

No. 32

December 1, 1956



**FISH AND WILDLIFE MANAGEMENT  
REPORT**

**PROVINCE OF ONTARIO  
DEPARTMENT OF LANDS AND FORESTS  
Division of Fish and Wildlife**

**Hon. Clare E. Mapledoram  
Minister**

**F. A. MacDougall  
Deputy Minister**



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(THESE REPORTS ARE FOR INTRA-DEPARTMENTAL  
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## EXPERIMENTAL WETLANDS APPRAISAL IN SOUTHERN ONTARIO

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Ontario Department of Lands and Forests  
Fish and Wildlife Division

## ABSTRACT

Three townships and portions of 2 others in southern Ontario were used as test areas for 4 wetland appraisal techniques. A field method using concession-block\* aerial mosaics and punch-type index cards was superior to the others tested. Inventory of one township of 95 square miles required 25 man-days and cost approximately \$3.25 per square mile surveyed. Pre-survey planning and educational programs were lacking from this survey. Factual values of wetlands resources should be publicized along with proposals for acquisition and management before inventory is undertaken. Government agencies other than those concerned with wildlife management hold shares in wetlands resources. Certain of these other agencies may be currently fitted to inventory and acquire wetlands in southern Ontario more economically than the Ontario Department of Lands and Forests. Wetlands acquisition is an economical method of preserving valuable natural areas and wildlife habitat. Wildlife habitat and recreation areas have not been produced more cheaply in southern Ontario than they might be by wetland acquisition. Minnesota purchased nearly 25,000 wetland acres for about \$29.50 per acre. This means of habitat restoration warrants consideration.

## ACKNOWLEDGEMENTS

The advice and criticisms of Dr. A. de Vos, Associate Professor, Ontario Agricultural College and Mr. A. T. Cringan, Ontario Department of Lands and Forests guided this investigation to completion. Working facilities were supplied by the Department of Entomology and Zoology of the Ontario Agricultural College at Guelph, Ontario. The Ontario Department of Planning and Development cooperated in supplying data from their River Valley Conservation Surveys. Timber Management Division of the Ontario Department of Lands and Forests supplied all aerial photographs.

## THE 1956 EXPERIMENTAL SURVEY

Experimental wetlands surveys were conducted on about 175,000 acres in Southern Ontario during the period May to August, 1956. Fieldwork covered the whole of Puslinch, Guelph and Eramosa Townships and a portion of Erin Township, in Wellington County, as well as 20,000 acres in Mulmur Township, Dufferin County. Four experimental techniques for appraising wetlands resources in Southern Ontario were organized.

Detailed descriptions of the 4 techniques are given in Appendix I. The techniques are numbered in the order in which they were developed.

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\* the area bounded by 2 concession roads and 2 cross roads or their rights-of-way.

PHYSICS DEPARTMENT

MEMORANDUM

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FROM: [Illegible]

SUBJECT: [Illegible]

[Illegible text follows]

[Illegible text follows]

[Illegible text follows]

Technique 1 -- Non dispensable photographs: topographic map: field forms Method

The initial method (Technique 1) was based on the plant associations of an hydrosere. Efficiency of this method was low for several reasons.

- 1) Unnecessary time was used in sorting photos to obtain coverage of the desired concession-block.
- 2) Photos were borrowed and had to remain in the vehicle. Consequently the fieldman had no guide, other than his memory, to the location or condition of the several wetlands he had to inspect while away from the vehicle.
- 3) Wetland locations recorded on a 1 inch: 1 mile topographic map were unsatisfactory because of small sizes or high densities of wetlands. No other method of recording locations was possible with this technique.
- 4) When fieldwork was completed all photographs and all field sheets had to be consulted to obtain the coverage for each concession-block which contained wetlands. The wetland then had to be planimeted and the area datum recorded with the other data for that wetland. Much more time was expended in this operation than would be necessary if the photographic coverage for each concession-block was indexed and readily accessible.

A cost breakdown of a survey by this method is given in Table II and its accompanying text.

Technique 2 -- Concession-block mosaics: field forms Method

Technique 2 was organized for the following purposes.

- 1) Provide a guide for the fieldman.
- 2) Produce accurate records of wetlands locations.
- 3) Provide permanent records of the condition of wetlands during the survey.
- 4) Speed up planimetering of wetlands' areas. The index on each mosaic folder allowed easy access to the photo coverage and wetlands data for any concession-block.

Summarizing data from this method was unwieldy. Each folder contained data on several wetland types; all folders had to be inspected once for each wetland type. This was time consuming.

An advantage of this approach is that mosaics used for wetlands surveys may be used for other purposes, such as upland game surveys, by other investigators.

The following table shows the results of the survey conducted in the area of the river during the period from 1950 to 1955.

The data indicates that there has been a significant increase in the number of fish caught during the survey period.

It is noted that the catch was particularly high during the months of June and July.

The reasons for this increase are not yet known, but it may be due to changes in the water level or the amount of food available.

Further studies are being conducted to determine the exact cause of this increase.

The results of the survey are summarized in the following table:

Table II shows the number of fish caught in each of the different areas of the river.

The data shows that the catch was highest in the area of the river near the dam.

This is probably due to the fact that the dam creates a pool of water where the fish can gather.

The following table shows the number of fish caught in each of the different areas of the river during the survey period.

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The reasons for this increase are not yet known, but it may be due to changes in the water level or the amount of food available.

Further studies are being conducted to determine the exact cause of this increase.



This method may be modified by recording "Dispersion" and "Plant Associations" (Punch Card Index Sheet) on every tenth wetland. These data are of use only in establishing the typical vegetative complex of each of the 10 wetlands types. Labour expenditure would be reduced in this way.

The Mulmur Township area on which this technique was tested had such a low wetland density that a quantitative comparison of the efficiency of this technique with other techniques was not possible. Table I gives a qualitative comparison.

Usefulness of this method hinges on the availability of dispensable, recent photo coverage.

### Technique 3 -- Non-dispensable photographs: punch cards Method

Technique 3 was organized to reduce time required for summarizing and to provide better permanent records of descriptive data.

Efficiency of a survey by this method (using borrowed photos) was limited by the disadvantages given under Technique 1 which also employs non-dispensable photo coverage.

Technique 3 has some advantages over Technique 1. Recording and summarizing data was aided by the use of punch cards. Additional analyses of the data recorded on these cards can be undertaken later; blank punch holes are reserved for this purpose.

### Technique 4 -- Concession-block mosaics: punch cards Method

Technique 4 employed the most efficient means of guiding fieldmen and recording wetlands locations combined with the most useful means of recording descriptive data. Permanent records were produced which can be easily stored and analysed.

This method was not field tested because no dispensable photo coverage was available at this time. The comparative values shown in Table I are valid without field trial because both concession-block mosaics and punch cards have been tested as components of other techniques.

### Accuracy

A check on the accuracy of fieldwork carried out during the 1956 field season was not possible. Error was unavoidable, however, because of growth changes in aquatic vegetation. Some potholes inspected in May had no vegetation; late in July or early in August some of these same units would have been well vegetated and would have been classed as deep marshes. Phenological errors cannot be avoided when long field seasons must be used. More complete knowledge of the ecology of individual wetlands of each of the various types will allow correction for these errors.

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### Technique 2

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### Technique 4

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TABLE I  
 QUALITATIVE COMPARISON OF EFFICIENCY OF FOUR WETLAND APPRAISAL TECHNIQUES

	Rated in Labour Expenditure for:			*Usefulness
	Pre-survey Preparation	Fieldwork	Summarizing	
Technique 1 (non-dispensable photos: topo map: field forms)	high	high	average	poor
Technique 2 (concession-block mosaics: field forms)	high	low	high	fair
Technique 3 (non-dispensable photos: topo map: punch cards)	average	average	average	fair
Technique 4 (concession-block mosaics: punch cards)	average	low	low	excellent

\* In addition to labour expended, value and multiple usefulness of the permanent records obtained (as discussed under Technique 4) are considered.

#### Labour and Costs Involved in Wetlands Appraisal

Table II compares the labour expended in surveying 3 townships with the wetlands densities in these areas. With a density of one wetland on each 87 acres of map area a large number of wetlands and a small map area can be surveyed per day. In an area with one wetland on each 270 acres more time is spent travelling between wetlands. Consequently a smaller number of wetlands and a larger map area can be surveyed per day. Table II refers to a survey by Technique I.

TABLE II

#### LABOUR EXPENDED IN WETLANDS SURVEY OF KNOWN SAMPLE AREAS

(Total sample area 144,313 acres)

Density (Acres/wetland)	Number of wetlands inspected/man-day	Total land acreage inspected/man-day
87	30	2600
270	17	4623
289	23.5	6775

3 man office time

133

5.25 per square mile

1 weekend

11-14

12-16

2 office days

88.1

54 mile

50

## Survey Costs for Known and Unknown Sample Areas

Puslinch Township, Wellington County, Ontario has a map area of 59,904 acres with a wetland density of 1 wetland per 87 acres. Twenty-three man-days of fieldwork and 2 man-days of office time were required to completely survey this township (using Technique 1).

This survey cost approximately \$309.50 or \$3.25 per square mile of map area surveyed. (Estimate includes salary, transportation and office materials. Photographic coverage was supplied at no cost by the Timber Management Division of the Ontario Department of Lands and Forests.)

Estimates of labour required to survey unknown areas may be derived from Table II. By extrapolation an hypothetical township of 50,000 acres map area with a wetland density of 1 wetland per 183 acres might require from 11 to 14 man-days of fieldwork plus 2 man-days office time. This estimate assumes a one-man crew. Labour may be reduced by the use of a 2 man crew, as discussed later in this report.

Approximate costs of survey may be determined, in advance, from this estimate.

### Education and Publicity

Pre-survey educational programs are essential. Publicity should be applied at all levels if wetlands conservation is to be successful.

Publicity at the administrative level, both inter- and intra-departmental is vital to the enlistment of biologists, soil scientists, agriculturalists and others in a combined effort.

When the public -- wetland owners and urbanites -- know the meaning of "wetlands" and "wetlands survey", a sense of values of wetlands may be formed.

Fieldmen should execute a follow-up to preliminary publicity. The fieldmen's understanding of wetlands, their values and their possible place in the future, must be adequate to answer the landowners' questions satisfactorily. This situation is possible only if administrative chiefs have given their fieldmen a full understanding of the wetlands program.

Unless pre-planned programs of acquisition and management have been formed publicity is not desirable.

Wetlands educational programs should be based on facts. Special air surveys to determine the amount game species use wetlands have been used elsewhere in this fact finding. The percentage of a total number of observations on a game species that were made in wetland areas may also be convincing.

# THE HISTORY OF THE UNITED STATES

FROM THE EARLIEST PERIODS TO THE PRESENT  
BY  
JAMES M. SMITH, D.D., LL.D.,  
OF THE UNIVERSITY OF CHICAGO.

NEW YORK: THE CENTRAL BOOK CONCERN, 1887.

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## Survey Administration

### Fieldwork

Wetlands survey fieldwork could be accomplished in several ways. Surveys could be executed by: special inventory biologists, existing district staff, special summer student crews or existing staff of Departments other than Lands and Forests.

Inventory biologists are not yet available in the Ontario Department of Lands and Forests.

Existing district staff, whether biologists or conservation officers, in the present organization, would be able to inspect wetlands only on a part-time basis. Some data would possibly be outdated before the completion of such a survey.

Special crews of summer students (Forestry, Biology or Agriculture) could conduct the fieldwork adequately. However, additional supervisory staff would have to be provided.

Existing field staff of other departments potentially could inspect many wetlands in southern Ontario. As an example, field crews of the Ontario Department of Planning and Development recently covered much of the area included in this year's wetland survey. These crews will continue River Valley Conservation Surveys in areas that should be surveyed for wetlands. Such field crews could do wetlands fieldwork if supplied with materials and instructions. Survey costs would be significantly reduced if fieldwork could be accomplished in this way.

The monotony of wetlands fieldwork reduces efficiency and accuracy if a one-man crew is employed steadily at this work. This situation could be partially corrected if one-man crews carried on other work, such as mammal or plant collecting, along with wetlands inspection. The modification of Technique 2 mentioned above would likewise relieve monotony for a single worker. A two-man crew, working from one vehicle but separately in the field would be more satisfactory than a lone worker.

### Acquisition and Management

In other wetlands resources programs inventory has been followed by acquisition. Acquisition (or some other phase of management) should follow inventory closely--if inventory data are to be useful for acquisition purposes. Acquisition even without immediate management would at least assure the continued existence of the purchased units. River Valley Authorities could potentially incorporate the fieldwork and administration of wetlands acquisition in their current land acquisition programs.

What agency will manage the acquired wetlands? This is one question that should be answered before inventory plans will be complete.





## GENERAL INSTRUCTIONS

(Apply to all techniques)

- 1) Include all areas over 1/4 acre in size.
- 2) Include open water areas up to 10 acres in size (July conditions). (Open water areas over 10 acres should be covered by a separate lake survey.)
- 3) Include river and stream bottomlands and their shoreline vegetation.
- 4) Include artificial impoundments or dugouts only if over 1/2 acre in size and only if wildlife habitat on the area has been improved.

## DESCRIPTIONS OF FOUR WETLANDS SURVEY FIELD METHODS

Technique 1 -- Non-dispensable photographs: topographic map: field forms Method.

Pre-survey Preparation

Number all concession-blocks directly on the topographic sheet, starting with No. 1 in each township and numbering consecutively until the township is completed.

Draw and number all photographic flight lines directly on the topographic sheet. This may be done by locating the first and last photos of each line, on the map, and joining these locations.

Prepare enough field forms for the area to be surveyed. (See attached sample.)

Fieldwork

Photos are referred to before entering the area, but are left in the vehicle; only the topographic map and field sheets are taken directly into the field. Data are recorded according to the attached "Instructions for Completing Wetlands Field Form".

Summarizing

Summarize to obtain the following data for each type of wetland: 1) total number of wetlands, 2) total acreage, 3) area class distribution in four acreage classes (0 to 0.99, 1.00 to 4.99, 5.00 to 9.99 and 10.00 plus), 4) total number and total acreage of drainable wetlands of each type and the percentage these form of all wetlands of this type, 5) same as 4) for conditions of grazing.

From these summaries, by type of wetland, the data shown on the attached sample table for Fuslinch Township are derived.

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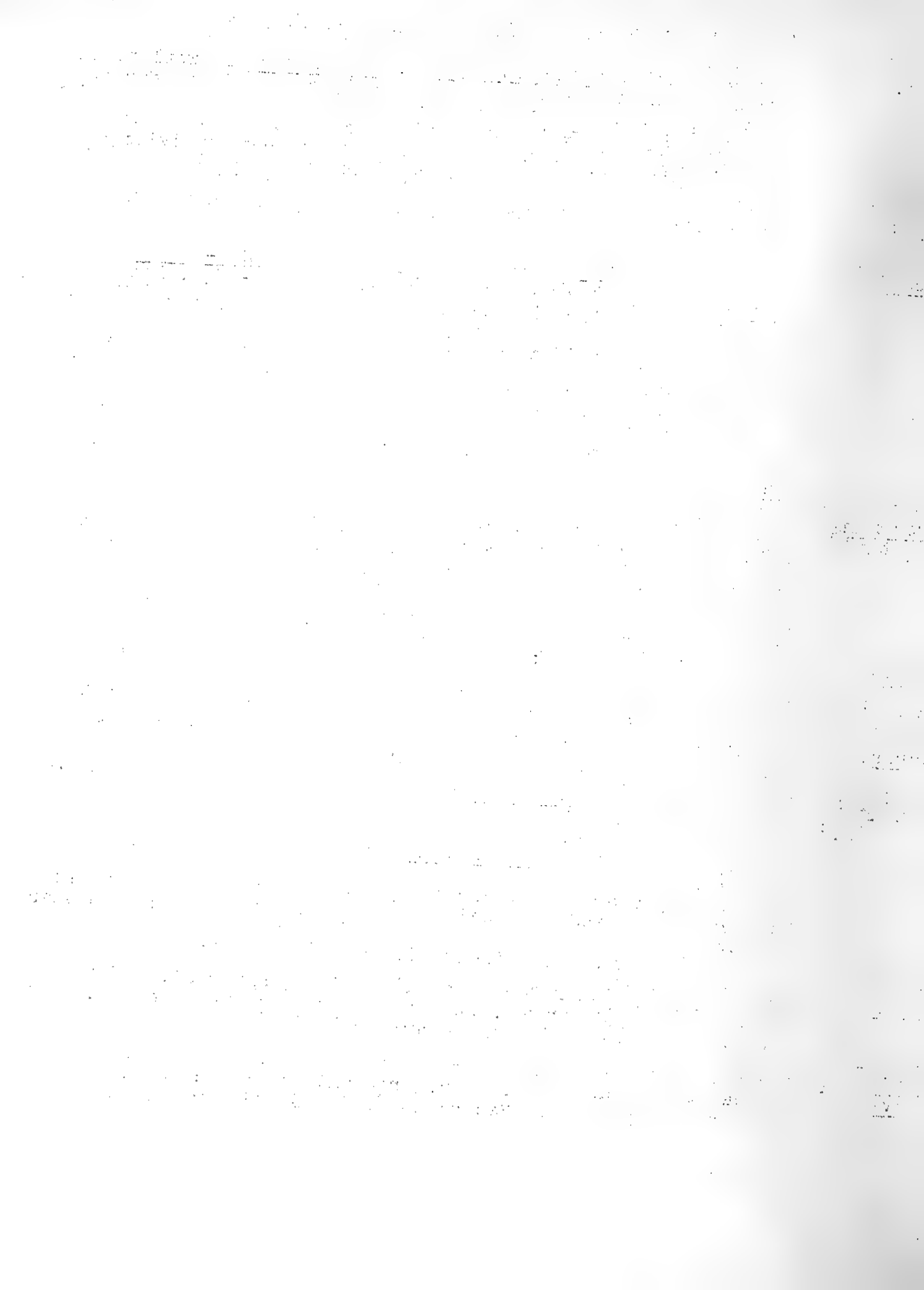


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## INSTRUCTIONS FOR COMPLETING WETLANDS FIELD FORM

I - 3

- Type: Record data for only one type or one subtype of wetland on each field sheet. (See Wetland Classification Guide for a description of each wetland type.)  
If an individual wetland is composed of two or more types or subtypes, over 1/4 acre in size, enter each subdivision on the appropriate field sheet. (See also Location.)
- Date: Record month, date and year as April 12/56. Do not use 4/12/56.
- Location: Record as Block No. -- Wetland No. e.g. 2 - 9  
Concession -- Lot(s) V - S $\frac{1}{2}$ 5, N $\frac{1}{2}$ 6  
Number each concession block (area outlined by roads) consecutively for the county or township.  
Number the individual areas, starting with No. 1 in each concession block and numbering consecutively until each concession block is completed. Number the individual areas on the topographic map as on the field sheets.  
If an individual wetland is composed of two or more types or subtypes, number each subdivision separately. (See also Type.)
- Predominant Vegetation: Record only those species which are dominant and in some way characterize the individual wetland and the wetland type in which you have classed it. List the species briefly, in descending order of abundance. (See Symbol sheet for standard abbreviations.) Where possible, record plant associations rather than single species. Record each association in brackets, in descending order of importance, as (Cattail: Sweet flag; Horsetail).
- Shape: Note the topographic outline of the area as one of 1) irregular, 2) round, 3) elongate. Record as I, R or E.
- Acres: Determine the area from the air photo by planimeter or acetate jig. Record to the nearest 1/4 acre.
- Drainability: This refers to ECONOMIC drainability. Record as either "D" (drainable) or "U" (undrainable) on the basis of the three following factors.  
1) Can the area be economically drained by gravity? (tile or ditch).  
2) Is the water supply currently used by the owner (e.g. stock water source) and will this use prohibit drainage in the near future?  
3) Does the wet area hinder tillage of the field?
- Grazing: Record as either "G" (grazed) or "U" (ungrazed). If the area is lightly grazed, record as ungrazed but note O.T.G. (open to grazing) in the Remarks column.
- Adjacent Cover: Record the type of cover within 100 yard of the mapped area as; woods, plantation, cropland, improved pasture or unimproved pasture. Record as W, PL, C, IP, or UP.



Easily Impounded?: Record "Yes" if the area obviously can be easily impounded. Do not record if "No".

Any Inflow?: Record the nature of any evident inflow into the area such as: spring, seepage, temporary stream or permanent stream. Do not record if no inflow.

Wildlife Utilization: Record common names of game, tracks, droppings, cuttings or other signs of utilization seen on, over or near the area. Note age and sex where possible.

Remarks: Record obvious land use trends, intentions expressed by landowner or other data pertinent to the wildlife values of the wetland.





