





No. 27

February 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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MUSKRAT STUDIES TWEED DISTRICT, 1955.

by  
P. A. Thompson

The Conroy Marsh muskrat study area was in operation again through the winter of 1954-55. Trapping was done by our two permanent trappers, namely, Mr. Garnet Mantifel, in charge of the operations, and Mr. George Lentz.

When entering the marsh on November 28th, the reduction in number of muskrat houses was quite noticeable. First thoughts were that the marsh had been over-trapped during the 1953-54 season when 2664 muskrats were taken. After two weeks of trapping it was quite evident that some factor other than trapping was responsible for the reduction in population.

Trapping began on November 28, 1954, and continued until December 22nd when operations were closed down for the Christmas festivities. Due to the heavy snowfall in late December and January trapping operations were not resumed until February 25th and then trapping continued through to the close of the muskrat season May 5, 1955. The catch was 945 muskrats.

Again various aspects of muskrat trapping and management were studied. The results are given under the following headings:

House Counts:

No muskrat houses were counted in the Conroy Marsh during the 1954-55 season. The service of a helicopter was not available for an aerial count and the heavy snowfall of late December and early January covered the houses making it impossible to count on foot.

Traps and Sets:

Three types of traps were used, namely #1 Victor Stoploss, #1 Bigelow and wire funnel type 3' x 1'. Most of the muskrats were taken with #1 Victor Stoploss traps and wring-offs were rare. The Bigelow #1 is a killer but has a fault of freezing during cold weather. Wire traps when in use have taken up to three rats in one night. This trap was used in runs during open water trapping and found to be efficient.

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Trapping Effort:

The trapping effort for the 1954-55 season has been worked out by weeks. The following table gives the number of trap nights required to take a muskrat:

<u>Week Ending</u>	<u>Trap Nights</u>	<u>Rats</u>	<u>Trap Night Per Rat</u>
December 4	220	43	5.1
December 11	616	71	8.6
December 18	1019	113	9.0
December 25	148	30	4.9
February 26	84	11	7.6
March 5	416	58	7.2
March 12	474	59	8.0
March 19	845	129	6.5
March 26	487	82	5.9
April 2	315	52	7.0
April 9	284	35	8.1
April 16	1034	172	6.0
April 23	778	60	13.2
April 30	185	13	14.2
May 7	251	6	41.8

Average for 1952-53 season	5.0 trap nights/rat
Average for 1953-54 season	4.7 trap nights/rat
Average for 1954-55 season	7.7 trap nights/rat

Age Ratios:

Three methods were used in aging.

- (1) Priming up pattern of pelts (fall only).
- (2) Skull measurements.
- (3) Examination of genital tracts.

The priming up pattern on the pelts was used in the fall. The skull measurements method and examination of genital tracts was applied to all rats taken.

The age ratio juvenile to adult female for the season was 6.1 to 1 adult ♀ as compared to 5.6 to 1 adult ♀ for 1952-53 season and 7.2 to 1 adult ♀ for 1953-54 season.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial 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 make informed strategic decisions that drive the organization's success.

4. The fourth part of the document discusses the importance of data security and privacy. It outlines the measures that should be taken to protect sensitive information and ensure compliance with relevant regulations and standards.

5. The fifth part of the document addresses the challenges of data integration and interoperability. It explores the various factors that can hinder the seamless flow of data between different systems and offers strategies to overcome these challenges.

6. The sixth part of the document discusses the role of data in innovation and growth. It explains how data can be used to identify new market opportunities, develop innovative products, and drive sustainable growth for the organization.

7. The seventh part of the document focuses on the importance of data literacy and skills. It emphasizes the need for employees to have a strong understanding of data and the ability to use it effectively in their work.

8. The eighth part of the document discusses the future of data and its impact on various industries. It explores emerging trends and technologies that will shape the data landscape in the coming years and offers insights into how organizations can prepare for these changes.

Sex Ratio:

All rats taken were sexed and the results show little change.

	<u>♂ to ♀</u>
1954-55	117:100
1953-54	119:100

The following table gives the weekly total catch and sex ratios:

Weekly Totals of Catch and Sex Ratio

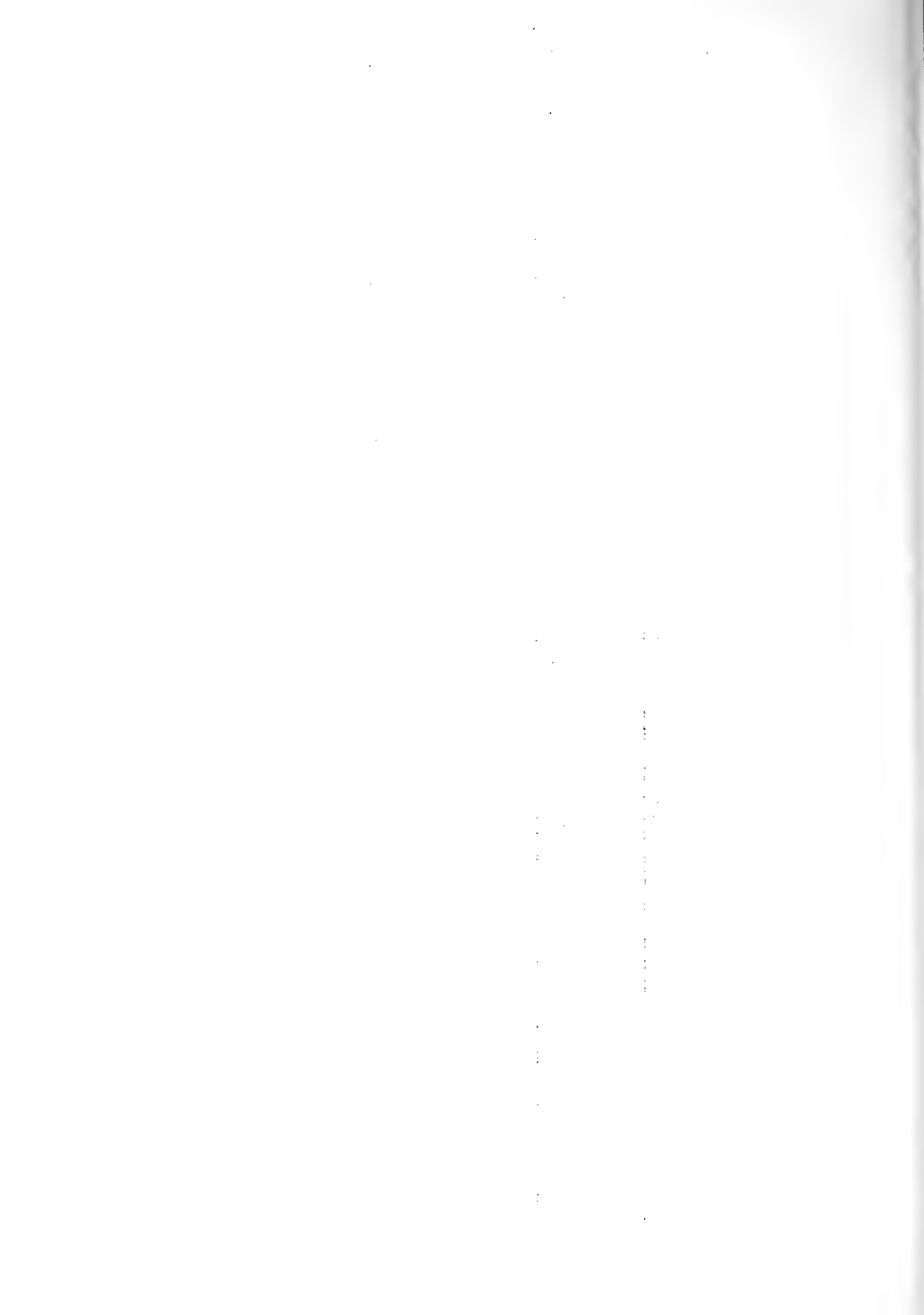
<u>Week Ending</u>	<u>♂ Taken</u>	<u>♀ Taken</u>	<u>Total</u>	<u>Ratio ♂ to ♀</u>
December 4	23	20	43	115 - 100
December 11	41	30	71	137 - 100
December 18	63	50	113	126 - 100
December 25	16	14	30	114 - 100
February 26	9	5	14	180 - 100
March 5	30	36	66	83 - 100
March 12	38	21	59	180 - 100
March 19	66	56	122	118 - 100
March 26	45	37	82	122 - 100
April 2	22	30	52	73 - 100
April 9	17	17	34	100 - 100
April 16	98	74	172	132 - 100
April 23	31	28	59	111 - 100
April 30	7	9	16	78 - 100
May 7	<u>5</u>	<u>7</u>	<u>12</u>	<u>71 - 100</u>
	511	434	945	117 - 100

