer the question regarding species this investigation was undertaken. It is recommended that the Fishery Regulations be changed to treat blue pike-perch the same as yellow pike-perch in Lake Nipissing.

The Investigation

During the summer of 1961 a total of 51 pike-perch taken by anglers in Lake Nipissing (including the French River above Chaudierre dam) were examined for identification features. The fish were measured for total length, and comparisons of inter-orbital width and orbital length were made. The body and fin colouring were noted. Lengths ranged from 11 inches to 20 inches, the average being 16.6 inches.

Inter-orbital Width and Orbital Length

Table 1 illustrates graphically the distribution of fish in this respect. The minimum ratio was 1.31 and the maximum was 2.0. The average for 51 fish was 1.56. According to Hubbs and Lagler (2) the bony inter-orbital width measures 1.1 to 1.4 in the length of the orbit in young and half-grown yellow pike-perch to about equal to the orbit in adults, while for blue pike-perch the ratio measures 1.4 to 2.0 times the length of the orbit. In the sample from Lake Nipissing only three fish showed inter-orbital width versus orbital length ratios under 1.4. On this basis alone, the majority of

the pike-perch examined during the study had this characteristic in agreement with the Hubbs and Lagler definition of blue pike-perch.

Body Colouring

Thirty-seven of the fifty-one fish were judged to have body colour characteristics most resembling that of yellow pike-perch, while the remainder had colour characteristics suggestive of the blue variety. There appeared to be a grading-in of colour, and it was difficult to decide in many cases. It is worth noting that one of the most "blue" specimens had a relatively low orbital ratio (1.43).

Lower Fin Colouring

According to Hubbs and Lagler (2) the lower fins of yellow pike-perch show yellowish colouring, while those of the blue are bluish. Only one specimen was judged to have bluish fins; the remainder being yellowish.

Discussion

Solely on the basis of orbital ratio, it would appear that this pike-perch population is mostly made up of blue pike-perch. The less reliable characteristic (involving opinion) of colouration, indicates a predominence of yellows. Perhaps hybridization has taken place.

Lake Nipissing pike-perch are known to spawn extensively on rocky beaches, as well as in streams. It would be advisable to carry this investigation further by comparing characteristics of fish spawning on beaches with those spawning in streams to see if distinct groups of pike-perch can be isolated at this point.

Information collected so far indicates that the regulations concerning the taking of pike-perch should be changed to take into account the possible presence of the blue pike-perch in Lake Nipissing. The angler at large is not yet aware of the fact that he might lawfully take 35 pike-perch in a day the year round from this lake. Reduction of the daily limit on the combined varieties of pike-perch in Lake Nipissing to six fish, and placing a closed season on blues in the spring, would not at this time meet with any resistance from anglers.

Conclusion

The pike-perch present in Lake Nipissing, are not in complete accord with the definitions for the subspecies vitreum and glaucum, as defined in standard reference work (Fishes of the Great Lakes Region, by Hubbs and Lagler).

Literature Cited

(1) Harkness, W. J. K., 1936.
Biological Study of Lake Nipissing,
Printed in "North Bay Nugget", February 21, 1936.

(2) Hubbs, Carl L., and Karl F. Lagler, 1949.
Fishes of the Great Lakes Region.