Type	Number of Units	Acreage	% of Total Wetlands Acreage	% of Township Acreage	% Drainable by type (acres)	% Grazed by type (acres)
Potholes A (no shrub or tree border)	83	92.00	05.68	00.15	1.36	83.42
Potholes B (shrub or tree border)	179	121.50	07.50	00.20	0.00	89.09
Deep Marsh	5	8.75	00.54	00.01	0.00	88.57
Shallow Marsh	74	182.25	11.25	00.30	0.00	85.05
Shrub Swamp A (closed canopy)	91	431.25	26.62	00.72	0.64	84.17
Shrub Swamp B (open canopy)	102	411.75	25.42	00.69	1.34	86.09
Shrub Swamp * A and B	21	185.00	11.42	00.31		
Bog A (timbered fringe)	4	30.00	01.85	00.05	0.00	38.33
Bog B (scattered timber)	8	157.25	09.72	00.26	0.00	6.68
Totals (excluding timbered swamps)	567	1619.75		02.70		
Timbered Swamp	143 P & D Total	5251.00 2983.50* 8234.50		13.75	0.00**	92.92**

\* Data from Ontario Dept. of Planning and Development.  
 \*\* Figures computed from data recorded during current Ontario Dept. of Lands and Forests survey only -- considered. Planning & Development survey data are not considered.

Puslinch Township acreage 59,904  
 0.14%\*\* of 6685.75 acres drainable  
 89.24%\*\* of 6685.75 acres grazed



## Technique 2 -- Concession-block mosaics: field forms Method.

### Pre-survey Preparation

Number concession blocks on a topographic sheet as in Technique 1.

Prepare one cap-size manilla file folder for each concession-block to be surveyed. Index the folders with County, Concession, Lots, Township and Block Number for the mosaic each will contain.

Cut mosaic sections from the original photos to form complete, separate mosaics for each concession-block to be surveyed. Mark the block number and a north direction arrow on the back of each mosaic section, as cut. Paste these sections, on the left, inside the prepared manilla folders. Mark a direction arrow on each folder beside the mosaic.

Prepare field forms (see attached sample) and fasten one in each manilla folder, opposite the mosaic. (An extra field form may be attached later if required.)

### Fieldwork

The appropriate manilla folder is taken directly into the field. Each wetland is outlined and numbered on the photo and the description recorded opposite the corresponding wetland number on the field sheet. Data is recorded as described in Technique 1.

### Summarizing

Each field sheet contains data on several types of wetlands; folders must each be inspected to summarize the data for each type of wetland. When summary by type is accomplished, proceed toward the final summary as outlined in Technique 1.

## Technique 3 -- Non-dispensable photos: topographic map: punch card Method.

### Pre-survey Preparation

Office preparation for this method is identical with that of Technique 1 except no field sheets are needed. Punch-type index cards (4" x 6") are substituted. (See attached code sheet and sample card.)

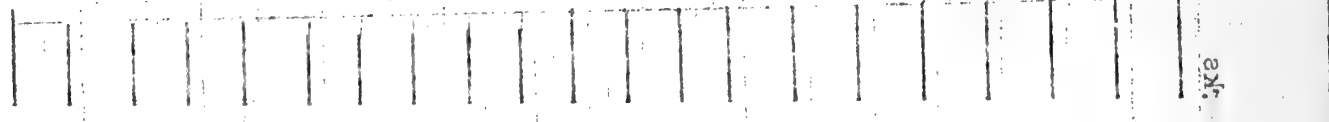
### Fieldwork

Fieldwork in this method is identical with Technique 1 except recording is by marking the appropriate hole, on the card, with pencil and writing additional information on the face of the card. Punch holes are only marked in the field, and punched later, to preserve the card's margin.





2000



2000



PUNCH CARD INDEX SHEET

<u>DISPERSION (% surface area covered)</u>	<u>TYPE</u>	
Open water	Pothole A	20
0%	Pothole B	20, 21
0 - 10%	Artificial	21
10 - 40%	Deep Marsh	21, 22
40 - 100%	Shallow Marsh	22
	Shrub Swamp A	22, 23
	Shrub Swamp B	23
Floating, not rooted	Bog A	23, 24
0%	Bog B	24
0 - 10%	Timbered Swamp	24, 25
10 - 40%		
40 - 100%		
	<u>ADJACENT COVER</u>	
Submerged rooted	Woodlot	26
0%	Plantation	27
0 - 10%	Crop	28
10 - 40%	Improved Pasture	29
40 - 100%	Unimproved Pasture	30
	<u>SHAPE</u>	
Floating rooted	Irregular	31, 32
0%	Round	32
0 - 10%	Elongate	33
10 - 40%		
40 - 100%		
	<u>AREA CLASS</u>	
Emergent broad-leaved	0 - 0.99	34
0%	1.00 - 4.99	34, 35
0 - 10%	5.00 - 9.99	35
10 - 40%	10.00 plus	36
40 - 100%		
	<u>DRAINABILITY</u>	
Emergent reed-like	Yes	37
0%	No	38
0 - 10%		
10 - 40%		
40 - 100%		
	<u>GRAZED</u>	
Gramineae and Carex	Yes	39
0%	No	40
0 - 10%	No but O.T.G.	41
10 - 40%		
40 - 100%		
	<u>EASILY IMPOUNDED</u>	
Shrubs	Yes	42
0%	No	43
0 - 10%		
10 - 40%		
40 - 100%		
	<u>ANY INFLOW</u>	
Trees	Yes	44
0%	No	45
0 - 10%		
10 - 40%		
40 - 100%		
	<u>WRITE ON CARD</u>	
	County	
	Township	
	Concession	
	Lots	
	Date	
	Worker	
	Plant Associations	
	Area	
	Game and Sign seen	
	Remarks	





Summarizing

Summarizing is accomplished by needle-sorting the punch cards and proceeding identically as in Technique 1. In addition, the modal and mean percentages of each ecological type of vegetation may be determined for each wetland type.

## Technique 4 -- Concession-block mosaics: punch card Method

Pre-survey Preparation

Concession-block mosaics are prepared as in Technique 2 but no field forms are needed. Punch cards (Technique 3) are substituted.

Fieldwork

Mosaic folders are taken directly into the field along with a supply of punch cards. Wetlands locations are recorded by outlining and numbering directly on the mosaic.

All descriptive data are recorded on the punch cards--one card for each wetland unit.

Summarizing

Summarizing is identical with Technique 3.

	County	Township
		Block - Wetland No.
		Concession - Lot(s)
	Plant Associations	
	Area	
	Game and Sign	
	Remarks	
	Date	
	Worker	

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial data. This includes not only sales and purchases but also expenses and income.

The second section details the various methods used to collect and analyze data. It describes how different types of information are gathered, from direct observations to indirect measurements, and how these are then processed to identify trends and patterns. The use of statistical tools is highlighted as a key component of this process.

The third part of the document focuses on the application of these findings. It explains how the data is used to make informed decisions, whether in the context of business operations, public policy, or scientific research. The importance of clear communication of results is also stressed, as it ensures that the insights gained are effectively shared with the relevant stakeholders.

Finally, the document concludes by discussing the future of data analysis. It looks at emerging technologies and methodologies that are expected to revolutionize the way we collect and interpret data. The potential for greater accuracy and efficiency is discussed, along with the challenges that must be overcome to fully realize these possibilities.

## RECOMMENDATIONS FOR TRAINING WETLANDS SURVEY FIELDMEN

Very little training should be necessary for fieldmen who have studied elementary plant ecology. Other personnel should receive an adequate review of the ecological stages and substages of an hydrosere. Fieldmen should be impressed with the lack of definity of these ecological stages as encountered in the field; heterogeneous admixtures of several stages should be expected.

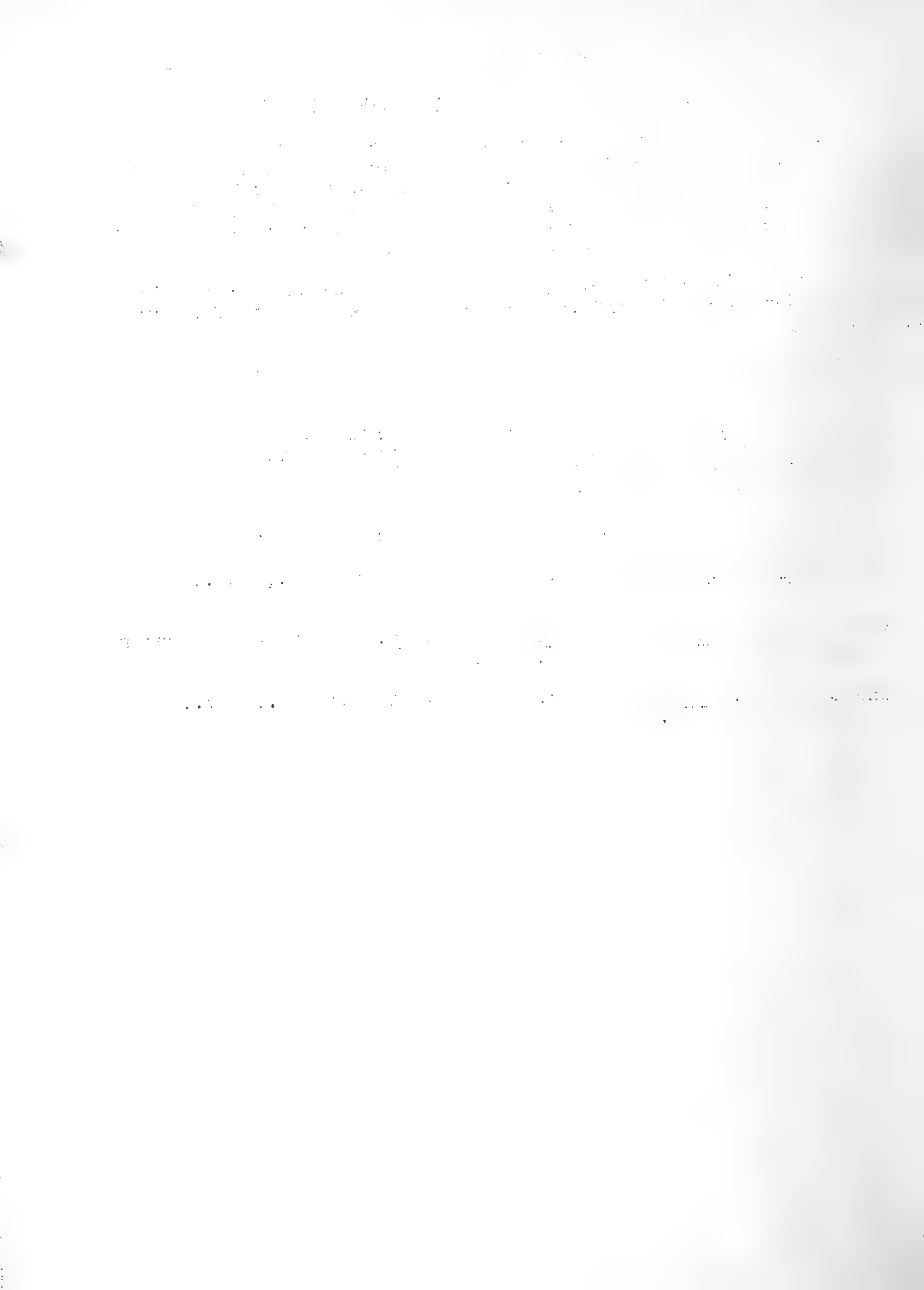
Recognition of the trees, shrubs and herbaceous plants listed on the wetlands "Symbol Sheets" (attached) would be adequate for work in the Guelph area.

Familiarity with collecting and keying procedures would be useful.

Field recognition of aquatic plants throughout the entire field season is next to impossible. Therefore the fieldmen should be able to classify wetlands ecologically when unable to determine all the genera of plants found on the area.

The following are useful references and field handbooks.

- Fassett. Manual of Aquatic Plants. McGraw-Hill Book Co., Inc., New York. 1940.
- Meunschner. Aquatic Plants of the United States. Comstock Publishing Company, Ithaca, New York. 1944.
- Weaver and Clements. Plant Ecology. McGraw-Hill Book Co., Inc., New York. 1929.



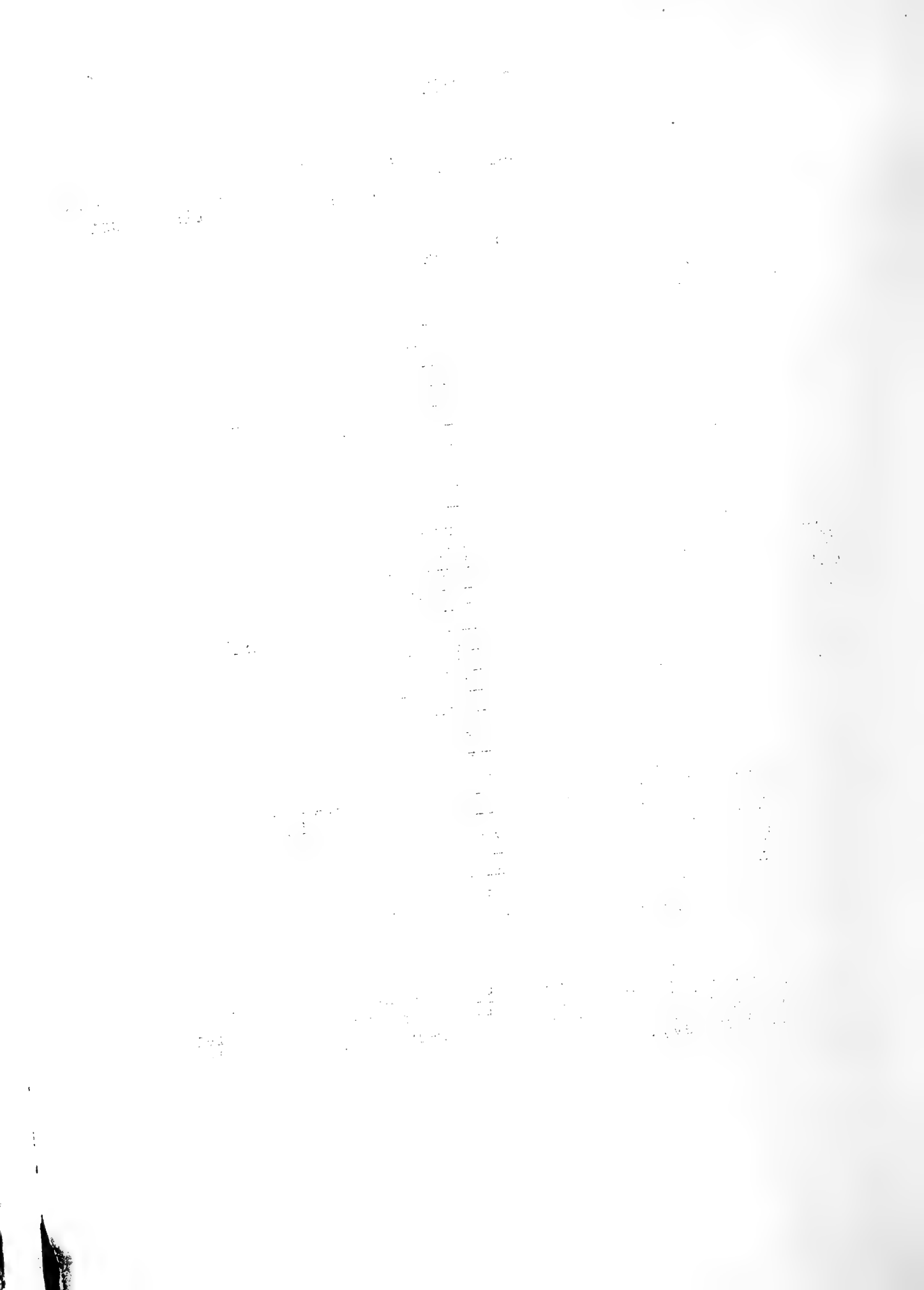
## SYMBOL SHEET

The symbols for Trees and Shrubs, Forest Cover Types and Herbaceous Plants shown on this sheet are only partial lists. Species encountered in other regions but not represented on these lists must be added as encountered.

Trees and Shrubs

ALg	grey alder	<u>Alnus rugosa</u>
ASb	black ash	<u>Fraxinus nigra</u>
ASw	white ash	<u>Fraxinus americana</u>
BIw	white birch	<u>Betula papyrifera</u>
BIy	yellow birch	<u>Betula lutea</u>
CEw	white cedar	<u>Thuja occidentalis</u>
CR	cranberry	<u>Vaccinium spp.</u>
DOs	dogwood shrubs	<u>Cornus spp.</u>
ELc	corky (rock) elm	<u>Ulmus Thomasi</u>
ELr	red (slippery) elm	<u>Ulmus rubra</u>
ELw	white elm	<u>Ulmus americana</u>
FIB	balsam fir	<u>Abies balsamea</u>
GA	Gale	<u>Myrica Gale</u>
HAS	hawthorn shrubs	<u>Crataegus spp.</u>
HE	hemlock	<u>Tsuga canadensis</u>
LAT	tamarack	<u>Larix decidua</u>
LEl	leather leaf	<u>Chamaedaphne calyculata</u>
MAh	hard maple	<u>Acer saccharum</u>
MAR	red maple	<u>Acer rubrum</u>
MAS	silver maple	<u>Acer saccharinum</u>
PIj	jack pine	<u>Pinus Banksiana</u>
PIr	red pine	<u>Pinus resinosa</u>
PIs	scotch pine	<u>Pinus sylvestris</u>
PIw	white pine	<u>Pinus Strobus</u>
POb	balsam poplar	<u>Populus balsamifera</u>
POL	large tooth aspen	<u>Populus grandidentata</u>
POT	trembling aspen	<u>Populus tremuloides</u>
SPa	Spiraea	<u>Spiraea alba</u>
SPb	black spruce	<u>Picea mariana</u>
SPw	white spruce	<u>Picea glauca</u>
Wib	black willow	<u>Salix nigra</u>
Wis	willow shrubs	<u>Salix spp.</u>

Trees and Shrubs are symbolized by writing the first two letters of the proper noun in capitals, followed by the initial letter of the qualifying adjective, written in the lower case. Grey alder is represented by AL(der) g(rey).



Forest Cover Types \*

4	Aspen
6	Paper birch
21	White spruce - balsam fir - paper birch
22	Balsam fir
24	White cedar
25	Tamarack
26	Black ash - white elm - red or silver maple
60	Silver maple - white elm
60A	White elm
88	Willow

H (hardwood) denotes a stand composed of 80% or more broad-leaved trees.

C (coniferous) denotes a stand composed of 80% or more coniferous trees.

M (mixed) denotes a stand composed of less than 80% broad-leaved trees and less than 80% conifers.

\* The numbers used to represent forest cover types are according to the Society of American Foresters (1940) system. Additional cover type symbols may be found in Forest Cover Types of the Eastern United States - Society of American Foresters, 1940, or in the River Valley Conservation Reports published by the Ontario Department of Planning and Development.

NOTE: These are some of the associations of tree species found commonly in wetlands. All associations of trees encountered will not fit the designated types exactly. Place each woodlot in the type it fits most closely then note any additional species as in the following examples.

A stand composed predominantly of aspen with some white cedar is recorded as "4 with CEw". Similarly a woodlot predominantly white cedar but with some tamarack is noted as "24 with LAt".

## Herbaceous Plants\*\* (Partial list)

ACc	<u>Acorus calamus</u>	Sweet flag
AL	<u>Algae</u>	Algae
ASi	<u>Asclepias incarnata</u>	Swamp milkweed
CAs	<u>Carex spp.</u>	Sedges
ELs	<u>Eleocharis spp.</u>	Spike rush
ELc	<u>Elodea canadensis</u>	Canada waterweed
EQs	<u>Equisetum spp.</u>	Horsetail
IRv	<u>Iris versicolor</u>	Iris
JUs	<u>Juncus spp.</u>	Spike rush
LA	<u>Labiatae</u>	Mint family
LEg	<u>Ledum groenlandicum</u>	Labrador tea
NUa	<u>Nuphar advena</u>	Yellow water lily
NYo	<u>Nymphaea odorata</u>	White water lily
POc	<u>Pontederia cordata</u>	Pickerelweed
POs	<u>Potamogeton spp.</u>	Pondweeds
POLs	<u>Polygonum spp.</u>	Smartweeds
SAL	<u>Sagittaria latifolia</u>	Duck potato
SCs	<u>Scirpus spp.</u>	Bulrush
SIs	<u>Sium suave</u>	Water parsnip
SPs	<u>Sphagnum spp.</u>	Sphagnum moss
TYl	<u>Typha latifolia</u>	Cattail

Dear Sir,

I have the honor to acknowledge the receipt of your letter of the 14th inst. in relation to the above matter.

The same has been referred to the proper authorities for their consideration.

I am, Sir, very respectfully,  
Yours truly,  
[Signature]

[Name]

[Address]

[City, State]

[Country]

[Phone Number]

[Fax Number]

[E-mail Address]

[Website]

[Social Media]

[Additional Information]

[Closing Remarks]

[Final Signatures]



\*\*Herbaceous plants are not symbolized according to an accepted system. These species are represented by writing the first two letters of the generic name in capitals followed by the initial letter of the specific name, written in the lower case. (A lower case "s" represents several species of the genus.)

Terms used under the heading "DISPERSION" on the Punch Card Index Sheet are based on the recognized ecological stages of an hydrosere. "Floating, not rooted" refers to such plants as Lemna spp. and Wolffia spp. "Submerged rooted" includes Elodea canadensis and Chara spp. Typha spp., Sagittaria spp., Pontederia spp., and Calla palustris are "Emergent broad-leaved". "Emergent reed-like" vegetation is exemplified by Juncus spp., Eleocharis spp., Scirpus spp. and others. Gramineae and Carex are grouped together because they both occur in adjacency, in some proportion, around most wetland areas.