Muskrats taken from Big Island, Weller's Bay and Pleasant Bay marshes in Prince Edward County were also examined for age and sex. The following table gives the age and sex ratios of Prince Edward muskrats trapped during the 1955 spring season:



Age and Sex Ratios of Prince Edward County Muskrats, 1955.

Marsh	Adult ♂	Adult ♀	Juv. ♂	Juv. ♀	Total Juv.	Total Muskrats	Age Ratio Juv. to Adult ♀	Sex Ratio ♂ to ♀
Big Island East of causeway	27	22	150	102	252	301	11.4 to 1	147 to 100
Big Island West of causeway	78	72	469	353	822	972	11.4 to 1	129 to 100
Weller's Bay	43	40	131	125	256	339	6.4 to 1	105 to 100
Pleasant Bay	64	52	157	126	283	399	5.4 to 1	124 to 100





Litter Size:

In Conroy Marsh the first pregnant rat in which the number of embryos could be counted was taken on April 17th. Between April 17th and the close of the season, May 5th, only six females were found with embryos. From this small sample the average litter size was 8.1.

Placental Scars:

All female rats taken in Conroy Marsh were examined for the presence or absence of placental scars. Scar counts were also made on female muskrats taken during the special fall season for East and West Lakes, Prince Edward County.

The following table gives the results of placental scar counts made in Tweed District during the 1954-55 season:

<u>Marsh</u>	<u>No. of Adult ♀ Rats</u>	<u>Average Scar Counts</u>
Conroy Marsh	27	14.0
East Lake	15	13.6
West Lake	9	15.4

Weights:

Again this past season most of the muskrats taken were weighed. This is done for two reasons. (1) To check on the increase or decrease in average weight from season to season. (2) To get a picture of the change in weights throughout the season.

The following table gives comparisons of average weights for the past three seasons:

<u>Season</u>	<u>No. of ♂ Rats</u>	<u>Average Weight</u>	<u>No. of ♀ Rats</u>	<u>Average Weight</u>
1953 <sup>x</sup>	613	2.45	482	2.42
1953-54	1461	2.56	1186	2.48
1954-55	504	2.39	412	2.32

x indicates trapping from March 12 to April 30.

When trapping began in late November it was quite evident that there was a considerable reduction in the number of muskrat houses. This indicated a reduction in the population. With less muskrats in the marsh the weights should have increased rather than decreased. Therefore this noticeable reduction in the weights of muskrats taken seems to be further proof that over-trapping was not responsible for the reduction in the population.



The following table gives the average weight of males and females for each week throughout the trapping period. Where the weekly average exceeds the season average, an x has been entered on the table. This shows a greater weight in both males and females until shortly after freeze up and again after the break up. The marsh froze over on December 2nd and is not indicated on the table:

<u>Week Ending</u>	<u>♂</u>		<u>♀</u>	
	<u>No. of Muskrats</u>	<u>Average Weight in Pounds</u>	<u>No. of Muskrats</u>	<u>Average Weight in Pounds</u>
Dec. 4	23	2.45 x	19	2.49 x
Dec. 11	41	2.45 x	29	2.48 x
Dec. 18	62	2.39	55	2.38 x
Dec. 25	16	2.32	14	2.38 x
Feb. 26	9	2.34	5	2.28
Mar. 5	30	2.30	36	2.30
Mar. 12	38	2.25	21	2.35
Mar. 19	67	2.31	60	2.18
Mar. 26	44	2.33	37	2.28
Apr. 2	22	2.21	31	2.27
Apr. 9 Breakup	17	2.49 x	18	2.43 x
Apr. 16	98	2.54 x	49	2.22
Apr. 23	30	2.46 x	29	2.33 x
Apr. 30	4	2.64 x	5	2.51 x
May 7	<u>3</u>	<u>2.64</u> x	<u>4</u>	<u>2.34</u> x
	504	2.39	412	2.32

Marketing of Muskrat Pelts:

All muskrats taken in the Conroy Marsh in the 1954-55 season were marketed with Canadian Fur (Auction) Sales in Montreal. The following is average returns to the trappers after deductions were made for royalties, commission and express:

<u>Date</u>	<u>No. of Muskrats</u>	<u>Average Price Per Pelt to Trapper</u>
Jan.	250	\$1.90
April 29	50	\$1.15
May 26	645	\$1.42

Average price per pelt received by trapper for season was \$1.53.



Quality of Pelts:

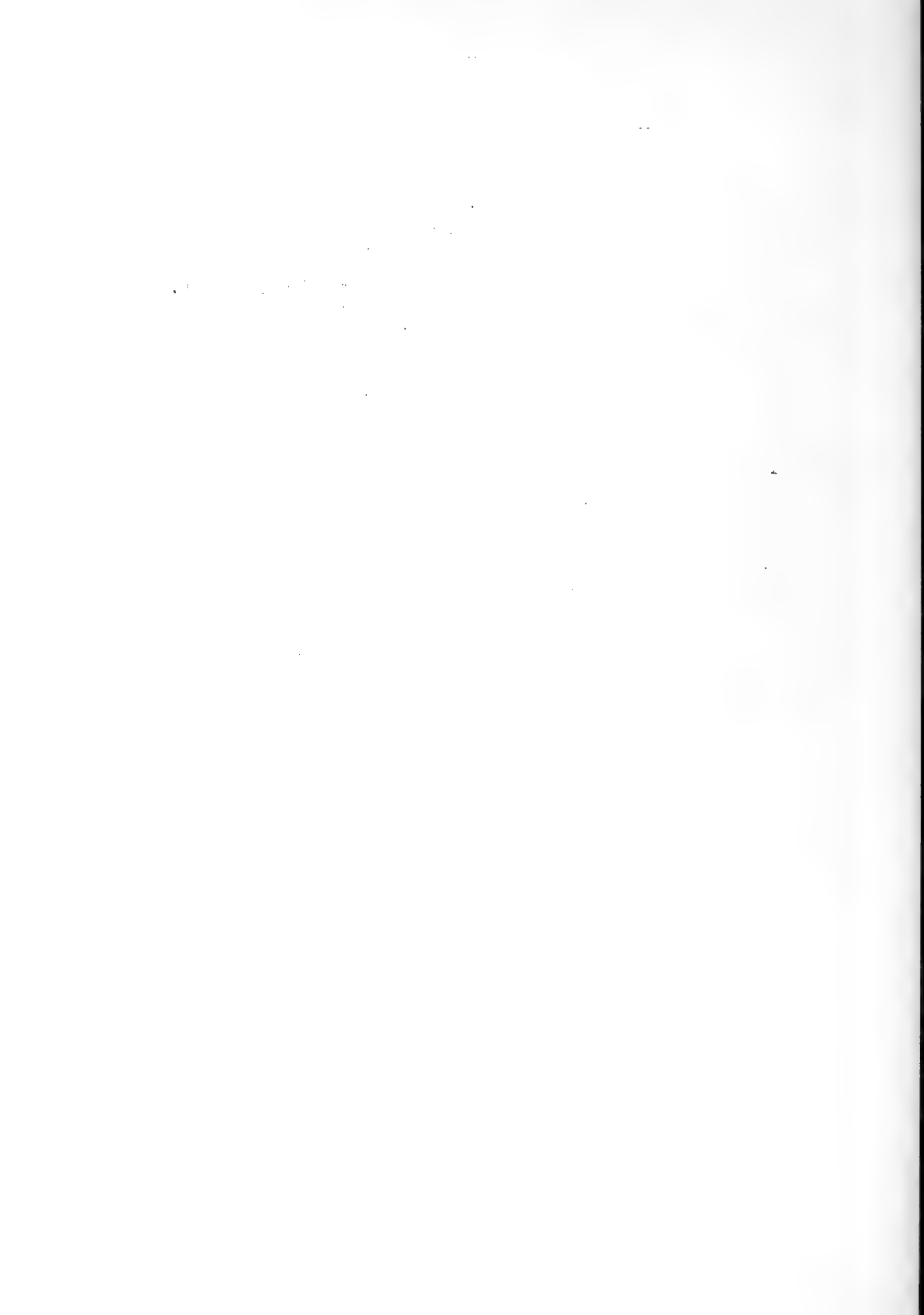
The pelts of muskrats taken from Conroy Marsh during the season of 1954-55 were inferior to those taken throughout the 1953-54 season. The leather of the pelts was much lighter and more papery. The fur was not as dense. The overall size of pelts was smaller.

Cut and damaged pelts were practically nil. The last 245 muskrats taken in the marsh this spring were examined for damage and assessed as follows:

231 Undamaged  
7 One or two slight cuts  
7 Three or more cuts

Summary:

- (1) Placental scar counts show that there was no change in reproduction.
  - (2) Age ratios juvenile to adult ♀ being lower indicate that over-trapping was not responsible for the decline in population.
  - (3) The reduced average weights and poorer quality of pelts seem to indicate that food was the major factor responsible for the low production of muskrats.
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VALUE OF FURS PRODUCED IN THE  
PATRICIA WEST AND PATRICIA CENTRAL  
WILDLIFE MANAGEMENT DISTRICTS

by  
A. T. Cringan  
August 15, 1955

A wildlife management program has certain results that can be appraised biologically, others that can only properly be judged from an economical or social viewpoint. To provide some information on the economical side of the fur management program in Patricia West and Patricia Central, I have prepared the following report.

Fur production records on file in the Sioux Lookout District Office, and average fur prices as computed by Head Office staff, for the years 1949-50 to 1953-54, form the basis of all calculations. The tabular results speak for themselves and so comment will be kept to a minimum.

I am indebted to the Wildlife Management Officers of the Sioux Lookout District, W. C. Currie, T. Batchelor, J. A. Macfie and E. H. Stone, for their help in compiling the fur production records, without which these computations would have been impossible.





TABLE I - Average, Greatest, and Least Values of Fur Produced Annually in Patricia West and Patricia Central Group Areas, 1949-54.

<u>Group Area</u>	<u>Mean Total Value of Fur Produced Annually</u>	<u>Greatest Value of Fur Produced Annually (Year)</u>	<u>Least Value of Fur Produced Annually (Year)</u>
<u>Patricia West</u>			
Sioux Lkt.-Hudson	\$22,000	\$32,000 (1950-51)	\$10,000 (1953-54)
Red Lake	32,000	44,000 (1950-51)	18,000 (1953-54)
Lac Seul	80,000	112,000 (1950-51)	56,000 (1953-54)
L. Grand Rapids	12,000	16,000 (1950-51)	7,000 (1953-54)
Pekangikum	41,000	55,000 (1950-51)	30,000 (1953-54)
Cat Lake	41,000	54,000 (1950-51)	30,000 (1953-54)
Deer Lake	16,000	23,000 (1950-51)	11,000 (1953-54)
Island Lake	25,000	35,000 (1950-51)	17,000 (1952-53)
Sandy Lake	23,000	31,000 (1949-50)	17,000 (1953-54)
Round Lake	37,000	49,000 (1949-50)	19,000 (1953-54)
Total (P. W.)	329,000	445,000 (1950-51)	222,000 (1953-54)
<u>Patricia Central</u>			
Savant-Armstrong	\$55,000	\$68,000 (1950-51)	\$29,000 (1953-54)
Auden	14,000	17,000 (1952-53)	12,000 (1953-54)
Osnaburgh	64,000	80,000 (1950-51)	37,000 (1953-54)
Fort Hope	20,000	24,000 (1950-51)	17,000 (1951-52)
Pickle Lake	41,000	53,000 (1950-51)	28,000 (1953-54)
Big Beaverhouse	28,000	46,000 (1950-51)	18,000 (1953-54)
Lansdowne House	78,000	99,000 (1950-51)	64,000 (1951-52)
Sachigo	22,000	37,000 (1950-51)	11,000 (1951-52)
Bearskin	31,000	58,000 (1950-51)	19,000 (1953-54)
Big Trout	41,000	70,000 (1950-51)	22,000 (1953-54)
Kasabonika	29,000	45,000 (1950-51)	16,000 (1953-54)
Shamattawa	12,000	21,000 (1949-50)	6,000 (1952-53)
Severn	38,000	56,000 (1949-50)	26,000 (1953-54)
Winisk	35,000	47,000 (1950-51)	25,000 (1953-54)
Total (P. C.)	508,000	706,000 (1950-51)	335,000 (1953-54)

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TABLE II - Numbers of Trappers and Value of Fur Produced Per Trapper for Patricia West and Patricia Central Group Areas, 1949-54.

Group Area	Average No. of Trappers Per Year	Greatest No. of Trappers Per Year	Least No. of Trappers Per Year	Average Value Fur Per Trapper Per Year	Greatest Value Fur Per Trapper Per Year	Least Value Fur Per Trapper Per Year
<u>Patricia West</u>						
Sioux-Hudson	43	48 (1953-54)	39 (1949-50)	\$ 510	\$ 750	\$ 203
Red Lake	71	73 (1952-53)	66 (1953-54)	450	605	272
Lac Seul	127	134 (1952-53)	116 (1949-50)	630	908	427
L. Grand Rapids	35	36 (1951-54)	34 (1950-51)	340	459	205
Pikangikum	84	94 (1953-54)	74 (1949-50)	490	660	324
Cat Lake	32	35 (1952-53)	30 (1950-51)	1,280	1,790	943
Deer Lake	38	41 (1950-51)	34 (1953-54)	420	556	311
Island Lake	79	82 (1951-52)	73 (1952-53)	320	434	215
Sandy Lake	102	111 (1950-51)	88 (1952-53)	230	286	170
Round Lake	62	66 (1949-51)	58 (1953-54)	600	739	336
Total (P. W.)	673	683 (1950-51)	655 (1949-50)	490	650	330
<u>Patricia Central</u>						
Savant-Armstrong	73	75 (1951-52)	71 (1950-51)	750	960	726
Auden	27	36 (1949-50)	22 (1951-52)	520	690	421
Osnaburgh	83	86 (1949-50)	80 (1953-54)	770	1,024	460
Fort Hope	25	29 (1952-54)	21 (1950-51)	800	1,144	593
Pickle Lake	66	69 (1951-52)	63 (1949-50)	620	796	433
Big Beaverhouse	46	47 (1952-54)	45 (1951-52)	610	991	390
Lansdowne House	103	107 (1953-54)	94 (1949-50)	760	876	612
Sachigo	45	47 (1953-54)	44 (1951-52)	490	812	245
Bearskin	47	50 (1951-52)	44 (1952-54)	660	1,199	403
Big Trout	79	82 (1950-51)	75 (1949-50)	520	860	279
Kasabonika	33	33 (1950-54)	31 (1949-50)	880	1,372	490
Shamattawa	14	15 (1951-54)	13 (1950-51)	860	1,477	410
Severn	37	39 (1950-51)	36 (1953-54)	1,030	1,509	726
Winisk	40	43 (1951-52)	37 (1953-54)	880	1,232	689
Total (P. C.)	718	722 (1951-52)	712 (1949-50)	710	980	470