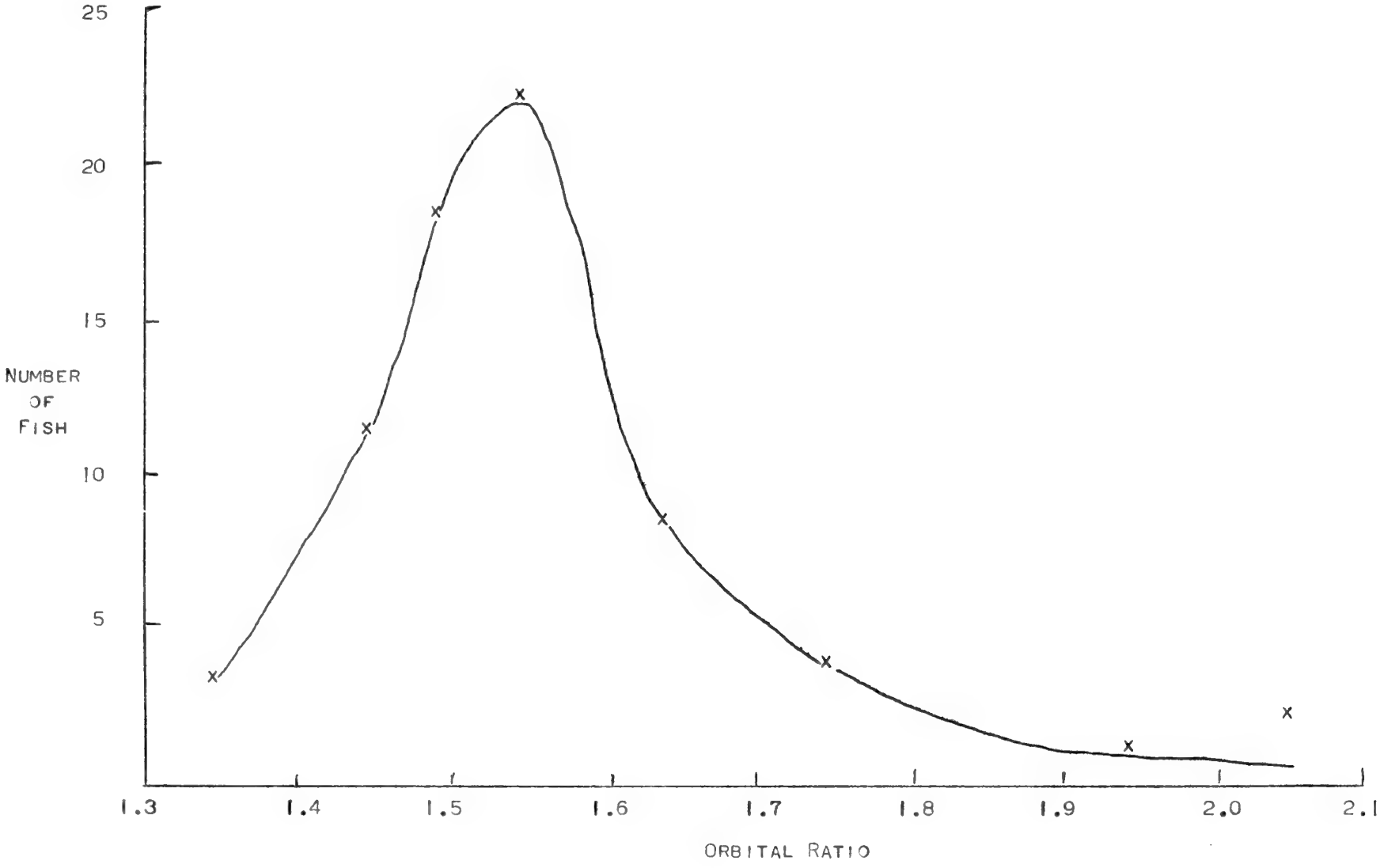
C. W. Douglas provided technical guidance in this investigation.

Footnote: In 1961, after Sinclair had completed the measurements of most of his series of pike-perch, a rough draft of his report was sent to main office together with recommendations concerning amendment to the sections of the Ontario Fishery Regulations concerning the catch limits of blue and yellow pickerel. From this emanated Section 18 (j) which now reads "six yellow pickerel, six blue pickerel or six of any combination thereof", and completely removes the difficulty heretofore presented by the difficulty in distinguishing the blue and yellow races of this species, a subject of perennial complaint in many areas through the Province.

(Carman W. Douglas, Sept. 7/62

TABLE I

ORBITAL MEASUREMENTS OF LAKE NIPISSING PIKE-PERCH



SOME OBSERVATIONS ON A WINTER CREEL CENSUS ON TWO LAKES IN THE KILLARNEY AREA, 1962

by
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Abstract

A creel census was carried out during the winter months on Mahzenazing and Killarney Lakes. A total of 187 anglers checked on Mahzenazing Lake had fished for 1,041 hours and taken 58 yellow perch, 98 northern pike and 11 yellow pickerel for a catch per unit effort of 16 fish per 100 rod-hours. Sixty-one fishermen checked on Killarney Lake had fished for 284 hours and taken 24 lake trout for a C.U.E. of 9 fish per 100 rod-hours. The average size of the lake trout was two pounds.

Introduction

With the opening of the Killarney Road (Highway #637) in the fall of 1961 several new lakes were made accessible to the average sportsman of Sudbury District. To measure the angling pressure and success of two lakes, that the writer thought might be opened by this new access route, a creel census was carried out for most of the winter months when travel conditions permitted.

The Lakes

Map 1 shows the location of the two lakes. Mahzenazing Lake is fed from Tyson Lake to the north by the west branch of the Mahzenazing River. The water level of this lake is controlled by a coffer dam, built in the spring of 1961, at the south end of the lake. This impoundment has raised the lake's level seven feet and it is the writer's opinion that the resultant angling success has decreased.

Mahzenazing Lake might be described as a typical entrophic lake with deep cold water being almost totally absent. Yellow perch, northern pike, pickerel, largemouth bass and smallmouth bass are the fish species known to be present.

Access to the lake was facilitated in the late fall and early winter by a gravel road being kept open by a construction firm until February 6th, 1962. After this date, travel was limited to the most ardent sportsmen, who were willing to snowshoe or ski at least a mile to the lake.