AN EVALUATION OF CANADA GOOSE KILLS

BY THE INDIANS OF NORTHERN ONTARIO

Harold C. Hanson<sup>1</sup> by  
and Campbell Currie<sup>2</sup>

In 1946, the U. S. portion of the Mississippi Flyway was closed to the hunting of Canada geese. The flyway closure proclamation came as the ultimate climax to a series of years of excessive kills in Illinois in the vicinity of the Horseshoe Lake Game Preserve. In 1947, the season on Canada geese was reopened with a bag limit of one bird per day. Further protection was given the goose flock wintering at Horseshoe Lake by closing to hunting a large sector of private land around this refuge. These and further restrictions, an expanded refuge program, plus a series of favorable breeding seasons enabled the Mississippi Valley flyway flock to regain and then far exceed its earlier numbers. Today, the present population considerably exceeds that of any time in recent decades.

The hunting of Canada geese in Ontario, i.e., that part of Canada lying within the Mississippi Valley flyway, was not curtailed as an aftermath of overshooting in the States, probably for the very reason that the kill of Canada geese by white hunters in southern Ontario has always been negligible. In northern Ontario, however, in the District of Patricia, the Cree Indians trapping within 150 miles of the coasts of James and Hudson Bay have apparently always made a fairly sizeable kill of Canada geese.

In 1947, an effort was made to ascertain the kill made by the Indians that hunt and trap over the breeding grounds of the Mississippi Valley flock, fig. 1. A majority of the trappers were contacted by personal interview. From the data obtained, an estimate of the kill at that time was made, table 1. Thus when the flyway population was approximately 54,600 birds, the spring kill by the Indians trapping the breeding grounds was calculated to be about 4,600 geese, or about 8.5 per cent of the flight leaving the States.

Since 1947, the Flyway population has increased by about 4.8 times. The January 1954 inventory indicated a population of 160,000 wintering in southern Illinois alone. Consequently it became a matter of considerable interest to determine the Indian kill in the fall of 1953 and the spring of 1954 in the light of the increased population of geese. Had the Indian kill increased in proportion to the increase in the numbers of geese reaching the breeding grounds - or, its corollary, were the Indians benefiting by the increased supply of geese? Opportunity

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<sup>1</sup>Illinois Natural History Survey, Urbana.

<sup>2</sup>Ontario Department of Lands and Forests, Sioux Lookout.

AN EVALUATION OF THE WILD BIRD HUNTING

In 1947, the... was closed to the... proclamation... of excessive... Lake Game Preserve... reopened with a... section was... by closing to hunting... this refuge... plus a... enabled the... far exceed the... considerably...

The hunting... part of Canada... not curtailed as an... probably for the very... white hunters in... In northern Ontario... Cree Indians... and Hudson Bay... kill of Canada...

In 1947, an... made by the... of the Mississippi Valley... trappers were... obtained, an estimate... Thus when the... the spring kill by... was calculated to be... of the light...

Since 1947, the... about 4.8 times... of 100,000... it became a... Indian kill in the... light of the... increased in... reaching the... Indians benefiting...

to obtain data to answer these questions was offered the writers by the Ontario Department of Lands and Forests. To the officials of this agency, Hanson, the "outsider" of this report, is most appreciative.

### Itinerary, June 1954 Trip

The following posts in northern Ontario were visited jointly by the writers:

Round Lake	June 12
Bearskin Lake	June 12-15
Big Trout Lake	June 15
Kasabonica	June 16
Sachigo Lake	June 17
Ft. Severn	June 18-19
Weenusk	June 19
Sutton Lake	June 19-20
Landsdowne	June 20
Ft. Hope	June 20-22

In addition to these posts, data were obtained by Messrs. Campbell Currie and Thomas Batchelor from the posts of:

Little Grand Rapids  
Island Lake  
Shamattawa  
Osnaburgh  
Pickle Lake  
Big Beaver House

### Results

Kill data were obtained in 1954 by means of personal interview from about 71 per cent of the trapper population residing in the band areas visited. In figure 2, the location of the various band trapping areas, their size in square miles, and the number of trappers therein are shown. The average, extreme, and calculated kills made by the various bands of Indians interviewed, are summarized in table 2.

A previous analysis of band recoveries from northern Ontario, fig. I (Hanson and Smith, Ill. Nat. Hist. Surv. Bull. Vol. 25, Art. 3, 1950), indicated that 90% of the kill by the Indians of northern Ontario was made in the spring. The 1954 interview data essentially confirm this conclusion.

In 1947, data were obtained only from the coastal posts. The 1954 survey was of particular value as it afforded an opportunity to secure data from inland post areas which were not previously sampled. The posts of Ft. Albany and Attawapiskat were not visited in 1954; data for these posts will be forthcoming, but estimates for these posts can be interpolated from existing data for use here.

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Summary

Summary of the document's content, including key findings and conclusions.

## Discussion and Conclusions

The chief weakness of the 1947 estimate is that the kill for the inland posts (400-700 annually) was essentially a calculated guess based on band recoveries. The present data indicate that this estimate was low, perhaps chiefly because a concerted effort had not been made in earlier years to collect band recovery data from the "inland Indians". The 1954 data indicate a kill of 2-2500 geese by Indians trapping south and west of the muskeg breeding grounds. Perhaps unusual spring weather conditions may have resulted in a larger kill than usual. Indians both at Landsdowne House and Ft. Hope reported to the writers that the geese were driven back south twice by snow storms and cold before making their final northward migration. These reports imply that the geese made five migrational flights over the above sectors, which, if true, provided these Indians with at least three times the normal goose hunting opportunities, the assumption being made that the two southward retreats, made by storm driven geese under "forced draft", provided little hunting. Of further interest, Indians at almost all the posts reported seeing more geese this past spring than within recent memory.

Perhaps the most unexpected findings were from Weenusk and Ft. Severn. Despite the large increase in geese in 1954 over 1947, the average spring kill per Indian in 1954 was not greatly different from the 1947 kill. (Ft. Severn 15.9 vs. 17.0; Weenusk 21.8 vs. 19.0; tables 1 and 2). The 1947 kill estimates for these posts are conservative as they are based on spring kill data only, the fall kill being considered negligible at that time. The 1954 data indicate that the fall kill at these two coastal posts is about 20% of the total annual kill. If the 1946 fall kills for these posts are assumed to have constituted 20 per cent of the annual kill, the total annual average kill per Indian in 1946-47 can be computed and the average annual kill for 1953-54 and 1946-47 seasons compared: Ft. Severn: 19.5 vs. 23.8; Weenusk: 26.8 vs. 21.3.

Band recoveries have indicated the main east and west range of the Mississippi Valley Flyway geese in Ontario can be most satisfactorily described as including that sector of the Province lying between 81° and 92° Longitude. Making allowance for areas within this range not sampled, the total kill of Mississippi Valley Flyway geese in Ontario is calculated to be around 8,400 birds. Whatever deficiencies our findings may possess, the data presented in table 2 constitute probably the most accurate appraisal that has been made of a waterfowl kill by the natives of a wilderness area. Considering the fact that data on the kill by the Indians of the inland posts were not available for the 1947 study, it would appear that despite a great increase in the numbers of Canada geese available to them, the Indians did not appreciably increase their kill in 1954.

What explanation can be given to the apparent stability of the Indian kill? The only reasoning that can be given at present is as follows: The earlier flights of geese arrive in

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the north while the rivers and lakes are still frozen, probably following the rivers as flight lanes to a great extent. The Indians camped near the rivers and lakes, awaiting the breakup, hunt the geese from blinds set out on the river ice and probably thereby intercept the major flights. However, the geese are available to the Indians only between the time of arrival and the first break-up of the interior lakes. (This shift by waterfowl from the rivers to the "interior" at the onset of the first thaw was observed in the Perry River area of the Arctic.) Hence, it would seem that time is the underlying element in controlling the Indian kill; that even when the goose population is fairly low, an Indian can obtain all the geese in a day's hunting that his ability and efficiency will permit. It has been difficult to accept this theory, but it is the only explanation that can be advanced at this time.

The numbers of square miles available to the Indian hunter and the annual kill per band relative to the size of the trapping area, varies considerably. Yet, when the number of square miles per trapper and the number of square miles per goose killed per band trapping area were computed, no consistent relationship could be discerned between these data and the kill per hunter or the annual kill per band area. For these reasons, the average kill per trapper is believed to best indicate the relative availability of geese to the hunter, and hence, to offer a fairly adequate base for deducing the main migration paths of Canada geese through western Ontario. Thus the data in table 2 indicate that the heaviest flights of geese (exclusive of the actual breeding grounds) pass over the Ft. Hope, Landsdowne and Kasabonica band areas; west of these areas the frequency of migrating flocks gradually decreases. The Ft. Hope - Kasabonica flight route, which extends directly northward, is probably used by the bulk of the geese that nest in the vicinity of big bend of the Weenusk River, one of the more important muskeg production centers for geese.

Trapper kill data may not only indicate availability in terms of geese passing over a region, but may also be indicative of locally important stop-over areas where geese are more easily shot. Thus, this factor is also believed to explain the relatively high kill of migrant geese in two of the above band areas. Because the kill of geese is particularly large in the vicinity of Attawapiskat, Mameiguess, Kanuchuan, Winisk and Shibogama Lakes, they are believed to be particularly attractive to migrating geese. Although all of these lakes would be partly ice covered at the time of migration, their highly dendritic conformation and numerous islands would offer greater shelter from the wind than the large open lakes to the west. They possibly also open earlier than lakes which offer an uninterrupted expanse.

... South ...

...

... South ...

... South ...

TABLE I - Number of Cree Indian hunters, average bag per hunter, and total calculated bag of Canada geese by native hunters residing in the breeding range of the Mississippi Valley goose population, 1946 and 1947.

<u>Fur Trade Post and Indian Trapping Territory</u>	<u>Total Number of Hunters</u>	<u>Number of Hunters Interviewed</u>		<u>Average Bag Per Hunter Interviewed</u>		<u>Calculated Bag Per Trapping Territory</u>	
		<u>1946</u>	<u>1947</u>	<u>1946</u>	<u>1947</u>	<u>1946</u>	<u>1947</u>
		Ogoki	16	16	16	3.0	3.6
Fort Albany (includ- ing Kapiskau and Ghost River out- posts).	100	24	67	9.5	11.1	950	1110
Attawapiskat <sup>1</sup> (including Lake River outpost and Akimiski Island)	134	28	31	13.3	15.6	1782	2090
Weenusk	33	-	31	15.0 <sup>2</sup>	19.0	495	627
Fort Severn	47	26	26	14.0	17.0	658	799
TOTAL	330	94	171	65.0	66.3	3933	4682
AVERAGE	-	-	-	13.0	13.1	-	-

1 - The bag at Attawapiskat in 1948 was 1,720 according to Dr. John Honigman, resident anthropologist at the post that year (personal communication).

2 - An estimate, based on data for later year.



TABLE II - Number of Indian trappers, average kill per trapper and calculated kills by band trapping areas.

Band Area	Trappers			Average Kill per Trapper			Total Calculated Kill
	No. In Band	Inter-viewed	Per Cent	Fall 1953	Spring 1954	Annual ('53-'54)	
Ft. Severn	37	37	100.0	3.6	15.9	19.5	722
Weenusk	41	22	53.7	5.0	21.8	26.8	1161
(Sutton Lake)	(6 <sup>+</sup> ) <sup>3</sup>	(6) <sup>3</sup>	100.0	15.7	20.0	35.7	(214) <sup>3</sup>
Shamattawa	19	14	73.7	0.0	1.1	1.1	15
Bearskin	44	35	79.5	?	1.0	1.0 <sup>+</sup>	50 <sup>+</sup>
Big Trout L.	79	60	75.9	?	1.7	1.7 <sup>+</sup>	150 <sup>+</sup>
Kasabonica	33	23	69.7	2.1	3.6	5.7	188
Sachigo	46	14	30.4	0.0	2.0	2.0	92
Round Lake	50 <sup>+</sup>	36	72.0	?	1.7	1.7 <sup>+</sup>	85 <sup>+</sup>
Big Beaverhouse	52	41	78.8	0.0	1.4	1.4	73
Landsdowne	106	77	72.6	1.2	4.3	5.5	583
Pickle Lake	65	32	49.2	0.0	3.8	3.8	247
Ft. Hope	29	23	79.3	0.3	5.3	5.6	163
Osnaburgh	81	69	85.2	0.0	2.5	2.5	224
Island Lake <sup>1</sup>	(86)	(73)	84.9	0.0	0.4	0.4	-
L. Grand Rapids <sup>1</sup>	(34)	(11)	32.4	0.0	0.0	0.0	-
Attawapiskat <sup>2</sup>	134 <sup>+</sup>	-	-	-	-	-	2926 <sup>2</sup>
Ft. Albany <sup>2</sup>	100 <sup>+</sup>	-	-	-	-	-	1144 <sup>2</sup>
Ogoki	16	-	-	-	-	-	60 <sup>2</sup>
Other flyway areas	-	-	-	-	-	-	500
<b>TOTAL</b>	<b>932</b>	<b>483</b>					<b>8383</b>

1 - Band areas considered to be west of the normal migration routes of the Mississippi Valley Canada geese; data therefore not included in totals.

2 - Annual kill estimates interpolated from 1947 and 1954 data for Ft. Severn and Weenusk.

3 - Totals are presumably included in Attawapiskat data.

TABLE II - Number of Indian Trappers and Trapping Areas  
 Calculated from the 1900 Census

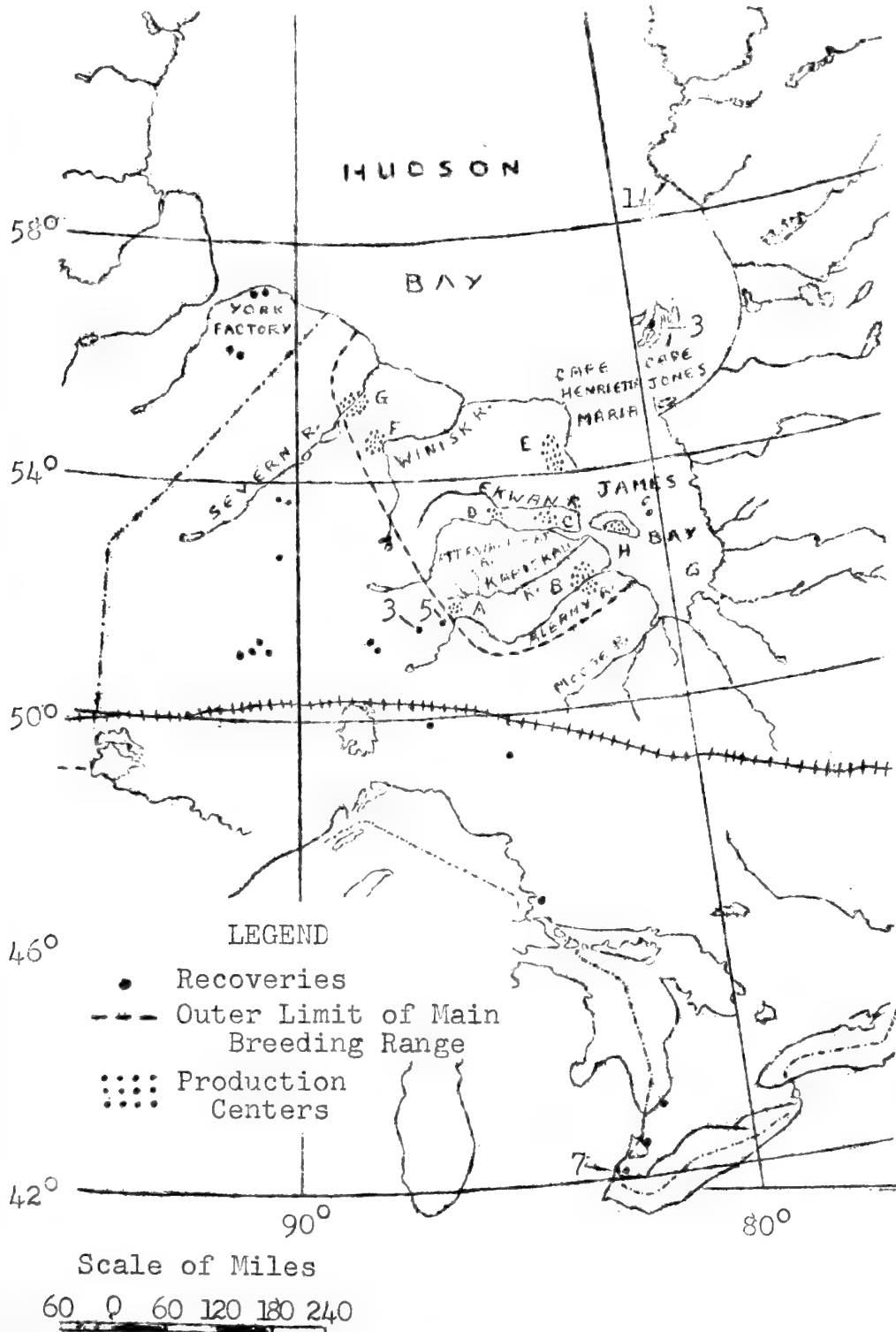
Band Area	Total		In Interior		Total
	Trappers	Kills	Trappers	Kills	
St. Severn	37	10	37	10	37
Wenusk	10	10	10	10	10
(Boston Lake)	10	10	10	10	10
Chamattawa	10	10	10	10	10
Beaskin	10	10	10	10	10
Big Trout L.	10	10	10	10	10
Kassonice	10	10	10	10	10
St. Ignace	10	10	10	10	10
Round Lake	10	10	10	10	10
Big Beaverhouse	10	10	10	10	10
Landdowne	10	10	10	10	10
Pickle Lake	10	10	10	10	10
St. Hope	10	10	10	10	10
Canaburgh	10	10	10	10	10
Island Lake	10	10	10	10	10
J. Grand Rapids	10	10	10	10	10
Atchawitagan	10	10	10	10	10
St. Albans	10	10	10	10	10
Ogoki	10	10	10	10	10
Other flyway areas	-	-	-	-	-
<b>TOTAL</b>	<b>372</b>	<b>100</b>	<b>372</b>	<b>100</b>	<b>372</b>

1 - Band areas considered to be within the limits of the Mississippi Valley Game Preserve are included in totals.

2 - Annual kill estimates for interior areas are based on the 1900 Census.

3 - Totals are primarily included in the 1900 Census.

FIGURE I - Location of production centers, limits of the main range of the Mississippi Valley geese, and located recoveries in Canada, 1941-1947, of Canada geese banded at the Horseshoe Lake Game Refuge. Within the main breeding range 217 band recoveries have been made. (Not shown are one recovery from Warren, Manitoba, and one from McLean, Saskatchewan.)



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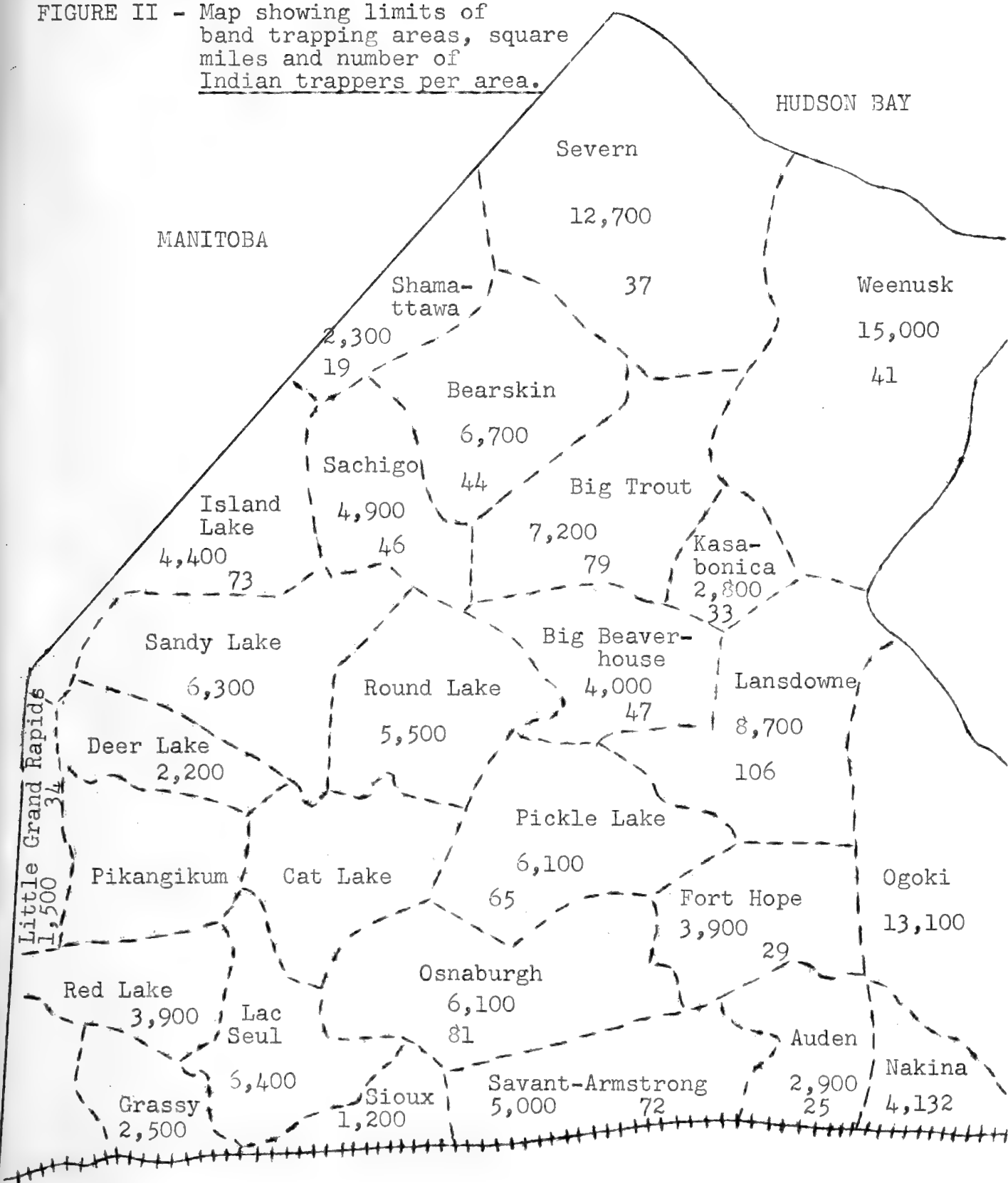
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FIGURE II - Map showing limits of band trapping areas, square miles and number of Indian trappers per area.