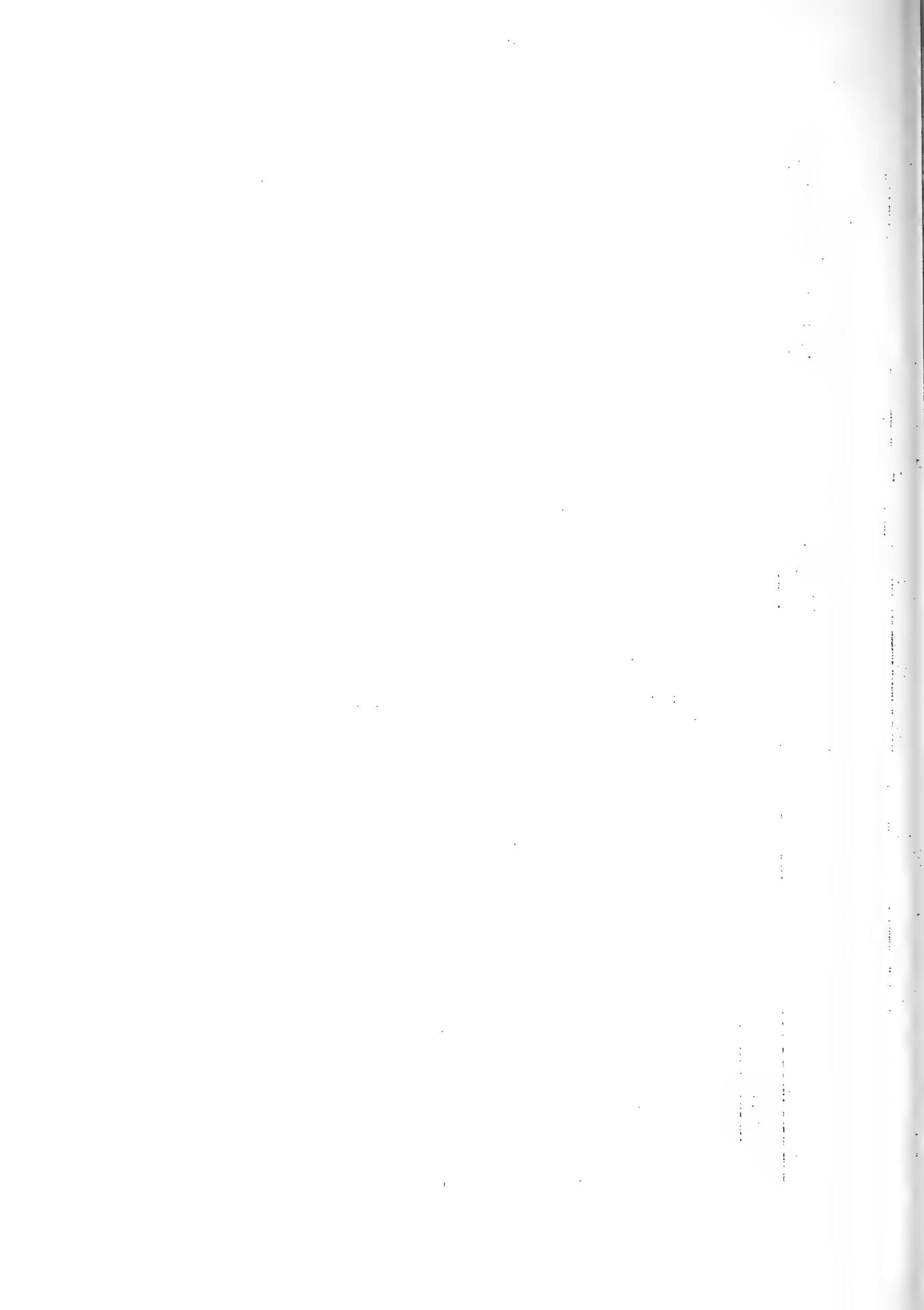


TABLE III - Areas of Group Areas and Value of Fur Produced Per Square Mile for Patricia West and Patricia Central Group A. 1949-54.

<u>Group Area</u>	<u>Area In Squ. Mile</u>	<u>Average of Fur Produced Per Squ. Mile</u>	<u>Greatest Value of Fur Produced Per Squ. Mile</u>	<u>Least Value of Fur Produced Per Squ. Mile</u>
<u>Patricia West</u>				
Sioux-Hudson	1,200	\$ 18.30	\$25.50	\$ 8.12
Red Lake	3,900	8.20	11.10	4.51
Lac Seul	6,400	12.50	17.50	8.73
L. Grand Rapids	1,500	8.00	10.40	4.91
Pikangikum	4,900	8.40	11.20	6.22
Cat Lake	4,300	9.50	12.50	7.03
Deer Lake	2,200	7.30	10.40	4.80
Island Lake	4,400	5.70	7.98	3.90
Sandy Lake	6,300	3.70	5.00	2.75
Round Lake	5,500	6.70	8.87	3.54
Total (P. W.)	40,600	8.10	11.00	5.45
<u>Patricia Central</u>				
Savant-Armstrong	5,000	11.00	13.65	5.78
Auden	2,900	4.80	5.96	4.05
Osnaburgh	6,100	10.50	13.00	6.03
Fort Hope	3,900	5.10	6.16	4.40
Pickle Lake	6,100	6.70	8.72	4.54
Big Beaverhouse	3,800	7.40	12.00	4.83
Lansdowne House	8,700	8.40	11.37	7.36
Sachigo	4,900	4.50	7.45	2.20
Bearskin	6,700	4.60	8.60	2.86
Big Trout	7,200	5.70	9.79	3.06
Kasabonika	2,000	14.50	22.68	8.09
Shamattawa	2,300	5.20	8.97	2.68
Severn	12,700	3.00	4.40	2.06
Winisk	15,000	2.30	3.12	1.70
Total (P. C.)	87,300	5.80	8.10	3.80