Killarney Lake is one of the District's most beautiful lakes with great towering hills surrounding most of its shores. Typically an oligotrophic lake, it is very deep with relatively few large aquatic plants present. It is known to maintain populations of lake trout, herring, ling, smallmouth bass and yellow perch.

Access to this lake is limited by a walk of almost three and one half miles over rugged terrain. The winter sportsmen on Killarney Lake are typically residents of the town of Killarney and occasionally visiting anglers from the city of Sudbury.

Census Methods

Mahzenazing Lake was selected as it was only 22 miles from the writer's headquarters and could be checked almost daily or whenever parked cars or tracks suggested the lake was being fished. Killarney Lake, because of its relative inaccessibility, was checked whenever tracks indicated the presence of sportsmen. This was chiefly on week-ends.

The anglers were generally interviewed in the late afternoon or as they left the lake at which time their creel data were recorded in a diary. This information was transferred to a creel form that will be used during the summer months to record the catches of anglers using Georgian Bay waters between Killarney and Collin's Inlet.

Survey Results

Mahzenazing Lake

187 anglers were checked on this lake in the period January 15th to March 24th, 1962. While fishing 1,041 hours these anglers caught 167 fish made up of 58 yellow perch, 98 northern pike and 11 yellow pickerel.

The data were compiled on a semi-monthly basis and appear in Table 1. 67 per cent of the anglers checked were interviewed in the first 19 days of the creel period. This was due to the closing of the gravel road and the deep snow impeding the access of the sportsmen.

The average season catch per unit effort was 16 fish per 100 rod-hours. Table 1 in addition to the catch data shows the seasonal changes in the C.U.E.

Information was recorded on the quality of the catch. The yellow perch caught were 4-6" in length; the northern pike ranged between one pound and eight pounds, with a two pound fish being the modal size. The yellow pickerel showed a range of one and one-half pound to six pounds with the modal size being three pounds.

The quality of the visiting fishermen on Mahzenazing Lake is interesting. Although the fish were the primary purpose for them visiting the lake, the opportunity to get out of the city must have been an important consideration. While access to the lake was good, many of the visiting groups consisted of families, ranging from the parents down to infants. Later on in the season, when deep snow blocked the road, the anglers were chiefly men, occasionally accompanied by their sons.

Local residents from the town of Killarney ignored this lake and preferred to do their fishing in more inaccessible lakes where they took lake trout. The increase in the sportsmen pressure has also been ignored by the residents, as there are very few camp operators among them and they assume that visitors will seldom visit the relatively inaccessible lakes they fish and complete with them.

Killarney Lake

Twenty-four lake trout ranging in size from one-half a pound to 3½ pounds were caught by 61 fisherman, fishing 284 hours. This provided an average season catch per unit effort of 9 lake trout per 100 rod-hours. The modal size of the lake trout caught was two pounds.

Of the 24 trout caught, only one was taken on a live minnow and three were taken on artificial bait. The balance were caught by bobbing with pieces of mature sucker as bait.

The census on Killarney Lake, as previously pointed out, was conducted whenever anglers were believed to be present on the lake. It is the writer's opinion that the census covered almost 100 per cent of the angling pressure. Of the 61 anglers checked, 85 per cent were residents of the town of Killarney.

Weather conditions limited the movements of the anglers on Killarney Lake. Deep snow and slush restricted travel to the south end of the lake which is not recognized as the best fishing area. Success in 1962, while only a subjective appraisal by the writer appeared to be considerably lower than that of previous years.

Summary

1. A creel census was carried out during the winter months of 1962 on Mahzenazing and Killarney Lakes.

2. One hundred and eighty-seven anglers were checked on Mahzenazing Lake and 61 on Killarney Lake.

3. Some 167 fish (yellow perch, northern pike and yellow pickerel) were taken by the anglers using Mahzenazing Lake and 24 lake trout were taken from Killarney Lake.

4. The catch per unit effort (C.U.E.) for Mahzenazing was 16 fish (of all species) per 100 rod-hours, while for Killarney Lake it was nine lake trout per 100 rod-hours.

5. The fishermen using Mahzenazing Lake (at least when access is good) were family men, who took along their families for a days outing. Local residents made up the largest part of the sportsmen using Killarney Lake.

6. The heavy influx of sportsmen into the Killarney area with the opening of Highway #637 has had no apparent effect on the attitudes of the local residents.