Patricia West

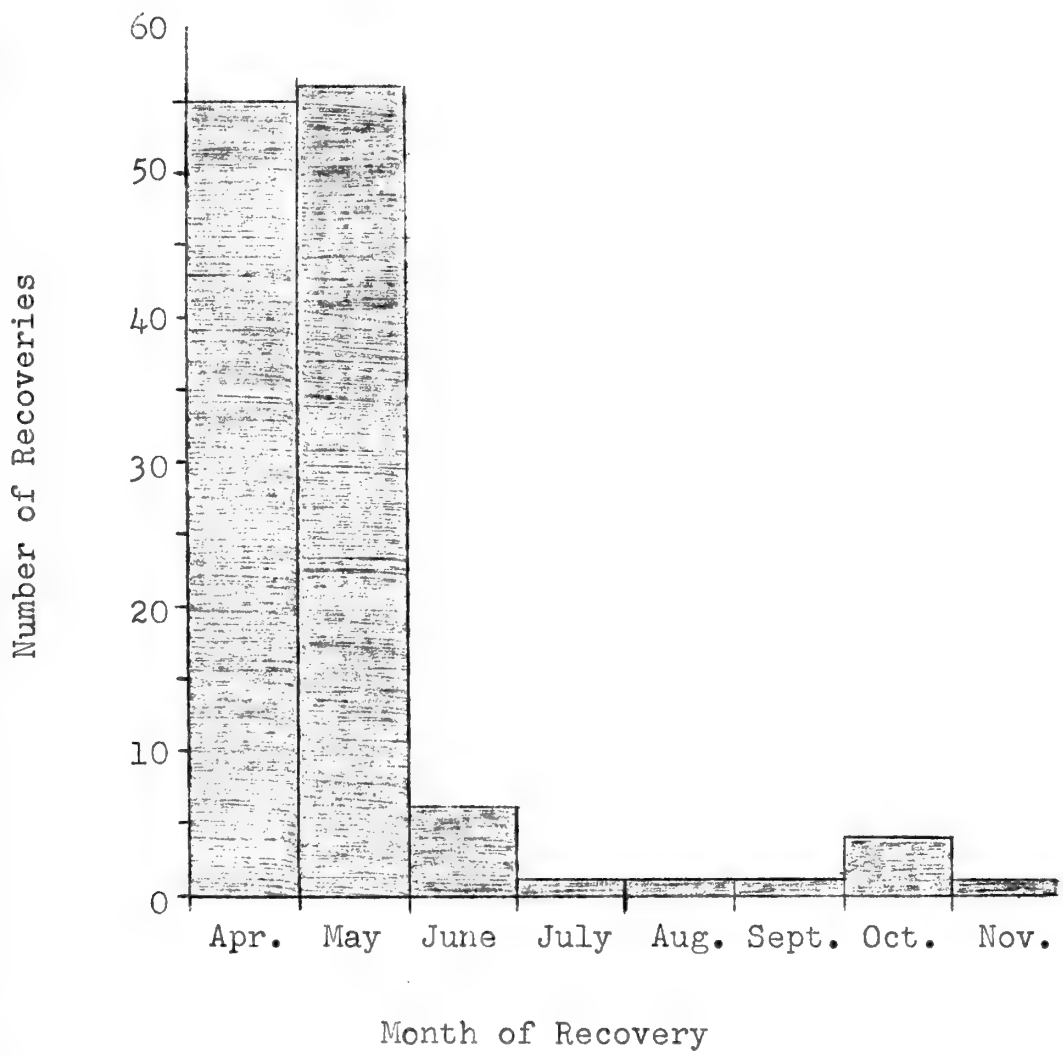
Patricia Central

Band Trapping Areas - Northwestern Ontario

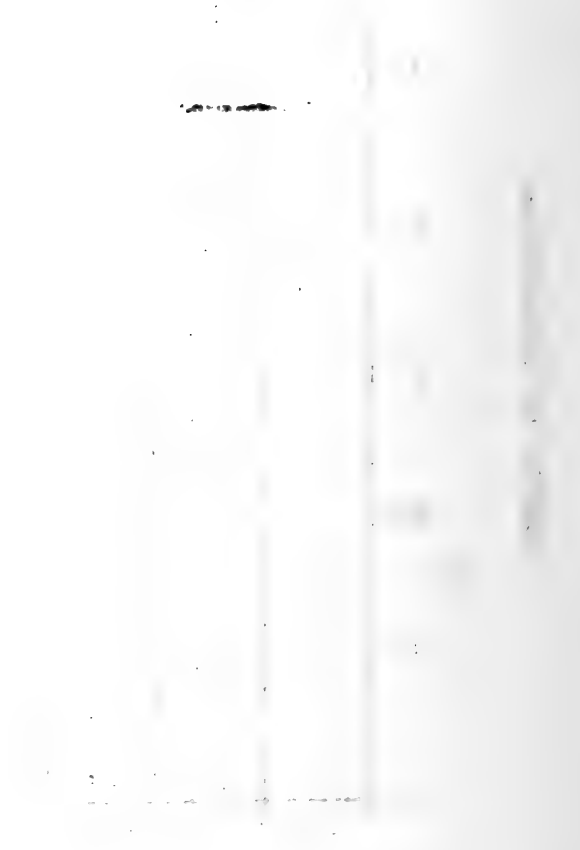


FIGURE III - Time of kill of Canada geese by Indians on the breeding grounds, as shown by recovery records, 1941-1947, of geese banded at the Horseshoe Lake Game Refuge.

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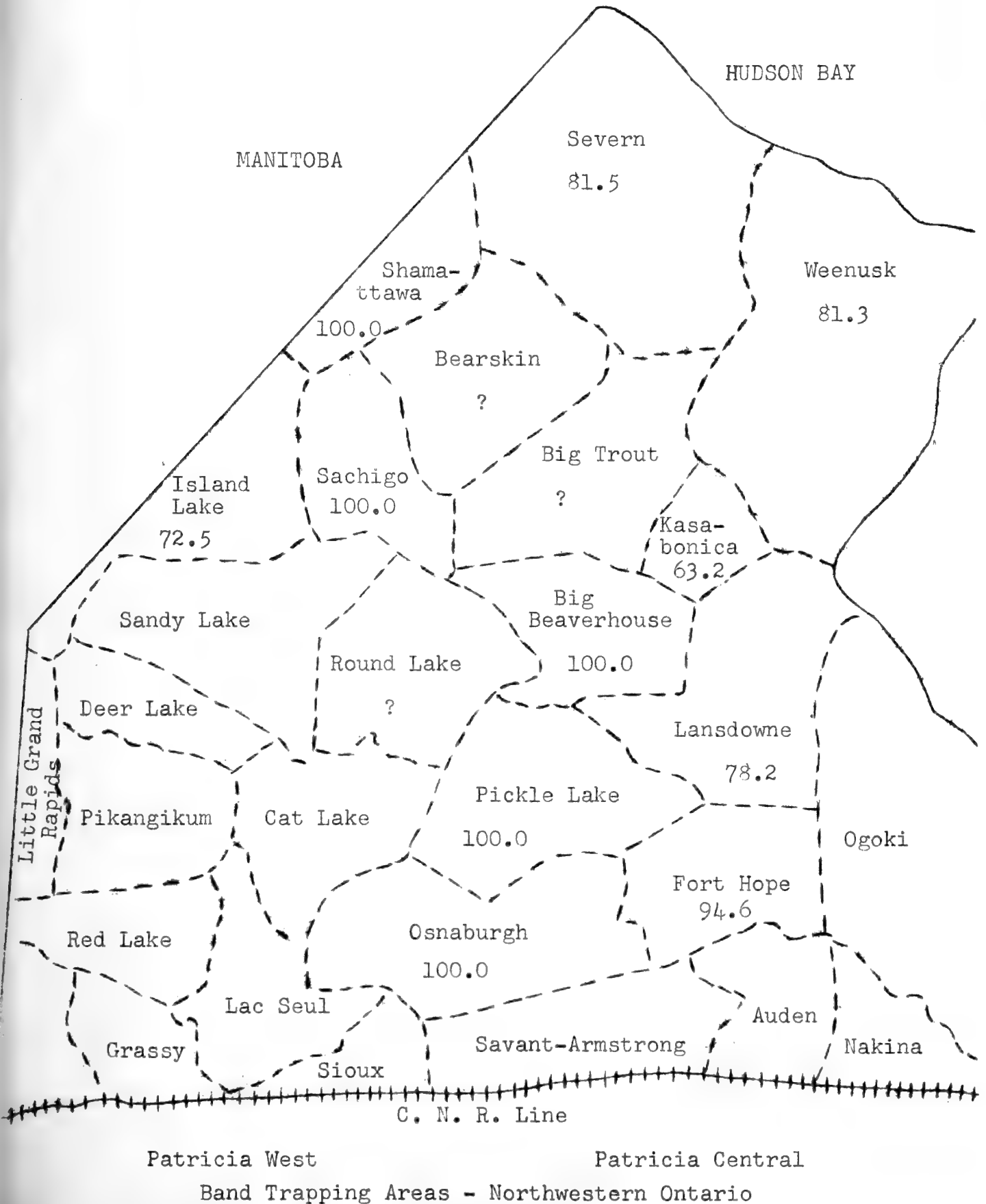


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FIGURE IV - Spring kill of Canada geese expressed as per cent of the total annual kill per band area.





## WATERFOWL SURVEY IN NORTHWESTERN ONTARIO, 1950.

by  
Lester W. Gray

### Introduction

The primary objective of this survey by the Department of Lands and Forests was to locate a suitable area to set up a banding station. No attempt was made to run a complete census, or to take representative samples, and the survey was made by one man working alone. Two regions were picked, and the water within these areas intensively studied to locate breeding concentrations. It was felt that the places used by comparatively large numbers of breeding birds would also be used by the fall flights, as good waterfowl habitat in this part of the province is limited.

### Location of Areas

The areas covered by the study were the District of Thunder Bay, and the District of Rainy River.

Ten water areas were examined in the Thunder Bay District, from Cranberry Bay on Lake Superior at the eastern extreme to Whitefish Lake on the west. About 200 miles of aerial reconnaissance was also flown. Of all areas examined only Whitefish Lake was found to be favourable waterfowl habitat, and this was the only place where breeding birds were found in numbers. Most of the lakes were barren of marsh, and rimmed by rocky or wooded shoreline. It was thought unwise to attempt banding on Whitefish Lake as it was a favourite shooting spot for gunners from Port Arthur and Fort William. In fact, the only place for many miles where duck shooting could be done.

In the District of Rainy River two areas were examined. One consisting of part of the shoreline of Caliper Lake and its tributary Log River, and the other a series of artificial ponds on the private game reserve of Mr. J. A. Mathieu. The former area lies on the Kenora - Fort Frances highway, about four miles south of Nestor Falls. The latter, on the Rainy River, about twelve miles west of Fort Frances.

The better areas were checked, either by shoreline cruising in a canoe, or by walking. Reconnaissance work was done by jeep and aircraft.

### Weather and Water Conditions

The spring and early summer was cold and wet, and rivers and lakes were badly flooded. Rainy River was well above normal as late as the middle of July. Conditions were thus far from ideal for breeding waterfowl.

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The first of the year was a very dry one, and the water in the ponds was very low. The water in the ponds was very low, and the water in the ponds was very low. The water in the ponds was very low, and the water in the ponds was very low.

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Hatching Success and Brood Survival

Area	Species	Class I		Class II		Class III	
		No. Broods	Ducklings Per Brood	No. Broods	Ducklings Per Brood	No. Broods	Ducklings Per Brood
Whitefish Lake	Mallard	2	8.0	-	-	-	-
	Blacks	2	9.5	-	-	-	-
	Ring-neck	1	8.0*	-	-	-	-
	Am. Golden-eye	1	9.0*	-	-	-	-
	Unidentified	2	8.0	-	-	-	-
Caliper Lake - Log River	Am. Golden-eye	2	4.5	-	-	-	-
	B. W. Teal	1	9.0	-	-	-	-
	Unidentified	2	6.0	-	-	-	-
J.A. Mathieu Reserve	Mallard	2	4.5	3	5.7	2	5.0
	B. W. Teal	9	6.8	7	6.0	4	6.2
	Unidentified	1	10.0	3	4.3	1	6.0

\* Ring-neck brood reduced to 6 by Pike while under observation. Golden-eye brood of 9 had only 2 when revisited the same day. One of the remaining 2 taken by Pike while under observation.

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Predation by Northern Pike on diving duck broods in Whitefish Lake is thought to be extremely high. Blacks and Mallards appear to fare better, due to the fact that they remain in the thick, weedy cover along the shore and seldom venture out on the open water where the other species were commonly found. They were thus relatively inaccessible to the predatory fish.

The Caliper Lake area was cruised only once, so little information was obtained regarding brood survival.

On the J. A. Mathieu section, brood survival appeared to be excellent. No large fish were present in these waters.

Species Composition of the Breeding Population

<u>Area</u>	<u>Species</u>	<u>Total Population</u>	<u>Percent</u>
Whitefish Lake	Blacks	78	41
	Mallard	62	33
	Lesser Scaup	41	22
	Am. Golden-eye	3	2
	Ring-neck	2	1
	B. W. Teal	2	1
Caliper Lake - Log River	Am. Golden-eye	23	62
	Lesser Scaup	11	30
	Ring-neck	1	2
	Canvas-back	1	2
	Mallard	1	2
	B. W. Teal	1	2
Mathieu Reserve *	Mallard	17	47
	B. W. Teal	15	42
	Pintail	4	11

\* Most of the birds tallied on this area were females with broods.

Banding Operations

Traps were operated on the Mathieu Reserve from August 22 until October 7. The following birds were banded: Mallard - 193, Blacks - 14, B. W. Teal - 4, G. W. Teal - 9, Pintail - 1, Baldpate - 1 Pied-billed Grebe - 1.

Some birds were lost due to predation by Horned Owls. Three of these were caught. There was also some evidence to point to the Marsh Hawk as a predator on ducks in this area.

The first part of the report deals with the general situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved.

The second part of the report is devoted to a detailed description of the various projects and the results achieved. It is followed by a summary of the work done during the year.

The third part of the report is devoted to a detailed description of the various projects and the results achieved. It is followed by a summary of the work done during the year.

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The fourteenth part of the report is devoted to a detailed description of the various projects and the results achieved. It is followed by a summary of the work done during the year.

The fifteenth part of the report is devoted to a detailed description of the various projects and the results achieved. It is followed by a summary of the work done during the year.

Conclusions

Although this part of the province is not considered a good duck producer at best, it is felt that this year was below average. It is also felt that the extremely wet weather and large amount of water available had an adverse effect on trapping, by allowing the birds to scatter over a wider area. Thus the density of birds in the trapping area was less than normal.

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WATERFOWL SHOOTING AROUND A SMALL SANCTUARY

by  
D. N. Neill

Location

Lot 10, Concession I, Yarmouth Township, Elgin County known as the Jones Sanctuary at Dexter.

Description

This sanctuary comprises a "long" hundred acre farm extending from the north shore of Lake Erie north to the first concession road. A small pond, surrounded by trees and shrubs is situated at the north end of the farm, adjacent to the farm buildings. Waterfowl are fed in a near-by field. At the peak of migration approximately 2,000 geese and several hundred ducks find refuge on the farm. A banding program was carried on for a number of years. Twenty to twenty-five geese and several species of ducks raise broods each summer. The Department of Lands and Forests reimburses the farmer for some of the cost of the supplied food - corn-on-the-cob.

No shooting is permitted within one-half mile of the sanctuary.

Flight Pattern of the Birds

Almost without exception flight to and from the feeding ground is over the centre of the protected area, directly to the lake. Occasionally, the birds are startled over the water and return to land in disorder, outside the sanctuary area. This puts them within range of the hunters, who are usually concentrated at the top of the steep bank of the lake at the edge of the refuge, during early morning or late evening.

Were it not for poor marksmanship, the bag would be much greater. The element of surprise and confusion apparently affects both birds and hunters alike.

The following statistics are the results of the shooting during the 1955 open season:

Statistics based on checking hunters at the Jones Sanctuary for 30 days during the open season 1955.

1st check Oct. 3, last Dec. 14th	
Possible hunting days - Oct. 1 to Dec. 15 .....	65
Number of days hunters were checked (46% of possible hunting days) .....	30
Total Number of hunters (in 30 days) .....	515

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Average number of hunters per day (for 30 days) .....	17
Total hours hunted (30 days) .....	136
Average hours hunted per day .....	4.5
Number of Geese shot .....	25
Number of Ducks shot, Mallard ..... 27	37
Number of Ducks shot, Black ..... 10	37
Total Birds (Approx. 2 birds/day) .....	62
Hunting time per hunter (30 days) .....	16 min.
Birds/hunter (30 days) .....	0.12
Birds per hunter hour (30 days) .....	0.46
No. of days with no birds shot .....	16
Maximum bag - Nov. 9-24 hunters in 6 man hours shot	
Mallards .....	3
Blacks .....	3
Canada Geese .....	3
Total .....	9 birds
Birds/hour .....	1.5
Birds/hunter .....	.38

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WATERFOWL CAUGHT IN MUSKRAT TRAPS,  
KEMPTVILLE DISTRICT, 1955 - 1956

by  
G. C. Myers and J. B. Dawson

Trapper questionnaires for 1955 and 1956 were analyzed and the following data summarized by Conservation Officer Patrol Areas and totalled for the District.

1. Total number of trappers (including residents and farmers)
2. Number of questionnaires completed.
3. Percent of completed questionnaires returned.
4. Total number of ducks caught.
5. Number of muskrats caught (from completed returns).
6. Muskrats per duck caught.
7. Number of ducks caught, by species.

Since it is thought that many birds die after release from traps, data concerning birds killed and those released were not used in this report.

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<u>Patrol Area</u>	<u>No. of Trappers</u>	<u>Forms Completed</u>	<u>% Return</u>	<u>No. of Ducks Caught</u>	<u>No. of Muskrats Caught</u>	<u>Muskrats Per Duck</u>
1	109	79	72	39	5,509	141
2	123	45	36 *	14	2,661	190
3	91	31	34 *	6	1,745	291
4	111	50	45	43	4,686	109
5	91	65	71	66	4,313	65
6	125	121	96	114	7,029	61
7	151	98	64	157	6,121	39
8	248	156	62	323	12,689	39
9	251	204	81	311	13,205	42
District Total	1,300	849	70 (ave.)	1,073	57,958	108 (ave.)

\* Indicates low return from French-speaking areas.