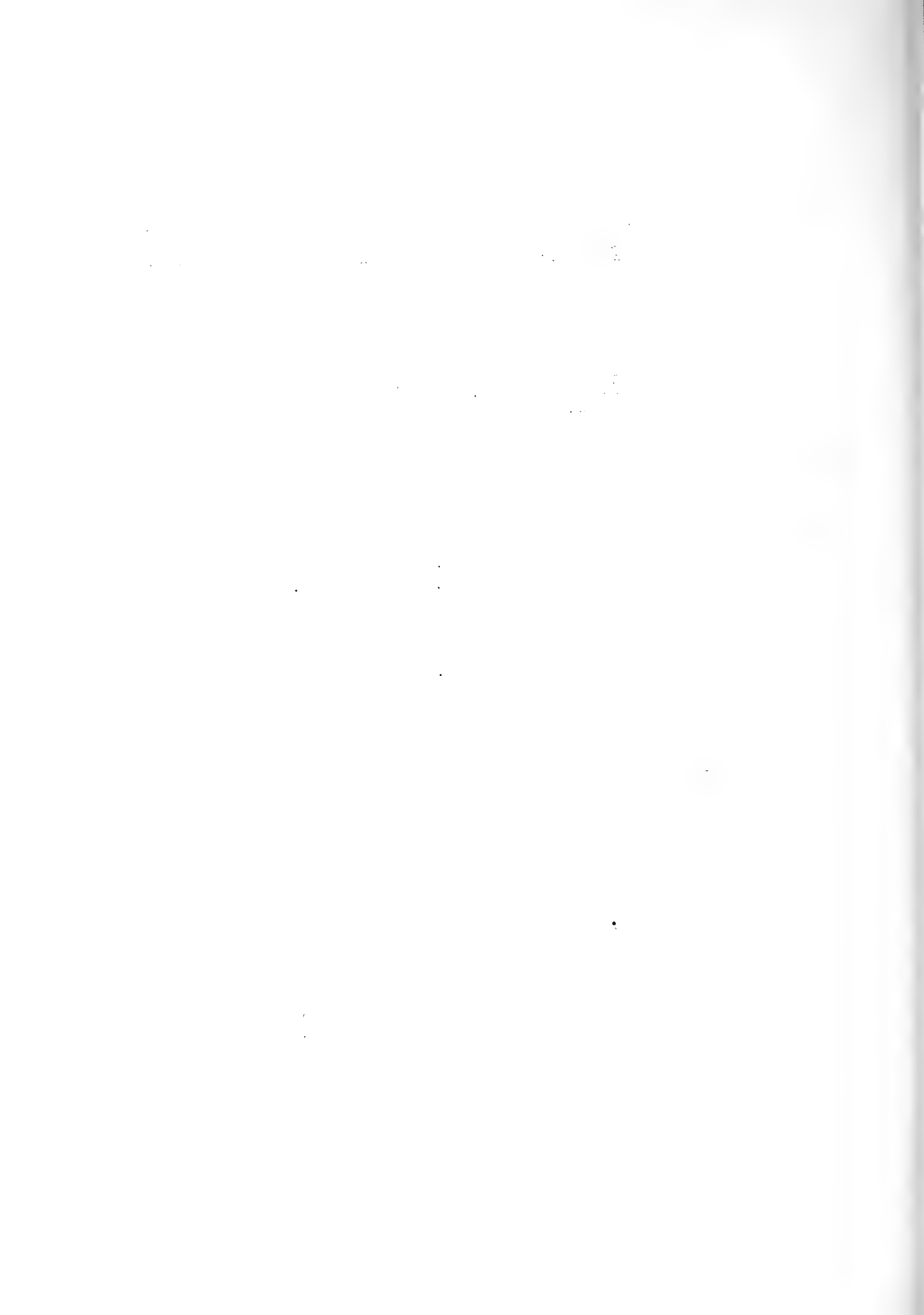


TABLE IV - Most Valuable Species of Fur in Patricia West and Patricia Central Group Areas, 1949-54.

<u>Group Area</u>	<u>1949-50</u>	<u>1950-51</u>	<u>1951-52</u>	<u>1952-53</u>	<u>1953-54</u>
Red Lake	mink	beaver	beaver	beaver	beaver
Lac Seul	mink	beaver	beaver	beaver	beaver
Sioux-Hudson	beaver	beaver	beaver	beaver	beaver
Savant-Armstrong	beaver	beaver	beaver	beaver	beaver
Auden	beaver	beaver	beaver	beaver	beaver
L. Grand Rapids	mink	mink	beaver	beaver	beaver
Pikangikum	mink	beaver	beaver	beaver	beaver
Cat Lake	beaver	beaver	beaver	beaver	beaver
Pickle Lake	beaver	beaver	beaver	beaver	beaver
Osnaburgh	beaver	beaver	beaver	beaver	beaver
Fort Hope	beaver	beaver	beaver	beaver	beaver
Island Lake	mink	mink	mink	mink	mink
Sandy Lake	beaver	beaver	beaver	muskrat	mink
Deer Lake	beaver	beaver	beaver	beaver	beaver
Round Lake	mink	beaver	beaver	beaver	beaver
Big Beaverhouse	beaver	beaver	beaver	beaver	beaver
Lansdowne House	mink	beaver	beaver	beaver	beaver
Sachigo	mink	beaver	mink	mink	mink
Bearskin	beaver	beaver	beaver	beaver	beaver
Big Trout	mink	beaver	beaver	beaver	mink
Kasabonika	beaver	beaver	beaver	beaver	beaver
Shamattawa	mink	beaver	beaver	beaver	mink
Severn	mink	beaver	beaver	beaver	mink
Winisk	mink	beaver	beaver	beaver	mink
No. of areas in which beaver predominates	12	22	22	20	15
No. of areas in which mink predominates	12	2	2	3	9
No. of areas in which muskrat predominates	0	0	0	1	0

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It is essential to ensure that all entries are supported by appropriate documentation and receipts.

3. Regular audits should be conducted to verify the accuracy of the records and to identify any discrepancies.

4.

5.



Comment

1. Total value of furs produced annually

The best years, in terms of total value of furs produced, in the Patricia West and Patricia Central Wildlife Management Districts were 1950-51 and 1949-50. All but one of the 24 group areas within these districts produced their most valuable fur crop of the 5-year period under consideration during one of these years.

2. Number of trappers and value of fur produced per trapper

The number of active trappers in the Patricia West and Central Districts varies a little from year to year. There does not appear to be any significant trend in this connection.

The average value of fur per trapper in a year varies from \$170 (Sandy Lake, 1953-54) to \$1,790 (Cat Lake, 1950-51). In Patricia West, the 5-year average value of fur produced per trapper was \$490, while in Patricia Central this value was \$710.

3. Value of fur produced per square mile

As might be expected, there is a general decline in the average value of fur produced per square mile per year from south to north. Values ranging from \$18.30 to \$12.50 in the southern group areas such as Sioux-Hudson and Lac Seul, through \$8.40 and \$7.40 in the centrally-located group areas such as Pikangikum and Big Beaverhouse, to around \$2.00 in the Severn and Winisk areas in the north. There are exceptions to this rule, notably the Kasabonika area, which yielded an average of \$14.50 worth of fur per square mile per year between 1949 and 1954, although situated well to the north.

4. Most valuable species of fur

In 1949-50, and again in 1953-54, mink was the leading fur in many group areas in Patricia West and Patricia Central. In between these years, beaver was the most valuable fur in most group areas. Muskrat is the only other species of fur to have rated as the principal fur in any group area during this period.