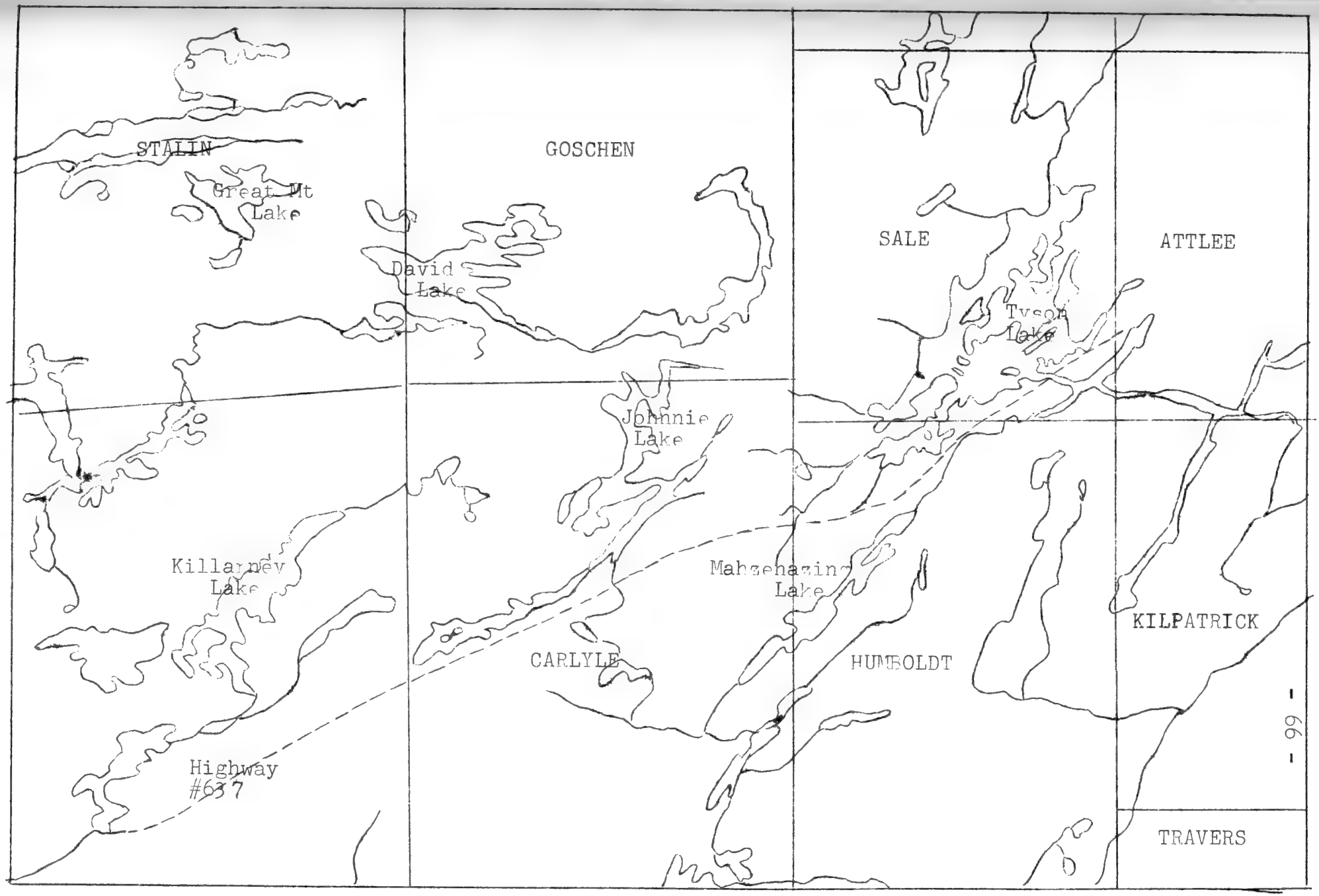
7. No conclusions on the quality of angling have been drawn, as similar creel censuses, with the exception of D. R. Hughson's work on Lake Penage, have not been conducted in other district lakes.

TABLE 1 - MAHZENAZING LAKE WINTER CREEL DATA, 1962

Date	Yellow Perch	North. Pike	Yellow Pickerel	Total Fish	Angler	Hours	Fish/ 100 Rd.Hrs.
Jan. 15-31	17	51	7	75	111	631	12
Feb. 1-15	11	16	3	30	31	181	16
Feb. 16-28	23	17	1	41	30	147	28
Mar. 1-15	5	10	-	15	9	51	29
Mar. 16-31	2	4	-	6	6	31	19
TOTALS:	58	98	11	167	187	1,041	16

TABLE 2 - KILLARNEY LAKE WINTER CREEL DATA, 1962

Date		Lake Trout	Anglers	Hours	Fish/100 Rod Hours
January	1-15	4	4	16	25
"	15-31	4	13	60	7
February	1-15	5	18	89	6
"	16-28	3	16	75	4
March	1-15	7	4	23	30
March	16-31	1	6	21	5
TOTALS:		24	61	284	9


STALIN
Great Mt Lake
GOSCHEN
David Lake
SALE
ATTLEE
Tyson Lake
Johnnie Lake
Killarney Lake
Mahgehagin Lake
CARLYLE
HUMBOLDT
KILPATRICK
Highway #637
TRAVERS

MAP NO. I

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