1954-1955

1956-1957

1958-1959

1960-1961

1962-1963

1964-1965

1966-1967

1968-1969

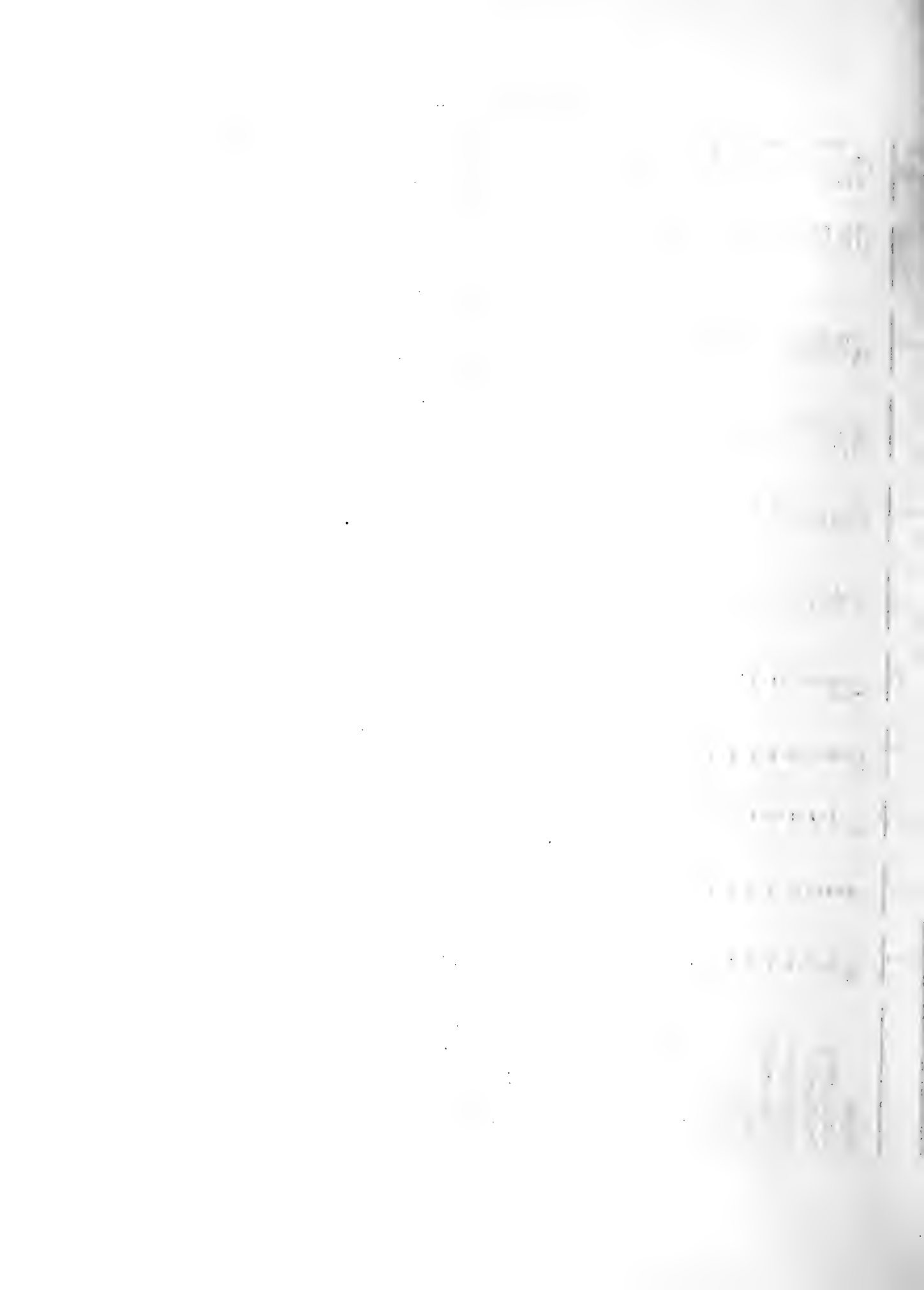
PATROL AREA

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>Total</u>	<u>%</u>
Black	26	4	6	21	30	69	73	168	124	521	49.4
Wood duck	6	1	-	2	15	13	44	108	89	278	25.9
Mallard	3	1	-	8	5	13	10	13	29	82	7.6
Merganser	-	2	-	2	9	4	6	9	28	60	5.6
Golden-eye	-	-	-	-	-	-	-	2	1	3	.3
Scaup	-	-	-	-	-	3	-	2	16	21	1.8
Teal	-	-	-	-	2	6	2	13	21	44	4.2
Redhead	-	-	-	-	-	-	-	2	-	2	.2
Unidentified	4	6	-	10	5	6	22	6	3	62	5.6
Total	39	14	6	43	66	114	157	323	311	1,073	100
Per Cent	3.3	1.3	.6	4.0	6.2	10.0	14.6	30.1	30.0		100

1 9 5 6

<u>Patrol Area</u>	<u>No. of Trappers</u>	<u>Forms Completed</u>	<u>Percent Return</u>	<u>No. of Ducks Caught</u>	<u>No. of Muskrats Caught</u>	<u>Muskrats Per Duck</u>
1	105	101	96	49	4,660	95
2	131	44	33 *	14	1,661	118
3	89	33	37 *	12	812	68
4	108	91	84	21	3,868	184
5	69	59	85	29	1,691	57
6	84	76	90	70	3,923	56
7	86	41	47	128	2,406	19
8	203	176	86	206	6,476	31
9	223	200	89	170	7,510	44
District Total	1,098	821	72 (ave.)	699	33,007	74 (ave.)

\* Indicates low return from French-speaking areas.



<u>P A T R O L</u>	<u>A R E A</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>Total</u>	<u>%</u>
Black	duck	15	6	12	14	9	25	55	118	65	319	45.6
Wood	duck	2	2	-	1	10	5	55	48	48	171	24.4
Mallard		-	4	-	1	3	16	5	8	7	44	6.2
Merganser		-	-	-	3	4	2	8	7	22	46	6.5
Golden-eye		-	-	-	-	-	-	-	1	1	2	.3
Scaup		-	-	-	-	-	-	3	3	9	15	2.1
Teal		1	-	-	1	1	9	1	6	11	30	4.2
Redhead		-	-	-	-	-	1	-	-	-	1	.2
Unidentified		31	2	-	1	2	12	1	15	7	71	10.1
Total		49	14	12	21	29	70	128	206	170	699	100
Per Cent		7.0	2.0	1.7	3.0	4.2	10.0	18.2	29.5	24.3		100

АВИАЦИОННАЯ

№ п/п	Имя	Фамилия	Год рождения	Служба	Специальность	Стаж	Звание	Степень
1	Иванов	Иван	1925	Лётчик	Пилот	10 лет	Младший лейтенант	Инженер
2	Петров	Петр	1928	Лётчик	Пилот	8 лет	Младший лейтенант	Инженер
3	Сидоров	Сидор	1930	Лётчик	Пилот	6 лет	Младший лейтенант	Инженер
4	Климов	Климов	1932	Лётчик	Пилот	4 лет	Младший лейтенант	Инженер
5	Васильев	Васильев	1935	Лётчик	Пилот	2 лет	Младший лейтенант	Инженер
6	Смирнов	Смирнов	1938	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
7	Морозов	Морозов	1940	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
8	Попов	Попов	1942	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
9	Соколов	Соколов	1945	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
10	Кузнецов	Кузнецов	1948	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
11	Лебедев	Лебедев	1950	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
12	Зайцев	Зайцев	1952	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
13	Иванов	Иванов	1955	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
14	Петров	Петров	1958	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
15	Сидоров	Сидоров	1960	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
16	Климов	Климов	1962	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
17	Васильев	Васильев	1965	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
18	Смирнов	Смирнов	1968	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
19	Морозов	Морозов	1970	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
20	Попов	Попов	1972	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
21	Соколов	Соколов	1975	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
22	Кузнецов	Кузнецов	1978	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
23	Лебедев	Лебедев	1980	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
24	Зайцев	Зайцев	1982	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
25	Иванов	Иванов	1985	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
26	Петров	Петров	1988	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
27	Сидоров	Сидоров	1990	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
28	Климов	Климов	1992	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
29	Васильев	Васильев	1995	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
30	Смирнов	Смирнов	1998	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
31	Морозов	Морозов	2000	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
32	Попов	Попов	2002	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
33	Соколов	Соколов	2005	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
34	Кузнецов	Кузнецов	2008	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
35	Лебедев	Лебедев	2010	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
36	Зайцев	Зайцев	2012	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
37	Иванов	Иванов	2015	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
38	Петров	Петров	2018	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
39	Сидоров	Сидоров	2020	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер
40	Климов	Климов	2022	Лётчик	Пилот	0 лет	Младший лейтенант	Инженер



Trappers returning completed questionnaires caught a total of 1,073 ducks in 1955 and 699 in 1956.

If those returning questionnaires constitute a good sample of all district trappers, then the above totals can be corrected, for all trappers, to read 1,536 and 970 for 1955 and 1956, respectively.

The sizeable difference in total ducks caught and in muskrats per duck caught between the two years is thought to be caused by the very poor trapping conditions prevailing in 1956.

Except for the above differences, data for the two years show a striking similarity.

The above tables indicate that:

- Questionnaires were completed by 70% of all trappers in 1955 and by 72% in 1956.
- Muskrats caught by trappers returning completed questionnaires represented 73% of all muskrats caught in 1955 and 71% in 1956.
- Black Ducks and Wood Ducks constituted over 70% of all ducks caught each year.
- The percentage of each species caught varied very little from year to year.
- The percentage of ducks caught in each patrol area also varied very little from year to year.

The attached map shows the percentage distribution of ducks caught in the various patrol areas. It can be seen that the greatest number of ducks are caught in the western part of the district. Ducks caught in patrol areas 6 - 9 constituted 84% of all ducks caught in 1955 and 82% in 1956. This percentage distribution agrees very closely with the percentage of muskrats taken in each patrol area and is directly correlated with the amount of aquatic habitat available.

Trappers in patrol areas 2 and 3 are predominately French-speaking and the return of completed trapper questionnaires was very poor from these areas.

To improve this situation, questionnaires in French may be distributed to these trappers in the future.

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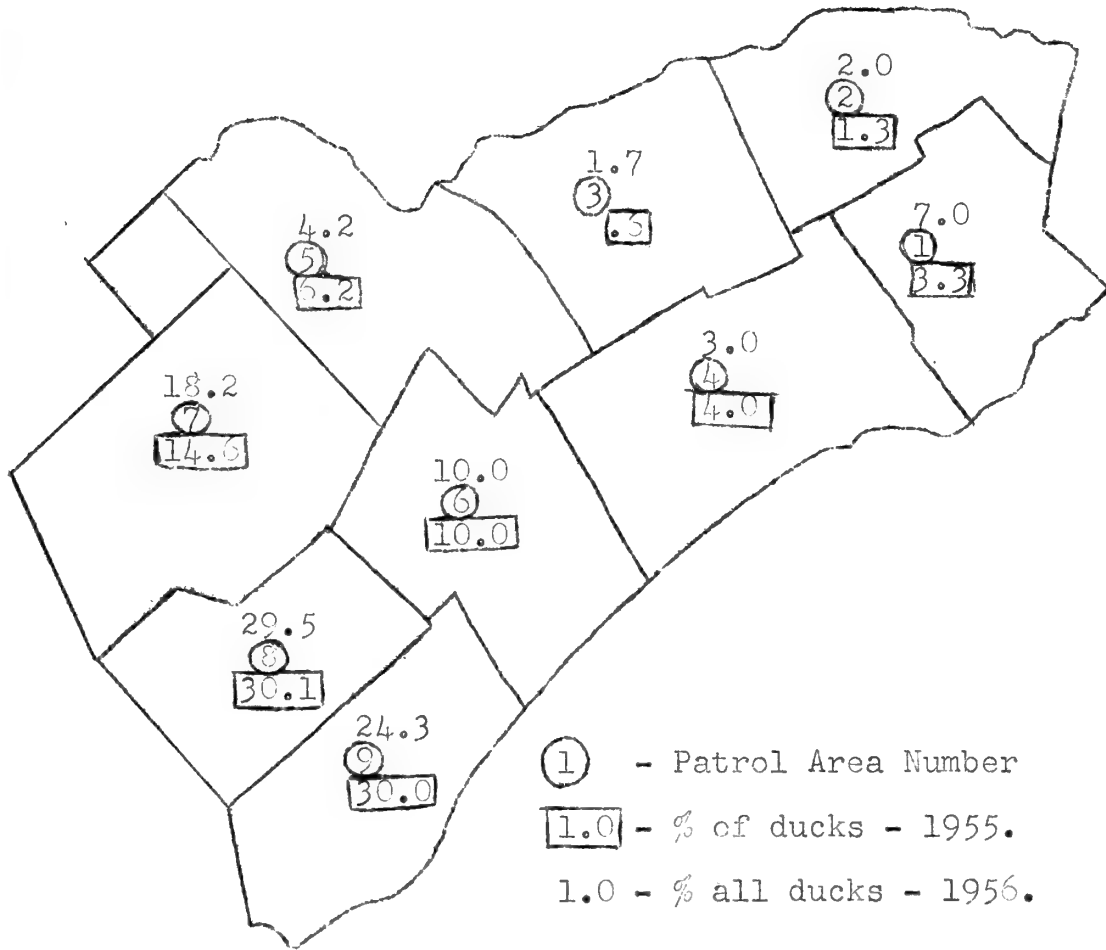
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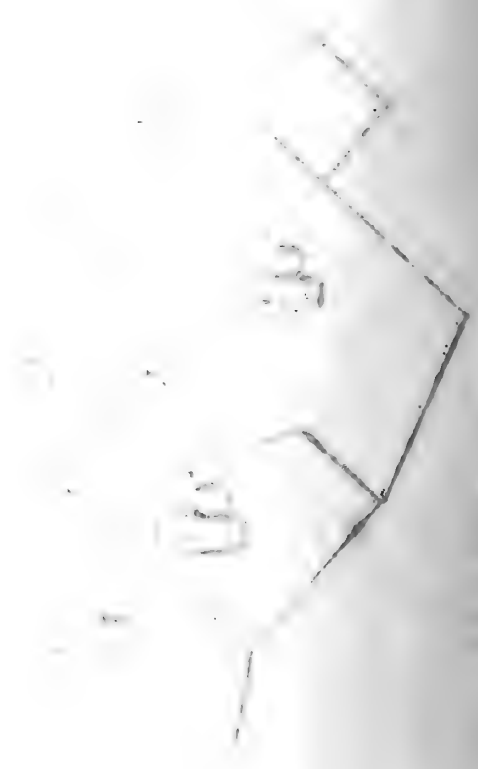
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KEMPTVILLE DISTRICT

Waterfowl Caught in Muskrat Traps, 1955 and 1956.



Map shows percent of total ducks caught by patrol areas, 1955 and 1956.



1954  
1955

LUTHER MARSH GAME BAG CENSUS REPORT

OCTOBER 6TH., 1956.

by  
J. F. Gage

Luther Marsh is situated on the county line between the Counties of Wellington and Dufferin in West and East Luther Townships. The area was purchased by the Grand River Commission. The swamp was created when a flood control dam was constructed providing some three thousand (3,000) acres of inundated swamp land. Its main purpose is to control floods. The use of this area by ducks has probably given the project more publicity than has flood control. Each year, particularly on opening day, hundreds of hunters flock to the Luther Marsh, as it is popularly known, to participate in the duck hunt.

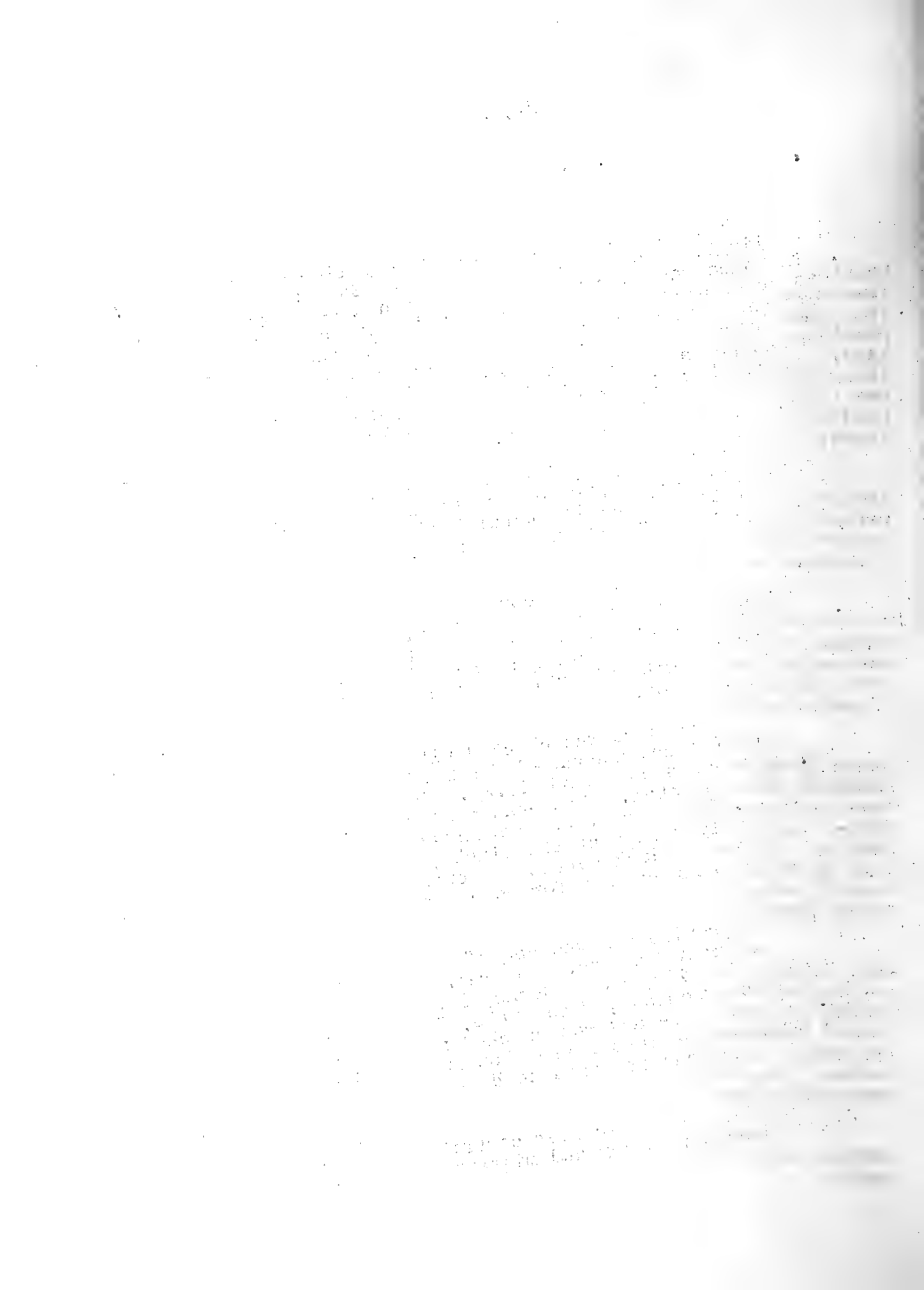
This year seven entry points to the marsh were established as checking points. Department of Lands and Forests personnel with eight Ontario Agricultural College students were present to check the duck harvest and to maintain duck hunting regulations.

Special effort was made to contact each hunter before he entered the marsh, informing him of the legal opening and closing time. The time taken was very worthwhile since there were only five infractions of shooting before 12:00 o'clock noon. Five hunters were charged with violations of the hunting regulations after the evening shoot.

A total of 589 hunters was checked with 613 ducks. Black Ducks were plentiful and accounted for 26.5% of the total. Mallards were a very close second with 25.2%. These two species make up about half of the total. Green-winged Teal 16.3% and Blue-winged Teal at 10.4% make a strong percentage for the Teal family. It can be readily seen that the Blacks, Mallards and Teal provide the bulk of the duck harvest on opening day at the Luther Marsh. Their numbers account for more than 75% of the total ducks shot.

Other species provide a mixed bag of lesser importance but of great interest to many hunters. In order of occurrence in the bag they were: Pintails, Ruddy Ducks, Bluebills, Baldpates, Ring-necked Ducks, Redheads, Wood Ducks, Gadwalls and Hooded Mergansers. One Canvas-back was checked and 35 Coots or Mud Hens. A great many of the latter are shot in mistake for ducks. They are legal game and are said to be good eating when properly prepared.

Some species will make a greater contribution to the harvest as the weather becomes colder and migrant ducks work south.



Luther Marsh Game Bag Census Report, Oct. 6th., 1956.

<u>Species</u>	<u>♂</u>	<u>♀</u>	<u>Not Sexed</u>	<u>Total</u>	<u>Percent</u>
Black Duck	-	-	163	163	26.5
Mallard	58	61	36	155	25.2
Green-winged Teal	-	-	100	100	16.3
Blue-winged Teal	11	15	38	64	10.4
Pintail	3	10	9	22	3.5
Ruddy Duck	6	4	3	13	2.1
Bluebill	0	7	5	12	1.9
Baldpate	4	1	5	10	1.6
Ring-neck	0	6	3	9	1.4
Redhead	2	3	1	6	.9
Wood Duck	0	1	4	5	.8
Gadwall	3	2	0	5	.8
Hooded Merganser	-	-	3	3	.4
Canvas-back	1	-	-	1	.1
Coots	-	-	35	35	5.7
				<u>613</u>	

Hunters Checked .....	589
Ducks Checked .....	613
Ducks Per Hunter .....	1.04
Ducks Lost .....	182
Ducks Found .....	8
Parties Using Dogs .....	17
Parties Not Using Dogs .....	193

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MOURNING DOVE ROAD COUNTS

by  
L. J. Stock

The following is a summary of the Mourning Dove Road Counts carried out during the month of September 1956, in the Lake Erie District, by members of the field staff and District Office personnel.