STATISTICS ON THE PELEE ISLAND PHEASANT SHOOT - 1955

by  
L. J. Stock

Licenses sold - Non-Resident	1409
Resident	200
Total:	<u>1609</u>

Average bag per hunter (28.27 percent sample)	Cocks 4.4
	Hens 3.7
	<u>Total: 8.1</u>

Cock kill - Bagged	7128
Net crippling loss	1190
Illegal kill	1000 (estimated)
Total:	<u>9318</u>

Hen kill - Bagged	5969
Net crippling loss	315
Illegal kill	500 (estimated)
Total:	<u>6784</u>

Total kill 16,102

Sex Ratios

Pre-season (October 25) 1.4 hens/cock  
Post-season (November 9-10) 12.5 hens/cock

Age ratios

(October 26-27)  
Cocks 6.0 Juv./Adult  
Hens 1.67 Juv./Adult

Population estimates (Kelker index)

Number of birds before the hunt:	Number of birds after the hunt:
Cocks 9882	Cocks 564
Hens 13834	Hens 7050

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INVESTIGATIONS OF PARASITISM IN PELEE ISLAND PHEASANTS\*

by  
J. K. McGregor  
Ontario Veterinary College, Guelph

Herewith is a report of our findings in connection with:

- (a) Fecal samples taken on Pelee Island during 1954.
- (b) Pheasant intestinal contents recently submitted, also from Pelee Island.

It was found that 11 out of 21 fecal samples<sup>7</sup> were negative for parasitism. Three birds had evidence of Heterakis gallinae. Six samples showed Capillaria infection. Three samples showed gapeworm infection (Syngamus trachea). Two birds had coccidia infection. The species of coccidia identified were Eimeria phasiani, E. dispersa, and E. magalostomata.

We examined the viscera of pheasants shot on Pelee Island, that you sent along about two weeks ago, and have found that of 24 sets of viscera examined, 14 were devoid of evidence of parasitism, 6 birds had Heterakis infection, 4 birds had slight Capillaria infection, and none of the birds had coccidia or Syngamus trachea infection.

In assessing the results achieved so far, it would appear that the pheasants on Pelee Island do not have very many parasites among them. Most of the birds examined have had a very light infection that certainly would not threaten their health to any extent.

\* As reported in a letter to Mr. Lloyd Stock, District Biologist, Lake Erie District, November 22, 1955.

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WATERFOWL CENSUS FOR LUTHER MARSH

OCTOBER 1st, 1955

by  
W. H. Cantelon

Luther Marsh, the night before the opening shoot for 1955, was bathed in bright moonlight and hunters from a radius of 75 miles commenced to converge on the marsh from sunset on, equipped with sleeping bags, blankets, dogs, boats, guns, and pockets sagging with ammunition.

The morning of the "opening" dawned clear and sunny and not ideal duck hunting weather.

The Department of Lands and Forests, with the co-operation of Dr. deVos, Wildlife Lecturer, and several of his students from the Ontario Agricultural College, Guelph, established checking stations at main points of access to Luther Marsh in Wellington and Dufferin Counties.

The following tables show the order of bag and comparisons as compiled from information gained from hunters checked on opening day of the duck season over the period of three years. It should be noted that the following figures are only a sample of the total hunters participating and does not include the evening shoot.

Per cent of total bag

<u>1953</u>		<u>1954</u>		<u>1955</u>	
No. Hunters - 207		No. Hunters - 729		No. Hunters - 639	
Black Duck	41 %	G. W. Teal	29.9%	Black Duck	27.10%
Mallard	16.6	B. W. Teal	25.3	G. W. Teal	20.7
B. W. Teal	14.6	Coots	12.9	B. W. Teal	18.1
G. W. Teal	10.9	Mallard	10.7	Mallard	17.5
Pintail	4.0	Black Duck	9.9	Widgeon (Baldpate)	3.3
Other species	12.9	Wood Duck	3.4	Ruddy Duck	2.5
		Ring-necked Duck	1.8	Ring-necked Duck	1.99
		Ruddy Duck	1.6	Hooded Merganser	1.99
		*P. B. Grebe	1.6	Lesser Scaup	
		Am. Merganser	.8	(Blue-bill)	1.90
		Scaup (Blue-bill)	.4	Redhead	1.90
		Pintail	.4	Pintail	1.59
		Shoveller	.4	Wood Duck	.59
		Golden-eye	.4	Greater Scaup	
		Widgeon (Baldpate)	.2	(Blue-bill)	.39
				*P. B. Grebe	.19

\* On protected list.





Reports show that 178 ducks were brought down but not retrieved by the shooter, whereas the hunters interviewed reported finding only three ducks which indicates that 25.8% of the total ducks brought down were not retrieved. In this connection, only 2.5% of the total hunters checked were using dogs to retrieve fallen ducks.

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WATERFOWL BANDING - GOGAMA - GRASSY RIVER AREA

by  
Alex Dzubin  
Canadian Wildlife Service.

This report covers an investigation of a possible duck banding station in the Gogama-Grassy River area of Ontario. Personnel of the Ontario Department of Lands and Forests had expressed their interest in such a venture. Authorization for the trip was received late in August, 1955.

There has been a general lack of banding information for the north-central portion of Ontario. If we are to successfully manage our waterfowl on a flyway basis, and, further, manage segments of populations within the flyway, more banding information will be invaluable. A station situated in the Gogama district would aid in the plotting of fall movements through this central region.

From a report of proposed banding projects for the summer of 1955 prepared by the U. S. Fish and Wildlife Service, the following is an excerpt regarding banding on Grassy Lake. Page 5, M.B.B. 14.

"9. Grassy Lake and other lakes in Hallebourg and S. Porcupine areas. Important due to strategic location, although only limited numbers of black ducks present. Concerned with both Mississippi and Atlantic Flyways. Late July aerial survey locally desirable to determine exact location for bait traps. One technical man, plus local help full or part time."

The main objective of the investigation was then, to determine the feasibility of setting up one or more banding stations in this vicinity.

On September 7, I proceeded to Gogama where I was met by Mr. Bob Dickson, District Forester. Arrangements were made for the trip into the Grassy River and a plane was made available that evening. On September 8, Mr. Gerry Coyne, Assistant District Forester, and I made a boat trip on the Grassy River from Washagami Lake to Canoeshed Lake and south again to Ferris Lake. I returned to Gogama later in the day. (Map 1).\*

\* A large map and four photographs accompanied this report.



## Description of Area

Grassy River is situated 30 miles northwest of Gogama. It is a slow meandering stream flowing north from Holliday (Washagami) Lake to Canoeshed Lake and then south again, past Relic and Ferris Lakes into Grassy Lake itself. The stream is never more than 50' broad and in some places is less than 6'.

The emergent vegetation of the river channel is made up of the following species: wild rice Zizania aquatica, hard-stem bulrush Scirpus acutus, horsetail Equisetum sp., water lily Nuphar sp., arrow leaf Sagittaria sp., sedge Carex sp., cattail Typha latifolia, and yellow cane Phragmites communis. The first three species are the most common and conspicuous emergents along the entire route of the river. Alder Alnus, dogwood Cornus stolonifera, willow Salix, cottonwood Populus, birch Betula, cedar Thuja and spruce Picea line the banks above the emergents.

The depth of the stream varies markedly. Many deep holes are found along its length but for the most part it is shallow - the depth varying from 6" to 4". Portions of the stream have gravel, rocky, sandy or muddy bottoms.

## Itinerary and Observations

September 7: A boat trip was made with Mr. Gerry Coyne along the shores of Washagami Lake and into Croft Lake. (Large rafts of scaup and ring-necked ducks use these lakes as rafting areas late in the fall). Stands of hard-stem bulrush and wild rice were common along the shores of these lakes. The bottom was sandy and firm in certain areas. Only 5 pairs of ducks were seen. Bait trapping stations could be set up at a number of bays about these lakes.