County	No. of Doves Seen				Miles	Birds/Mile
	Flocks of 3 or More	Pairs	Singles	Total		
Welland	123	34	37	194	951	0.20
Haldimand	73	22	27	122	393	0.31
Haldimand) Norfolk)	1,516	18	42	1,576	881	1.79
Norfolk	37	18	20	75	639	0.11
Elgin	33	20	71	124	324	0.38
Elgin ) Middlesex)	3	2	9	14	347	0.04
Middlesex ) Caradoc Twp.)		22	30	52	45	1.16
Elgin-Kent	6	4	12	22	38	0.58
Kent (Dover Twp)	7	8	12	27	85	0.32
Kent		14	6	20	47	0.43
Lambton	119	54	12	185	1,044	0.18
Essex	935	188	95	1,218	330	3.69
Totals	2,852	404	373	3,629	5,124	0.705

202 prs.

Percent of birds in flocks - 79

Largest Flock Norfolk County - Townsend Township - 1,000.

Highest Count per mile - Essex - 3.69.

# MEMORANDUM

DATE: 10/26/57  
TO: SAC, NEW YORK  
FROM: SAC, PHOENIX

Re: [Illegible] (NY File # [Illegible])  
[Illegible] (PHOENIX File # [Illegible])

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REPORT ON 1956 TRIP TO THE SLATE ISLANDS

by  
H. G. Cumming

Purpose: To carry out the annual check on the caribou population of the Slate Islands.

Members of Party: J. B. McKenzie, Conservation Officer,  
H. G. Cumming, Biologist.

Itinerary:

- July 9 Travelled from Geraldton to the Slate Islands via Pays Plat. Set up camp opposite McCall Island near a known caribou crossing.
- July 10 Walked to Silver Lake and past two beaver ponds to Horace Cove, thence to Lawrence Bay and camp.
- July 11 Morning lost due to accident. Spent afternoon trying to observe caribou from canoe.
- July 12 Followed old trail to Sunday Harbour. Returned by boat.
- July 13 Unable to work due to rain. Attempted to see caribou along the shore from canoe.
- July 14 Walked to Mud Lake, thence to northeast corner of Patterson Island, back to old lumber camp on McGreevy Harbour, to Mud Lake again and returned to camp.
- July 15 Collected plants by old lumber camp. Walked to Silver Lake and back.
- July 16 Returned to Pays Plat.

Observations of Caribou:

Caribou seen or heard

July 9th, 1956: A caribou was heard, then sighted on McCall Island across from camp. It walked along the shore, stopped several times to put its nose in the water. It turned and licked itself, straightened, then licked again. Antlers were about 4 inches long and in the velvet. It walked on a short distance, then broke into a trot through the shallow water along the shore. It was very dark, greyish rather than brownish. There was a faint white collar.

16.55: The caribou disappeared around a small point of the shore, but reappeared 30 seconds later. It walked on for a short distance, stopped to look across the water, walked on and paused apparently



to browse some low growing plants among the bushes along the shore. After browsing for perhaps 30 seconds, it walked on (east) and, with one more pause to look across the lake, disappeared around the point at 17.02 hours.

July 10th, 16.30: A caribou was sighted at the end of Lawrence Bay. When followed it would run only a short distance and then stop. It was sighted three different times before it disappeared altogether. After that, although we hurried forward, we could see no further sign of it. No antlers were visible.

July 11th, 14.45: A caribou swam up to shore by the camp while the aircraft was there and four people were sitting around talking. It swam with head high and rump out of the water. When it reached shore, about 30 feet from camp, it stood there for a short while shaking itself intermittently, but it left before a picture could be taken. It was brown with a very dark head. No antlers were visible.

July 12th, 13.00: A caribou was heard near a small lake east of Sunday Harbour. It was seen by McKenzie who surprised it near the lake. He watched for a moment until it walked into the bush, at which time he went down the trail past it, and attempted to drive it back. He saw it once more. It was fairly light in colour. No antlers were seen.

13.15: While we were eating lunch, a caribou came up the trail and went off into the bush just before reaching our position. This was probably the same caribou as the one just described.

13.38: While proceeding toward Sunday Harbour, a caribou was sighted in the bush. It was dark brown with about 6 inch antlers. When we crouched down and made chirping noises, it turned and came back toward us in an attempt to discover the source of the noise.

13.45: A caribou was seen at some distance through the trees. It just stood facing away from us for a moment, then wandered off paying no attention to our chirping. It was a lighter brown in colour and had antlers with forked knobs about 18 inches long. This was only a short distance from Sunday Harbour.

July 14th, 12.15: A caribou was sighted near Mud Lake. It came back three times when chirped at, enabling the taking of two pictures. It then circled and disappeared. McKenzie, who was some distance off, also glimpsed a caribou through the trees. It was believed to be the same one.

July 15th, 13.15: A caribou was sighted swimming toward the shore near camp from the direction of McCall Island. It landed on the shore about 50 feet east of the camp and walked straight into the woods. It was dark brown and no antlers were noticed.

16.10: A caribou was heard near the trail to Silver Lake. It was not seen.

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16.45: A caribou was heard near Silver Lake. It sounded as if it were knocking its antlers on trees. It was glimpsed a couple of times by McKenzie but no details could be discerned.

### Caribou Tracks

July 10th, 09.30: Fresh caribou tracks and droppings were seen at the west end of McGreevy Harbour. The animal had been heading northeast around the end of the bay.

16.38: Caribou calf tracks were found in the sand on the east shore of Lawrence Bay. They were about  $1\frac{1}{2}$  inches long.

July 12th, 14.00: Caribou calf tracks were seen near Sunday Harbour.

Many more adult caribou tracks were seen but not recorded.

### Caribou Remains

July 12th, 16.00: A bleached jaw from a caribou that was reported to have fallen off a cliff in the winter or spring of 1955, and the carcass of a caribou which apparently fell off the same cliff a few feet distant in the winter or spring of 1956 were found on the south shore of Sunday Harbour. The cliff was a bald, rounded height, directly across the point from the lighthouse. The carcass of the second animal lay where it had landed with a rib still bent over the rock on which it had broken. The animal was about 25 or 30 feet from the base of the cliff. Although there was an over-hang of several feet the distance of the carcass from the base of the cliff seemed hard to explain. It appeared that it might have been running or had jumped, for the carcass was facing directly away from the cliff and had landed feet down.

It was almost entirely decomposed, with only pieces of hide still hanging on the bones. It was related by the lighthouse keeper that the complete skeleton of the other animal had been there the previous year and that a piece of moss had been torn off the rock above where it had fallen over. The jaws of both animals were collected.

17.00: Guided by the lighthouse keeper, we located another caribou carcass on the north shore of Sunday Harbour on a gravel beach. He reported that it was well up near the bush line when he had first seen it, but that the waves had moved it to its present position about two-thirds of the way toward the water. It was slightly more decomposed than the other carcass but was also a casualty of last winter. The jaw was collected and a casual examination showed that it was a calf. This looked very much like starvation as it was found on a south facing slope at the tree line where a starving animal would come for a little additional warmth.

A left antler and a right antler from different animals were picked up by the lighthouse people and given to us. Another right antler was found on July 15th on the trail back from Silver Lake. These were all brought back to Geraldton.

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Additional Information on Caribou:

Anglers encountered during the trip were questioned concerning the numbers of caribou which they had seen. Some who had been coming to the islands for some years claimed that they were seeing considerably fewer caribou this year. Several other fishermen stated that they had been over to the islands fishing several times this year but had seen no caribou. These reports contrasted with the three observations which we made on the shore.

Some anglers reported that they saw two caribou on the shore of McCall Island on July 14th while we were away from camp. These two were the first they had seen this year.

Two watchmen for a log boom which was being held in McGreevy Harbour reported that they had seen only about one-half dozen caribou since they had taken up residence there in May.

The lighthouse keeper reported that one of the children had seen five caribou, including one calf, near the small lake just east of Sunday Harbour, a few days before our arrival. He said that each fall a large caribou came down and ate the flowers out of their garden and was quite tame. He also reported that he had found the forefoot of a young one about the same size as that of the second carcass which we found, near the base of the lighthouse cliff. His helper also found a whole carcass on the east side of the lighthouse that he did not think had fallen off any cliff. He promised to try to collect the jaw and send it to us.

Observations of Other Animals:

Beaver:

July 10th, 11.18: A mountain ash was found cut by beaver on a hill top.

11.30: A double beaver dam (one just below the other) was located at the southwest end of a small pond in the Mud Lake chain. The dams, which had apparently been built last fall, were holding water and there were fresh cuttings on them. Some of the surrounding trees had been killed by the flooding.

A short distance from the above pond was a second pond, which also had signs of beaver around it. No very fresh cuttings were found. Most of the signs were from late fall or early spring.

July 14th, 12.10: A beaver dam was found at the southwest end of what was believed to be Mud Lake. No mud was visible in the lake due to the flooding by the beaver.

Fox:

July 10th, 15.15: A fox burrow was found near a small lake in the southwestern part of Patterson Island. Two more burrows were found

July 1911

At 10:30 AM we left the camp and went to the  
southwest side of the mountain. The  
country was very dry and the  
trees had lost their leaves.

July 1911

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immediately afterward, one of which was probably leading to the same den, and the other about 50 yards away. Since there were no fresh tracks after the recent rain, it was impossible to tell whether or not they were still occupied, or how old they were.

Snowshoe Hare:

July 10th, 10.30: Snowshoe hare browse on birch was found near Silver Lake.

July 12th, 09.30: Snowshoe hare was seen by an old lumber camp on McGreevy Harbour.

July 15th, 14.00: Snowshoe hare was startled from brush surrounding the old lumber camp on McGreevy Harbour.

16.00: Young snowshoe hare was captured on the trail to Silver Lake. It was held for pictures then released. It was just nicely able to hop around on its own.

Merganser:

July 11th, 16.00: Merganser with 7 downy young was seen in Lawrence Bay.

July 13th, 18.45: A small merganser was found by itself in Lawrence Bay. An attempt was made to catch it with the canoe, but was thwarted by a gull which swooped down and, after one miss, caught the small duck by the back of the neck and flew off with it. The gull landed on a small island and swallowed the duck whole.

Many adult mergansers were seen.

Other Birds:

July 14th, 12.15: Two brown creepers landed on a tree near Mud Lake.

July 15th, 16.15: A young white-throated sparrow was seen on the trail to Silver Lake. It could fly short distances, but its tail was still short. There were many white-throated sparrows in evidence on the Slate Islands.

Mammals Missing:

The following is a list of the mammals which are present on the mainland, but for which no evidence has been found on the Slate Islands: moose, deer, bear, wolf, lynx, fisher, marten, otter, mink, weasel, skunk, porcupine, squirrel, chipmunk, muskrat, mice and shrews. It is hoped that this list can be reduced as more evidence becomes available. Ten traps were set out one night and twenty were set out another night around McGreevy Harbour, all in what appeared to be excellent small mammal habitat, with no catch of any kind. However, there are some small mammals present on the island for the lighthouse keeper reported that some were around the lighthouse buildings.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is essential for the proper management of the organization's finances and for ensuring compliance with relevant laws and regulations.

2. The second part of the document outlines the various methods used to collect and analyze financial data. It describes how these methods are applied to different types of transactions and how they help in identifying trends and anomalies in the data.

3. The third part of the document discusses the role of internal controls in preventing fraud and ensuring the integrity of the financial reporting process. It highlights the importance of a strong internal control system and provides examples of effective controls.

4. The fourth part of the document describes the various ways in which financial data is used to support decision-making. It explains how this information is used to evaluate performance, identify areas for improvement, and make strategic decisions about the future of the organization.

5. The fifth part of the document discusses the importance of transparency and accountability in financial reporting. It explains how these principles are essential for building trust with stakeholders and for ensuring the long-term success of the organization.

6. The sixth part of the document describes the various ways in which financial data is used to support compliance with laws and regulations. It explains how this information is used to identify potential risks and to ensure that the organization is operating in a lawful and ethical manner.

7. The seventh part of the document discusses the importance of ongoing monitoring and evaluation of the financial reporting process. It explains how this is essential for ensuring that the system remains effective and for identifying areas for improvement.

8. The eighth part of the document describes the various ways in which financial data is used to support strategic planning. It explains how this information is used to identify opportunities for growth and to make decisions about the future direction of the organization.

9. The ninth part of the document discusses the importance of communication and collaboration in financial reporting. It explains how these are essential for ensuring that all stakeholders are kept informed and that the reporting process is effective.

Conclusions and Recommendations:

1. There was no marked change in the caribou populations from that of the past two years. Of the eleven observations of caribou made, not more than three could have been repeat observations.
2. There is still caribou reproduction on the islands. Tracks of two calves were seen.
3. At least four caribou died last winter. One death was caused by the animal falling off a cliff; one could very well be due to starvation, and the cause of the other two deaths is unknown.

This is the second year that an adult caribou has been known to fall off a cliff in Sunday Harbour. Since it is a high, bare rounded rock, there is no apparent reason why the caribou should be up there. Also, the animal that died last winter appeared to have jumped or run off the cliff. Since there are no large predators on the islands, no explanation could be found.

4. The ages of the jaws collected, as determined by analogy with deer jaws, were as follows:

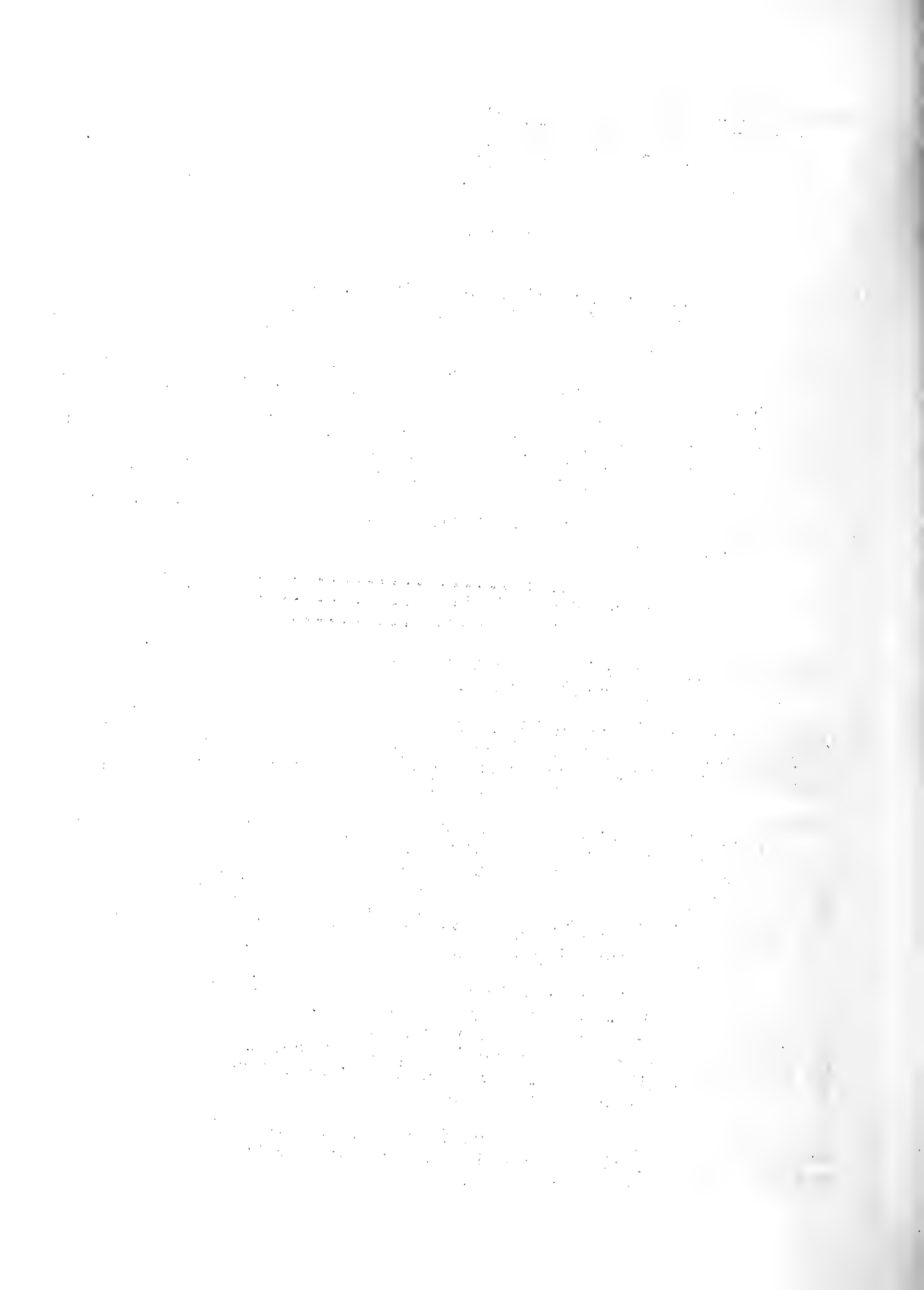
Jaw of 1955 kill .....	2 years
Carcass at foot of cliff .....	5 years
Carcass on gravel shore .....	6 months

The age of the calf indicates that it must have died in the fall of 1955, probably in December.

5. Both tree and ground lichens are very hard to find on the Slate Islands. The contrast between the plentiful supply of lichens observed on St. Ignace and neighboring islands the following week, and the very few seen on the Slate Islands was quite striking.

It was most evident when walking through similar timber types on St. Ignace and on the Slates. This scarcity, together with the possible starvation case found, leads to the belief that the present population on the Slate Islands may still be above the winter carrying capacity. It is probable that the continuous utilization of the lichens by large herds has greatly reduced the carrying capacity of the islands over what it once was.

6. Another example of a behaviour trait in caribou similar to that found in white-tailed deer was noticed. The curiosity exhibited by caribou when surprised in the woods and when chirped at by a hidden observer is practically identical with that displayed by white-tailed deer. Two caribou were attracted to within 30 or 40 feet by this method.
7. The only rodents that were found on the Slate Islands were beaver which had established colonies in three places. Snowshoe hares appeared to be increasing.



8. In the fall of 1953 a plan was put forward for moving caribou from the Slate Islands to Michipicoten Island. This plan was never carried out for the following reasons:
  1. There were too many agencies involved. Each one waited for somebody else to start something.
  2. The plan put forward was only a general one with not enough detailed solutions to the problems involved.
  3. There was no really satisfactory method suggested for capturing the caribou.
  4. There was the problem concerning methods of holding and transporting.
  5. There was a question as to whether the population of caribou on the Slate Islands warranted such a move.
  6. There was a problem as to the best time of year to carry it out.

This year's investigation has led to the conclusion that there are still too many caribou on the Slate Islands considering the poor winter food supply available. At least four caribou died last winter without having any noticeable effect on the population. These facts lead to the belief that six caribou could be removed with no harm to the herd, and quite possibly with some good.

Since caribou appear and behave so much like white-tailed deer, it is believed that six caribou could be caught without too much difficulty in box-type deer traps. The traps might have to be slightly enlarged. Caribou are not particularly "wild" animals, and could probably be held in small corrals. With these considerations in mind, the following plan is put forward.

During the month of November when rutting is pretty well finished and caribou have changed to a winter diet, three box traps could be set up on the Slate Islands. A small corral could be built to hold any catches. The traps could be baited and the animals fed with lichens gathered earlier from good sources in other places. Once set up, the traps could be operated by a field party of two or three men.

If the traps worked well and six caribou were caught, they could be placed in small carrying crates and shipped by means of a rented fishing tug to Michipicoten Island. There they could be met and unloaded by men from the White River District. It might be necessary to supply them with supplementary food during the first winter. That could be handled from White River.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of advanced analytical techniques to derive meaningful insights from the data.

3. The third part of the document focuses on the role of data in decision-making. It explains how data-driven insights can help identify trends, anticipate challenges, and optimize resource allocation, leading to more informed and effective strategic decisions.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides recommendations for implementing robust data governance frameworks to mitigate these risks and ensure the integrity and confidentiality of the data.

5. The fifth part of the document discusses the future of data analytics and the impact of emerging technologies like artificial intelligence and machine learning. It suggests that these technologies will further enhance the capabilities of data analysis and provide more sophisticated predictive models.

6. The sixth part of the document concludes by summarizing the key findings and reiterating the importance of a data-driven approach. It encourages the organization to continue investing in data infrastructure and talent to stay competitive in a rapidly changing market.

7. The seventh part of the document provides a detailed overview of the data collection process, including the identification of data sources, the design of data collection instruments, and the implementation of data collection protocols. It also discusses the importance of ensuring data accuracy and reliability throughout the process.

8. The eighth part of the document describes the various data analysis techniques used to process and interpret the collected data. This includes descriptive statistics, inferential statistics, and advanced modeling techniques. It also discusses the importance of validating the results of the analysis to ensure their accuracy and reliability.

9. The ninth part of the document discusses the role of data in identifying and addressing organizational challenges. It explains how data can be used to identify areas of inefficiency, understand customer needs, and develop targeted interventions to improve performance and address key business objectives.

10. The tenth part of the document focuses on the importance of data security and privacy. It discusses the various risks associated with data breaches and the need for implementing strong security measures to protect sensitive information. It also highlights the importance of complying with relevant data protection regulations.

11. The eleventh part of the document discusses the role of data in driving innovation and growth. It explains how data can be used to identify new market opportunities, develop innovative products and services, and optimize business processes. It also discusses the importance of fostering a data-driven culture within the organization to support these efforts.