September 8: Left Washagami Lake and proceeded north along the Grassy River to Canoeshed Lake. For a mile north of Washagami Lake the river is fairly open with heavy stands of wild rice and hard-stem bulrush lining the shores. Shallow areas with muddy bottoms do occur but these did not appear to be satisfactory for banding sites. Beyond this, the stream is quite narrow and becomes choked with stands of wild rice. Two excellent potential banding sites were noted, one 1/4 mile south of a narrow rock cut, 2 miles west of Washagami Lake, and the other 1/4 mile north of this narrow rock cut. Both areas are near stands of wild rice, have shallow, hard, sandy bottoms, and have loafing areas nearby. At least 35 ducks were flushed out of the southern site and another 25 were flushed from the northern site. Mr. Coyne assured me that both areas were heavily used by ducks in the fall. North of the rock cut the Grassy River becomes very open and shallow.



Few wild rice beds are evident along the course of the stream until one reaches a point 1/2 mile south of Canoeshed Lake. In this section few emergents are visible, although heavy stands of sedge do occur on the shore. Mud flats and good loafing areas are common but few ducks were seen.

South of Canoeshed Lake the river becomes larger. Wild rice, hard-stem bulrush and horsetail grow in dense mats along both banks. Many deep holes are found in the river. Shallow areas do occur but few of these appeared suitable for banding sites.

Table I shows the number of birds censused on various parts of the Grassy River drainage. Most of the ducks were seen in a short section of stream adjacent to the "rock cut", 2 miles north of Washagami Lake. This area appeared to be the best suited to bait banding stations.

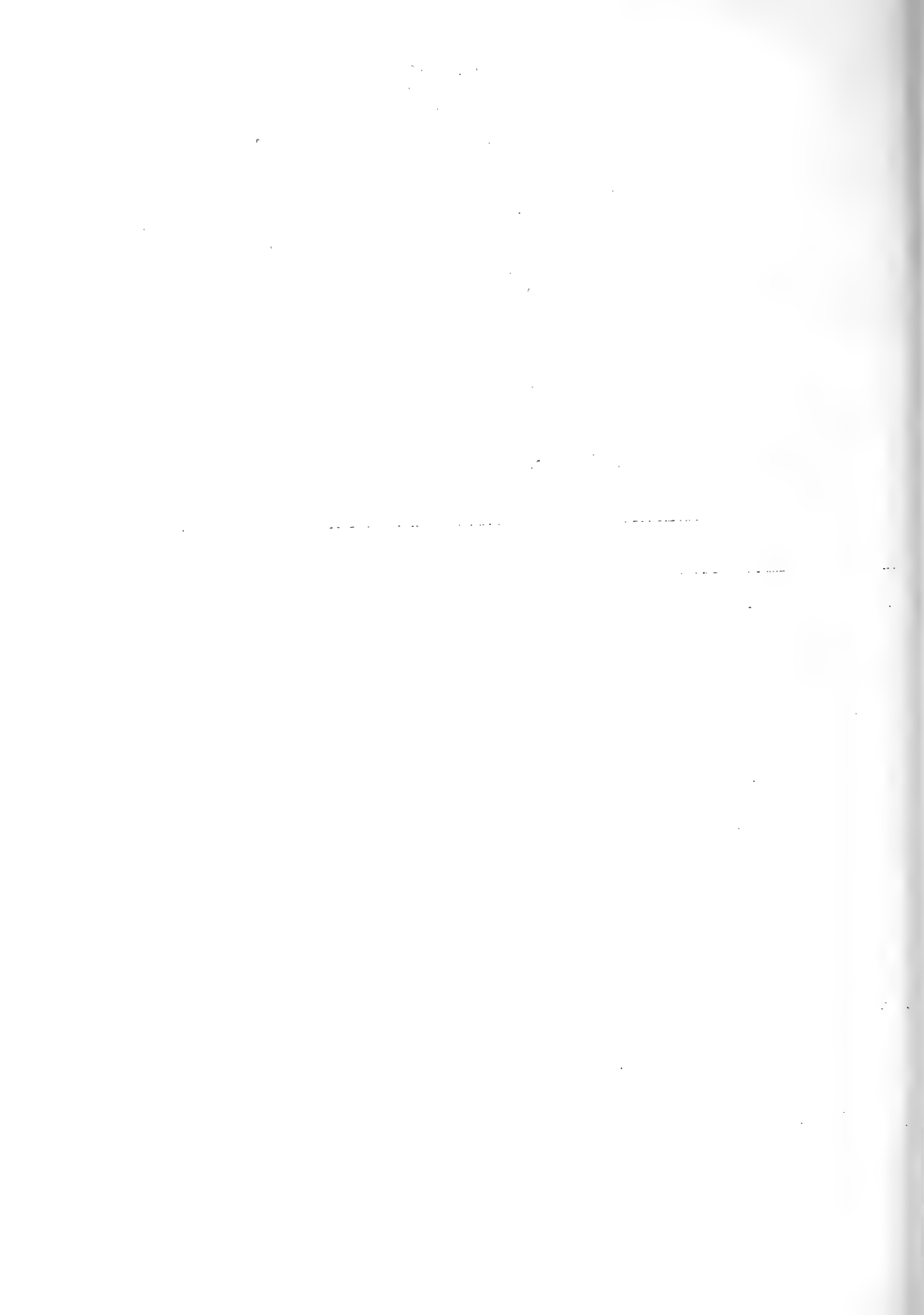
TABLE I - Census of Waterfowl in Grassy River Area  
September 7 and 8.

Area	Number of Birds Seen								Total
	Black Duck	Ring-neck	Mal-lard	G.W. Teal	Merg.	G-eye	Bald-pate	Un-known	
Washagami L. to Croft L.	4	2	2	2					10
Washagami L. to Rock Cut, 2 m. N.	156	27	5	1				2	191
Rock Cut to Canoeshed L.	22	22	2	3	4	1		2	56
Canoeshed L. to Relic Creek	46	16	4		12	10	1	1	90
TOTALS	228	67	13	6	16	11	1	5	347

The census includes ducks flying down the river.

### Interpretations

Because of the great abundance of wild rice along the entire route of the Grassy River, I felt reluctant to recommend a banding station for the river. However, areas of waterfowl concentrations are rare in this central region and a banding attempt if only fairly successful would still be of value. I





thought that some of the birds might possibly utilize artificial feeds and on September 9 I requested the Ottawa office to send six bags of grain to the Grassy River area. These were to be distributed at various points to determine whether or not artificial feeds were as palatable as the wild rice.

On September 19, Mr. Gerry Coyne scattered one bag of scratch feed, one of whole corn, and one of barley in three sites. Two of these were on Croft Lake and the third was on the southwest shore of Washagami Lake. A letter dated September 27, from Mr. Coyne, indicated that in two of the three baited areas, black ducks and mallards utilized the grains, He writes: "We therefore believe that the ducks are subject to attraction by artificial feeding even though an abundance of natural food is found in the area."

### Conclusions

1. The Grassy River area is a good concentration area for black ducks, mallards and ring-necks during August and September. Later in the autumn migrating scaup also stop and feed here. (Verified by Mr. Gerry Coyne, Assistant District Forester, who has spent several autumns in the region).
2. An experimental planting of cereal grains in several areas showed that mallards and black ducks will concentrate in the baited region and feed on these grains.
3. At least three possible banding sites were noted. All were shallow and had sandy bottoms. Two of these were 2 miles north of Washagami Lake near a rock cut. The third was on the east shoreline of Washagami Lake itself. (Mr. Gerry Coyne has noted two more banding sites, one on the southwest shore of Washagami Lake and one on Croft Lake). All banding sites could easily be serviced from the Lands and Forests cabin on Washagami Lake. Banding sites are marked on Map I.