12. The twelfth part of the document concludes by summarizing the key findings and reiterating the importance of a data-driven approach. It encourages the organization to continue investing in data infrastructure and talent to stay competitive in a rapidly changing market.

13. The thirteenth part of the document provides a detailed overview of the data collection process, including the identification of data sources, the design of data collection instruments, and the implementation of data collection protocols. It also discusses the importance of ensuring data accuracy and reliability throughout the process.



The cost of such a project would be small and could be split between the Geraldton and White River Districts. Geraldton District could pay for the traps, carrying crates and field parties on the Slate Islands. White River could pay for the boat rental and any winter feeding necessary. If no caribou were caught, only the cost of the traps and the field party would be lost.

Although the caribou would be easier to handle in summer, they would also be harder to catch. Trapping them in November would alleviate the winter food problem and perhaps prevent some winter mortality.

If this project were approved, the only preparation needed would be the collection of lichens in both White River and Geraldton Districts before the snow falls, and the construction of the traps and crates. If six caribou were not considered to be a large enough planting, another six could be transported next year.

If White River District is agreeable to this proposal and if it is cleared by Head Office, there is no reason why it should not be undertaken this November.

Summary:

1. The week of July 9th to 16th was spent on the Slate Islands in making an annual check on the caribou population.
  2. A total of 12 observations of caribou was made.
  3. Tracks of two calves were seen.
  4. Jaws from a caribou which had died a year ago, and from two which had died last winter, were collected. At least two more caribou are known to have died last winter.
  5. Anglers reported seeing less caribou this year. The significance of this report is not known.
  6. Beaver have definitely been re-established on Patterson Island. Foxes are present and snowshoe hares seem to be increasing.
  7. Mergansers, gulls, brown creepers and white-throated sparrows were the only birds recorded.
  8. A list of the mammals which do not appear to be present on the Slate Islands is included.
  9. A new plan for catching and transplanting some caribou from the Slate Islands to Michipicoten Island is put forward.
-

The first part of the document discusses the importance of maintaining accurate records. It states that proper record-keeping is essential for the efficient operation of any organization. This includes tracking financial transactions, personnel files, and operational data. The text emphasizes that without reliable records, decision-making becomes difficult and the risk of errors increases significantly.

Furthermore, it highlights the role of technology in modern record management. The use of digital databases and cloud storage solutions has revolutionized the way information is stored and accessed. This not only improves the security of data but also allows for easier collaboration and sharing of information across different departments and locations.

The document also touches upon the legal implications of record-keeping. In many industries, there are strict regulations regarding the retention and disposal of records. Failure to comply with these regulations can result in severe penalties and legal consequences. Therefore, it is crucial for organizations to stay updated on the latest regulatory requirements and implement robust policies to ensure compliance.

In addition, the text discusses the importance of data integrity and security. Organizations must implement strong security measures to protect their records from unauthorized access, theft, and loss. This includes using encryption, firewalls, and regular security audits. It also stresses the need for employee training to ensure that all staff members understand the importance of data security and follow best practices for handling sensitive information.

Another key aspect mentioned is the importance of regular backups. Backups are a critical component of any data protection strategy, as they provide a safety net in the event of a system failure or data corruption. The document recommends that organizations should have a clear backup policy in place, including the frequency of backups and the location of the backup copies.

Finally, the document concludes by emphasizing the long-term benefits of a well-managed record-keeping system. By investing in proper record management practices, organizations can improve their operational efficiency, reduce the risk of legal issues, and ensure the long-term preservation of their valuable data. It encourages organizations to take a proactive approach to record management and to continuously evaluate and improve their processes.

REPORT ON A WINTER MARTEN-TRAPPING PROJECT,  
WHITE RIVER DISTRICT.

by  
E. A. Pozzo

On January 28th, 1956, Joseph Beattie and Doug Morris of the Department of Lands and Forests, Province of Nova Scotia arrived to start a Live Trapping Project to obtain Marten and Fisher for restocking in Nova Scotia.

January 30th, started to set live traps in the White River portion of the Chapleau Game Preserve east of Mosher in the area being cut by the Newaygo Company. The camps of this company were used as headquarters.

Forty-seven traps were available for this project, consisting of thirty-five large traps and twelve small traps. Sizes of large traps: - 32" x 9½" x 9½". Sizes of small traps: - 24" x 6½" x 6½".

Due to this being a winter trapping project extreme caution was necessary in setting and tending traps in order that we experience no loss of animals due to exposure to the cold weather or from being in traps for too long a period.

#### Setting of Traps

A layer of spruce boughs was first laid on the snow at trap site, then trap was set and completely covered with boughs to form a very snug cubby. This sheltered animal from cold and snow and was believed to be a great factor in precluding loss of animals during project.

All traps were tended the first thing in the morning.

#### Bait Used

Consisted of Dr. Ballards dog food, beaver, beef and sardines. Beaver castor was used for scent.

Best results came from the beaver and beef baits rubbed with beaver castor. Sardines froze and no luck was had with them.

Due to cold weather very little scent was given off by these frozen baits. Baits which were rubbed with beaver castor held scent for a few days. Since very little scent came from baits marten would often by-pass traps apparently without being attracted.

All bait was tied on bottom of traps to ensure that no Canada Jays, Squirrels or mice could take bait out of trap.

[The page contains extremely faint, illegible text, likely bleed-through from the reverse side of the document. The text is arranged in several paragraphs and appears to be a formal letter or report.]

Foxes would come to the traps but would only look in and then leave.

Throughout only eight Canada Jays and one Squirrel were caught in traps.

Temperatures were a great factor. When temperature dropped animals were not very active but when it rose animals were very active. On February 19th., the temperature rose to 10 degrees above zero. This was the warmest night during the project and 6 marten were trapped that night.

One Fisher was trapped. Fisher seemed to be very shy with all the camp activities going on and they seemed to get back further in the woods, this was not so with the Marten which did not seem to mind all this.

Traps were strung out for a distance of 12 miles requiring considerable effort to give them daily attention.

Animals trapped on this project were 18 Marten and 1 Fisher.

Catch and temperature data are as follows:-

January 30	first traps set out	
January 31st	setting traps	
February 1st	setting traps	
February 2nd	setting traps	
February 3rd	1 marten	35 below zero
February 4th	missed Fisher	
February 5th	1 Fisher	
February 6th	11 more traps set out	
February 7th	5 more traps set out	
February 8th	1 Marten	
February 9th	2 Marten	
February 10th	2 Marten	
February 11th	1 Marten	25 below zero
February 12th	nil	
February 13th	nil	
February 14th	nil	
February 15th	nil	8 below zero
February 16th	1 Marten	26 below zero
February 17th	1 Marten	2 below zero
February 18th	1 Marten	2 above zero
February 19th	6 Marten	10 above zero
February 20th	nil	12 below zero
February 21st	2 Marten	17 below zero
February 22nd	nil	20 below zero

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INTRODUCTION OF CARP INTO ONTARIO

by  
Anonymous

The following item is taken from the "Markham Economist and Sun", July 5, 1956, Volume 101, No. 1, which reviews a century and is a reprint of an article appearing in the Markham Economist, a family newspaper devoted especially to the interests of the country, July 1, 1880:

"PISCICULTURE Economist, July 1, 1880.

Messrs. Samuel and B. F. Reesor of Cedar Grove have an excellent artificial fish breeding pond and have for some time been in search of a prolific fish that would answer our mill pond waters. Their study of natural history has been earnest and long, and has been rewarded in their selecting the German Carp. The next trouble was to get the fish, as there was none nearer than the Smithsonian Institute, Washington, D.C. Prof. Baird, president, could only distribute on recommendation of some member of Congress. Through the kindly introduction of Mr. Buell, of Rochester, N.Y. to that prince of Isaac Waltons, Seth Green, ten Carp were secured. Mr. B. F. Reesor returned from Caledonia, N.Y. on Friday last bringing his trophies. These are the first Carp that have ever been brought to Ontario. Should they prove half as prolific and as good for their country by the introduction of Carp, under the difficulties of getting them, then four hundred such politicians as the Dominion Member of Parliament for East York, and our children's great grandchildren will bless the day that the Reesors did a little carping."

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WINTER SEARCH FOR OUANANICHE, ATHELSTANE AND  
CLIFF LAKES, PORT ARTHUR DISTRICT.

by  
R. A. Ryder

Since the 1953 planting of ouananiche in Athelstane Lake, two summer and one fall netting surveys have failed to reveal whether the fish have survived or not, and if so, their location in the lake. As the netting surveys covered only that strata of water within five feet of the bottom in various water depths, and as ouananiche are said to be somewhat pelagic, at least at certain times of the year, it is believed that bottom set gill nets could possibly fail to enmesh any of these fish even though lake trout and other species were caught in quantity.

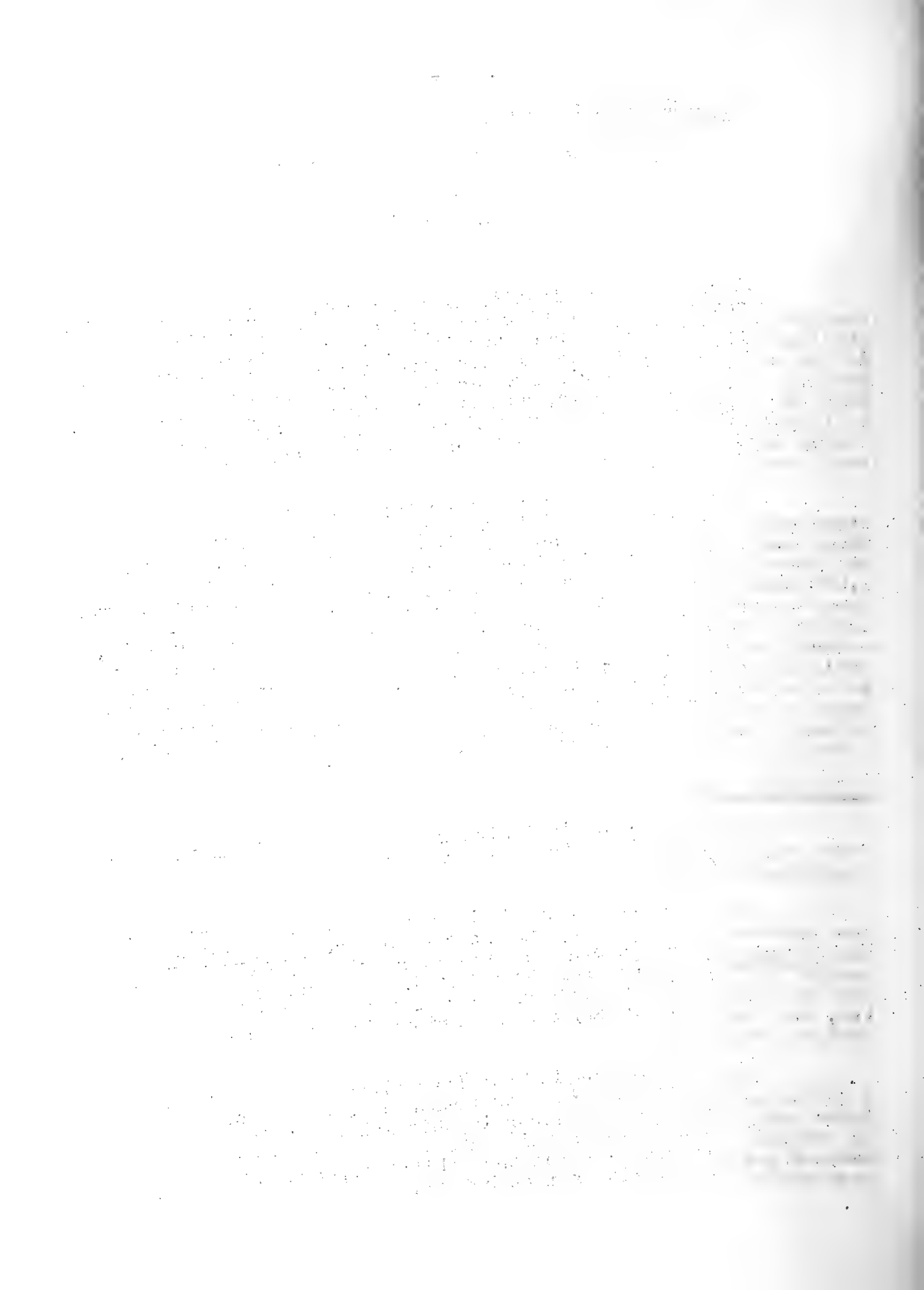
In the fall of 1955 an excess of ouananiche breeding stock was introduced into Cliff Lake, a deep oligotrophic lake where small lake trout produce but poor fishing at best. It was not intended that these fish become established as most of the 1,000 planted fish were immature males. Since the planting several people heard rumors about salmon being caught in Cliff Lake. Similar rumors were heard regarding Athelstane Lake and Moda Lake, a small lake connected to Athelstane at the northeast corner by a shallow stream about one-quarter of a mile in length. These rumors were the deciding factors on a proposed winter survey of these two lakes in an effort to locate the ouananiche. In both instances the purported method of capture was employed; i.e. fishing with lines through the ice, employing live minnows as bait.

Athelstane Lake

February 27 to 29 inclusive were spent in fishing Athelstane and Moda Lakes. The first day was devoted to Moda, the remaining two days to Athelstane.

The most common types of minnows sold by bait dealers in the Lakehead were used, namely two species of dace, Margariscus and Chrosomus. These minnows were small, ranging up to three inches in length. Waters from four feet in depth up to fifty feet were fished. The baited hooks were set one foot under the ice, one foot off the bottom, and at various intervals between surface and bottom.

No fish were caught in Moda Lake although one fish broke a 25lb. test steel leader. This was presumed to be one of the large pike which are known to occur in this lake. It is doubtful if ouananiche could survive in this lake in the summer as the maximum depth is fifteen feet and the habitat appears entirely unsuitable, being weedy with a muck bottom.



Athelstane Lake proper, was fished in as many variable-type habitat situations as time allowed. Two days' fishing produced only pike and lake trout, all taken on lines set one foot from the bottom.

The results from the Athelstane winter fishing survey are not conclusive, as the time spent fishing could cover only a small portion of the expanse of the lake. It is recommended that surface, sub-surface and oblique gill net sets be tried in spring or early summer, in an attempt to take the pelagic ouananiche. The fishing public should be made aware of the plantings and rumors of salmon catches checked. As Athelstane Lake is an hour's walk from the nearest bush road plus a second hour's walk to favorable fishing sites, few fishermen have bothered with it since its opening on January 1, 1956. However, with the advent of summer fishing, it is quite likely that the lake will be subjected to heavier angling pressure, with the corresponding increased possibility of a ouananiche catch.

Conservation Officers E. J. Swift and Paul Odorizzi assisted in the surveys of Athelstane and Moda Lakes.

#### Cliff Lake

This lake is situated three miles from a main camp road. It is heavily fished on week-ends although catches are usually poor. Lake trout were originally the only species sought and these generally range between 8" and 14". The largest trout reported from this lake is under three pounds in weight.

On March 6, 1956 a survey similar to that in Athelstane Lake was attempted in Cliff Lake in an effort to: (1) determine if the salmon had survived, (2) obtain stomachs of any available salmon for analyses of contents, (3) try to secure more information on habits and preferred environmental conditions of the salmon.

Four holes were cut through the ice leading out from a precipitous rock adjacent to the shoreline, to the approximate centre of the lake. Water depths ranged from 20' to over 100'. Lines were set one foot from bottom, and four, eight, and twelve feet under the ice surface. A total of nine ouananiche and one lake trout were caught in the day's fishing. Six salmon were caught in the hole nearest to shore, one each being caught in the other holes. Eight feet beneath the ice was judged to be the optimum depth for fishing. Salmon were also caught at four foot and twelve foot intervals but with less frequency than at the eight foot depth. In all cases the fish were caught on live minnows, but only after agitation of them by the hand. Upon being caught, some of the fish demonstrated a tendency to head toward the surface rather than bore down and put tension on the line. This probably corresponds with their habit of breaking water when caught during the open water season. One fish followed a baited hook being drawn in to the surface where it suddenly took the bait. At the

The following table shows the results of the experiment. The first column is the number of trials, the second column is the number of correct responses, and the third column is the percentage of correct responses.

Number of trials	Number of correct responses	Percentage of correct responses
10	8	80%
20	15	75%
30	22	73.3%
40	28	70%
50	35	70%
60	42	70%
70	48	68.6%
80	55	68.8%
90	62	68.9%
100	68	68%

The results show that the percentage of correct responses increases as the number of trials increases, but it levels off around 68% after 70 trials.

eight foot interval beneath the ice surface, one small lake trout was also caught.

Stomach samples revealed no distinguishable food beyond the bait minnows being used in fishing. It is not likely that these minnows are native to this lake. More than one-half of the stomachs were empty. The remainder bore only well digested food taken quite a while previous to the survey. The salmon which ranged from 14" to 20", all appeared to be in good condition.

It is recommended that a further study of this lake be completed in the summertime in an effort to make a more definite determination of the suitability of the lake for the fish. At this time food habits and growth will be more easily established. Evidences of spawning should also be checked during the fall run, and the possibility of the lake being used for reproduction assessed.

To date nine ouananiche have been caught in Cliff Lake by anglers and an additional nine on the survey. The lake shows some promise of at least providing put-and-take fishing. Many anglers are enthused about the prospects of establishing the salmon in some lake in the District. As one angler put it, "I'd rather catch one good salmon than ten lake trout."

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## FISH TAGGING STUDIES IN WHITEFISH BAY

LAKE OF THE WOODS IN 1954 AND 1955

by  
J. M. Fraser

Whitefish Bay is the eastern portion of Lake of the Woods and although it is over 100 square miles in area it is connected to the main body of Lake of the Woods only by several narrow channels at its northwest extremity. This body of water is very irregular in outline and contains hundreds of various sized bays and islands. The larger bays and islands have received various names.

Whitefish Bay is one of the deeper areas of Lake of the Woods and depths to 200 feet have been found. There is, however, an extensive area of shallow water as well. The deeper water contains an abundant whitefish population and a moderate lake trout population. In the shallower water pickerel, pike, bass, muskie and black crappie are taken.

This body of water is probably the most heavily fished of all the waters in the Kenora District. A concentration of some forty commercial tourist camps and hundreds of private summer camps are located in the general area. Whitefish Bay has been closed to commercial fishing since 1936 but in 1954 a small pound net fishery for whitefish was started.

Each fall the Kenora Hatchery fishes 3-5 pound nets in Lobstick Bay (see map) to obtain whitefish eggs for culture at the hatchery. Since fish were readily available from this operation a tagging project was begun in the fall of 1954 and continued in 1955. Whitefish, lake trout and pickerel have been tagged and released and the following is an account of this study.

### Pickerel Tagging Studies

During the period October 18-20, 1954 four hundred and sixty pickerel were tagged and released from pound nets in Lobstick Bay. The tag used was a monel metal strap type (National Band and Tag Co.) bearing a serial number and ONT stamped on it. The tag was attached to the right operculum by means of special tagging pliers. The average total length of eighty-nine measured pickerel was 17 inches. Scale samples were taken from these fish but age determinations have not yet been made.

Of the 460 tagged pickerel released in October, 1954 eleven (2.4%) were recovered during the summer and fall of 1955. Ten of these recaptures were reported by anglers and one was caught in nets set off the Indian Reserve on Regina Bay. The small number of returns demonstrates a dispersion of the pickerel after tagging. Three were caught in Regina Bay several miles from the tagging site, three were taken at the mouth of Berry Creek

### THE HISTORY OF THE UNITED STATES

CHAPTER I

#### THE EARLY PERIOD

The history of the United States is a story of discovery, exploration, and settlement. It begins with the first European explorers who sailed across the Atlantic Ocean in search of new lands and trade routes. Christopher Columbus's voyage in 1492 opened the way for European colonization of the Americas. The Spanish, French, and British all established colonies in North America, each with its own unique culture and traditions.

The early period of American history is marked by the struggle for independence from British rule. The American Revolution (1775-1783) was a pivotal moment in the nation's history, leading to the birth of the United States as a sovereign nation. The Declaration of Independence in 1776 was a bold statement of the colonies' desire for self-governance and freedom from British control.

Following the Revolution, the young nation faced numerous challenges, including the need to establish a stable government and a strong economy. The Constitution of 1787 provided the framework for the federal government, and the Bill of Rights (1791) guaranteed the fundamental rights of citizens. The early years of the Republic were characterized by westward expansion and the growth of the frontier.

The American West was a land of opportunity and adventure, attracting settlers from all over the country. The fur trade, gold mining, and the cattle industry were some of the major economic activities of the West. The discovery of gold in California in 1848 led to the California Gold Rush, which brought thousands of people to the West in search of wealth.

The American West was also a place of conflict and violence. The American Indian Wars (1817-1890) were a series of battles between the United States Army and various Native American tribes. The Indian Removal Act of 1830 forced many tribes to relocate to Indian Territory, leading to the Trail of Tears (1838-1839), a tragic event in which thousands of Native Americans died during their journey.

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several miles in an opposite direction and two were reported caught at Whitefish Narrows, twelve miles west of the tagging site. The location reported for the other three tags was "Whitefish Bay" which covers a considerable area.

The 2.4% return of tags will require some interpretation and speculation. There was a seven month period (October 1954 - May 1955) after tagging during which the pickerel were not available to angling. If the 450 pickerel remained alive and retained their tags through this period then the 2.4% caught by anglers would denote the exploitation this population received in one summer by angling. However, we have reason to believe from our studies in the Winnipeg River and from reference to studies elsewhere (Churchill, 1955) that a high percentage of the tags attached to the operculum are lost several months after tagging. If this is the case in Whitefish Bay, and it probably is, then the exploitation of pickerel by anglers is considerably higher than our returns indicate. In the fall of 1955 a number of pickerel were tagged with jaw tags and the expected returns in the coming 1956 season should give a more accurate picture of the exploitation by angling.

#### Whitefish Tagging Studies

Although Whitefish Bay probably contains the largest whitefish population of any of the areas of Lake of the Woods it has been closed to commercial fishing since 1936. A small pound net fishery was established in 1954 to harvest some of this whitefish population. The Kenora hatchery collects its whitefish eggs mainly in the Lobstick Bay area.

The main purpose of this whitefish tagging study was to determine the extent of movement of these fish. Some of the commercial fishermen in the main part of Lake of the Woods believe that the main lake is constantly being replenished by whitefish from Whitefish Bay.

Over the period October 18-November 11, 1954 five hundred whitefish were tagged and released from the hatchery nets in Lobstick Bay (see map). The tag was a small plastic disc containing a serial number and Ont. Dept. of Lands & Forests stamped on it. This tag was sewn to the whitefish immediately in front of the dorsal fin by means of 6 lb. test monofilament nylon line. (This method has been used extensively in other studies on whitefish and lake trout in Ontario and has proved to be efficient for these species).

After tagging, the fish were measured (total length) and scale samples were removed before releasing from the net. The size distribution of tagged whitefish is presented in Table I. Age determinations have not as yet been made.

Of the 500 whitefish tagged and released only four have been reported as recaptured. One of these fish was caught by a commercial fisherman off Chisholm Island a distance of some twenty

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miles from the tagging site. The remaining three tags were turned in to our office by the local fish buyer who found them on whitefish sold to him by the Whitefish Bay Reserve Indians.

These fish were undoubtedly caught in Regina or Lobstick Bays although the Indian Band holds a licence only for nearby Dogpaw and Caviar Lake. With the Indian Reserve bordering on Regina Bay the setting of nets in this area is understandable but is kept under control by the local Conservation Officer. However, this situation does disrupt the tagging to a certain extent.

It is interesting to note that only one of 500 tagged whitefish was caught outside Whitefish Bay although the waters immediately outside the bay receive a considerable amount of netting.

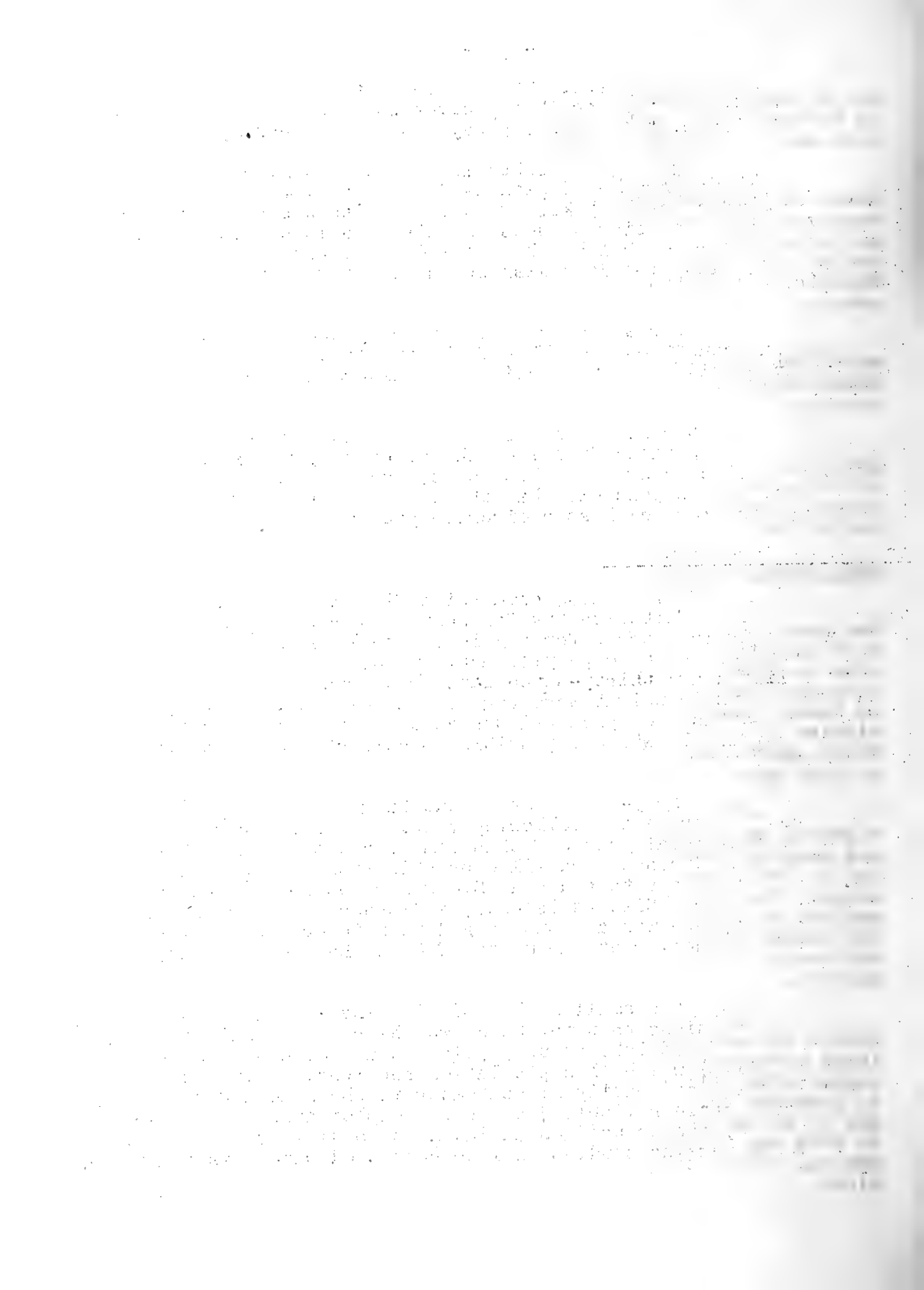
Also interesting is the fact that although several pound nets were operated in Whitefish Bay proper, and 30,000 pounds of whitefish since caught in these nets, that none of these were tagged fish. It is possible that the whitefish in Lobstick and Regina Bays are more or less a discrete population.

#### Lake Trout Tagging Studies

In the fall of 1954 commercial fishermen were operating two pound nets in Whitefish Bay for whitefish and they were asked to retain their lake trout for tagging. The location of these nets is shown on the accompanying map. On October 17, 1954 these nets were lifted and thirty-seven lake trout ranging from five to twenty pounds in weight were tagged and released. A strap tag similar to that used on pickerel was attached and clinched to the right operculum. It was not possible to collect biological data at that time.

Of the thirty-seven lake trout tagged four (10.8%) were reported caught during the following year. The first recapture was made by commercial nets off Chisholm Island on January 20th 1955. The known distance travelled by this fish was about 14 miles. Two lake trout tagged near Sioux Narrows were caught by anglers at the Three Sisters Islands, a distance of four miles. The fourth recapture was a trout tagged in Knickerbocker Inlet and caught by an angler at the mouth of Ghost Bay some 8 miles distant.

Although the small number of fish involved in this study limits the conclusions that may be drawn the returns indicate a local movement of the lake trout population and also suggest the exploitation (11%) which this population receives. Whitefish Bay is possibly the most heavily fished water in the Kenora District and if we can obtain reliable data on the exploitation by angling in this bay they can be used as an index to conditions in other waters. These tagging studies will be continued with this aim in mind.



Reference:

Churchill, Warren

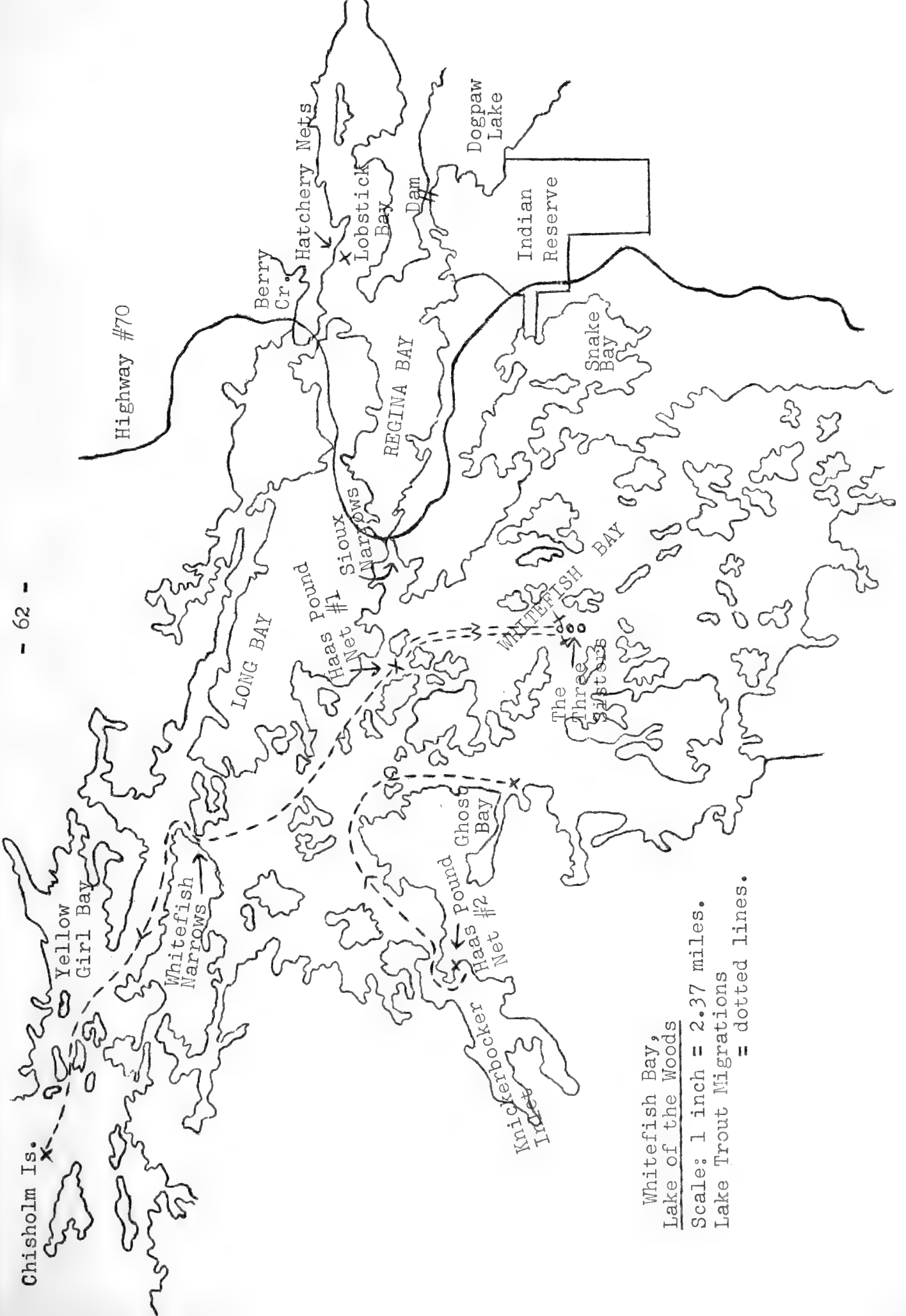
The effect of marking on walleyes. (Abstract)  
17th Midwest Wildlife Conference, 1955. 3 pages.

TABLE I - Length Distribution of Whitefish Tagged and Released  
from Hatchery Nets in Lobstick Bay During the Fall of  
1954.

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<u>Length Class (Total Length)</u>	<u>Number of Fish</u>
16.0 - 16.9	2
17.0	7
18.0	49
19.0	118
20.0	139
21.0	79
22.0	51
23.0	26
24.0	13
25.0	6
26.0	1
27.0	1
	<hr/>
Total	492





Whitefish Bay,  
 Lake of the Woods

Scale: 1 inch = 2.37 miles.

Lake Trout Migrations

= dotted lines.





# SUMMARY OF FUR RETURNS BY ONTARIO GAME MANAGEMENT DISTRICTS

## COMPILED FROM DISTRICTS FORM G-224 FOR YEAR 1955-56

	NO. OF AREAS	NO. OF TRAP.	RETS. MADE	BEAV. QUOTA	FISH QUOTA	MAR. QUOTA	BEAVER CATCH	BOB CAT	FISH	ARC FOX	COL FOX	LYNX	MART	MINK	MUSKRAT	OTT.	RAC SKUNK	SQU.	WEAS.	BR. WOL.	TIM WOL.	
CHAPLEAU	RTA 123	97	97	2007	-	-	1207	-	116	-	8	22	159	424	712	114	-	-	161	-	-	
COCHRANE	RES 63	74	74	329	349	322	1252	-	139	-	2	58	284	336	1117	64	-	66	966	-	-	
"	RES 21	21	21	169	-	-	62	-	12	-	-	20	4	55	580	-	-	-	18	-	1	
FORT FRANCES	RTA 126	126	116	992	330	31	5010	10	166	-	21	12	33	961	4605	116	-	116	612	7	14	
"	RES 67	38	38	1318	-	-	303	9	-	-	-	-	-	65	1082	1	-	114	369	2	4	
GERALDTON	RTA 116	122	93	581	247	831	1440	-	73	-	15	22	283	350	901	104	-	54	178	1	-	
GOSSAMA	RTA 111	109	108	3310	383	448	1573	3	122	-	8	11	219	504	1648	137	-	184	275	11	-	
KAPUSKASING	RTA 109	109	95	5849	494	1107	2123	3	127	-	8	69	508	565	743	115	-	21	779	-	-	
"	RES 17	3	3	-	-	-	11	-	1	-	-	2	-	7	-	1	-	-	4	-	-	
KENORA	RTA 267	297	191	11925	303	67	3974	8	129	-	11	13	7	992	10273	63	-	27	591	-	4	
"	RES 13	13	13	20	-	-	25	-	-	-	-	-	-	-	500	-	-	40	8	-	-	
LAKE ERIE	RTA 64	45	45	-	-	-	-	-	-	-	8	-	-	126	57336	-	104	-	7	-	-	
"	RES 908	392	392	-	-	-	4	-	-	215	-	-	-	478	60164	-	3836	364	327	2	-	
"	FAR 115	115	115	-	-	-	-	-	-	-	-	-	-	11	2271	-	42	6	6	-	-	
LAKE HURON	RES 954	936	936	-	-	-	25	-	-	319	-	-	-	1578	32825	2	5341	210	333	6	-	
"	FAR 117	117	117	-	-	-	542	-	-	58	-	-	-	27	506	-	60	4	2	-	-	
LAKE SIMCOE	RTA 21	21	21	594	-	-	677	-	-	23	-	-	-	179	1361	27	27	-	13	8	-	
"	RES 480	475	475	-	-	-	2	-	-	285	-	-	-	912	24265	12	1470	111	128	3	-	
"	FAR 9	9	6	-	-	-	-	-	-	-	-	-	-	4	104	-	18	-	-	-	-	
LINDSAY	RTA 129	144	144	4978	77	39	3708	-	87	-	15	-	11	745	6575	80	76	-	109	-	16	
"	RES 588	580	580	3456	-	-	2529	-	10	-	153	-	-	794	20105	47	927	58	130	5	4	
NORTH BAY	RTA 152	161	161	5689	67	11	3203	-	42	-	68	18	-	811	4434	124	10	-	245	2	15	
PARRY SOUND	RTA 136	124	124	4388	335	198	3605	-	159	-	34	3	89	906	5228	136	73	1	289	3	50	
"	RES 477	240	240	-	-	-	11	-	-	-	61	-	-	711	4603	59	158	5	296	4	13	
PATRICIA CENTRAL	RTA 269	519	670	32939	567	556	13558	-	269	-	26	127	205	3741	14987	2280	-	23	3654	1	12	
" EAST	RTA 233	457	420	20097	520	824	9645	-	126	-	135	153	425	2064	7509	1089	-	9	736	3430	-	
" WEST	RTA 325	790	544	24717	2060	58	9828	-	317	-	71	105	26	2022	24361	724	-	1	4297	2950	32	
PEMBROKE	RTA 60	60	60	3123	352	141	2778	-	237	-	80	-	76	599	4046	103	40	-	56	154	15	
"	RES 93	89	89	-	-	-	533	-	3	-	24	-	-	242	2432	2	42	-	20	85	-	
"	FAR 8	8	8	-	-	-	-	-	-	-	10	-	-	4	106	-	-	-	-	-	-	
PORT ARTHUR	RTA 175	132	178	8765	742	261	4100	-	315	-	28	29	181	609	1364	117	-	-	345	795	8	
"	RES 58	34	34	-	-	-	139	-	1	-	-	-	-	7	25	-	-	-	7	39	-	
"	RES 699	695	695	-	-	-	267	-	-	138	-	-	-	342	31626	5	323	-	53	257	3	
RIDEAU	FAR 224	224	224	-	-	-	-	-	-	17	-	-	-	23	3122	1	25	-	2	-	-	
"	RES 252	211	211	10103	209	59	2515	-	141	-	31	10	66	932	1303	173	-	86	368	47	32	
SAULT STE. MARIE	RES 74	70	70	1010	-	-	307	-	4	-	6	-	-	159	717	2	-	5	35	4	1	
"	RTA 59	101	86	4604	326	283	1423	-	118	-	1	18	135	363	1116	72	-	142	319	2	-	
ST LOUIS LOOKOUT	RTA 206	205	181	14974	176	62	6575	-	113	-	21	26	-	1493	7070	233	5	69	746	7	32	
SUDBURY	RES 173	159	159	-	-	-	840	2	4	-	18	-	-	309	1409	22	2	10	77	15	15	
"	RTA 149	148	146	4170	300	7	1583	-	101	-	8	82	18	495	1488	73	3	23	375	-	-	
SWASTIKA	RES 9	9	9	-	-	-	29	-	2	-	-	-	-	5	41	-	-	2	5	25	-	
"	FAR 9	9	9	-	-	-	-	-	-	-	1	-	-	24	210	-	-	6	48	-	-	
TWEED	RTA 192	178	151	6578	38	-	4066	-	25	-	20	-	-	789	8504	61	122	1	197	1	7	
"	RES 1130	1043	1043	-	-	-	4552	-	2	130	-	-	-	1040	4108	74	423	208	452	27	2	
"	FAR 63	65	65	-	-	-	28	-	-	7	-	-	-	16	2149	-	7	-	2	-	-	
WHITE RIVER	RTA 139	104	98	6152	486	920	2293	2	74	-	6	45	179	691	480	167	-	40	222	1	1	
TOTALS		9855	9855	199924	9363	6204	98084	46	3046	163	2619	845	2909	27510	400111	6401	13135	19	13861	20190	167	278

RTA REGISTERED TRAPLINE AREAS  
 RES RESIDENT TRAPPING LICENSES  
 FAR FARMER TRAPPER

10.1 PER. TRAPPERS RETURNS MISSING  
 49.0 PER. OF BEAVER QUOTA CAUGHT  
 36.3 FISHER " "  
 46.9 MARTEN " "

82-2291 RASH 909 KSS-C MAJOR DISTRICTS WORK CATALOG

SUMMARY OF THE RETURN BY DISTRICT TO THE HEADQUARTERS

NO.	NAME	POSTAL	TELEPHONE	TYPE	STATUS	DATE	TIME	START	STOP	TOTAL	PERCENT	REMARKS
1	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	...	...	...	...
6	...	...	...	...	...	...	...	...	...	...	...	...
7	...	...	...	...	...	...	...	...	...	...	...	...
8	...	...	...	...	...	...	...	...	...	...	...	...
9	...	...	...	...	...	...	...	...	...	...	...	...
10	...	...	...	...	...	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...
14	...	...	...	...	...	...	...	...	...	...	...	...
15	...	...	...	...	...	...	...	...	...	...	...	...
16	...	...	...	...	...	...	...	...	...	...	...	...
17	...	...	...	...	...	...	...	...	...	...	...	...
18	...	...	...	...	...	...	...	...	...	...	...	...
19	...	...	...	...	...	...	...	...	...	...	...	...
20	...	...	...	...	...	...	...	...	...	...	...	...
21	...	...	...	...	...	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...	...	...	...	...	...
23	...	...	...	...	...	...	...	...	...	...	...	...
24	...	...	...	...	...	...	...	...	...	...	...	...
25	...	...	...	...	...	...	...	...	...	...	...	...
26	...	...	...	...	...	...	...	...	...	...	...	...
27	...	...	...	...	...	...	...	...	...	...	...	...
28	...	...	...	...	...	...	...	...	...	...	...	...
29	...	...	...	...	...	...	...	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	...