### Recommendations

1. A banding station should be set up on the Grassy River-Washagami Lake area from August 1 to September 15 of 1956. The initiation of this project will depend on:
  - A. Personnel available for such a banding program.
  - B. Monies available for equipment (See appendix).
  - C. The co-operative efforts of Department of Lands and Forests in regards to personnel to help in the banding program. Also such co-operative effort as will be required to transport by plane or boat, men, materials and food. This would not require



a great deal of extra effort as an aeroplane regularly services wild rice pickers in the area from August 10 to September 10. If this is not feasible because of a prolonged fire season then grain and equipment might be flown in during May or June and stored at the Washagami Lake cabin.

Appendix

Estimate of Expenses

Two men (one guide and one technician) working five bait traps for 45 days. Guide probably available locally.

Cabin on Washagami Lake available.

If available, canoe and motor to be provided by Ontario

Department of Lands and Forests - Gogama District.

Train fare - Ottawa to Gogama and return	37.00
Meals enroute	10.00
Food for 2 men @ \$30/wk. (6 weeks)	180.00
1 Gasoline stove	17.00
1 Gasoline lamp	15.00
15 gals. Naptha gas @ 75¢	11.00
Gas containers	3.00
Cooking utensils, axes, shovel, flashlight, life jackets, rope, wire, miscellaneous.	50.00
Oil and gas for outboard	120.00
Spare parts, outboard, stove, lamp	10.00
1 - 150 ft. cotton seine, 6' wide for top of traps	40.00
1 Dip net, 24" hoop	8.50
3 rolls 14 qu. welded wire 1" x 2"	90.00
1 ton whole corn	80.00
½ ton mixed wheat and barley	45.00
Freight for feed and trapping equip. - Ottawa-Gogama.	50.00
25 aluminum tubes ½", 6' length @ 12¢/ft.	18.00
Pliers, bands, schedules, notebooks, pencils, etc.	

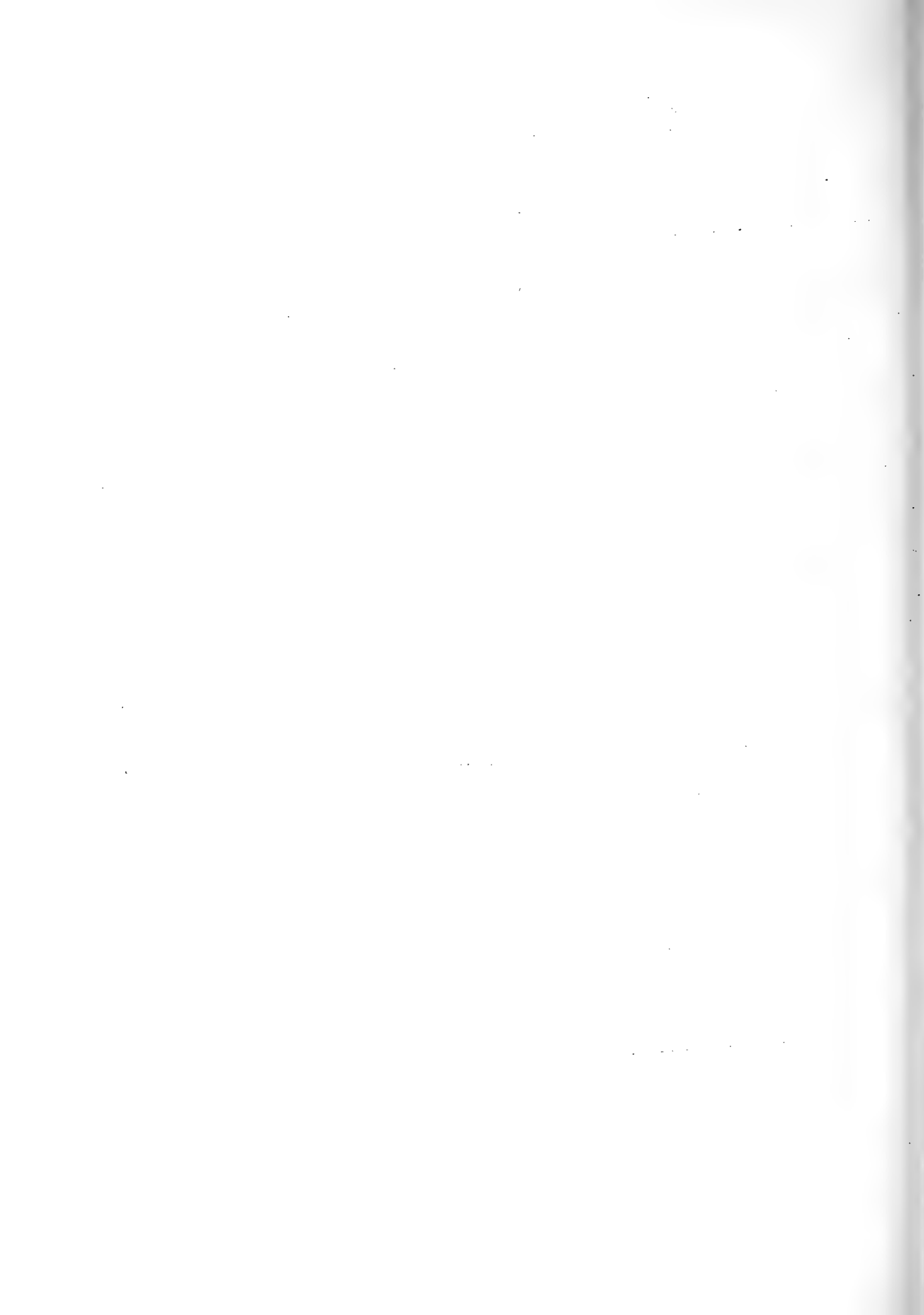
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TOTAL \$784.00

2 sleeping bags and 2 air mattresses and perhaps other equipment mentioned above to be issued.

Cost of feed may be lower if purchased at Sudbury or North Bay.

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## HARVESTING OF WILD RICE, FORT FRANCES FOREST AREA

by  
H. E. Pearson

During the past 10 years, the method of harvesting rice has greatly changed. Years back, the Indians harvested the rice by the use of sticks or paddles in which the stocks were held over the canoe and the ripe stocks and kernals were beaten off into the canoe. They were then roasted and the process completed by the Indian so that the product was ready for market when sold.

The use of mechanical pickers and machines to thrash the rice was later introduced. These mechanical methods required few men as operators, with the result the harvesting operations carried on by the Indians looked as if it may be a thing of the past, if this system were introduced here, which appeared to be the intent. This would mean the Indians were going to lose this annual revenue which they depended upon for part of their livelihood.

To protect the Indian, Land Use Permits were issued to the Department of Indian Affairs covering the various rice beds. Otherwise, these beds would have been left open to the wild rice merchants with their mechanical pickers. These same merchants had established threshers and roasters and wanted the rice just as picked. In this way, they could buy it a lot cheaper and process it themselves and possibly make a higher profit percentage on the transaction.

During the past two years, and very noticeably this past season, much of the rice was picked green, some of it still in the milk, by the Indians, possibly with the thought it would weigh more. However, they forgot that the price offered for this would be much lower, with the result the Indians actually lost on the deal.

Most of the above rice was sold by the Indians of this District to operators in the United States, and in conversation with individuals who visited the plant of these operators, we were informed that tons of these green heads had to be discarded, since the heads were still in the milk state or through heating. However, owing to the low price paid the Indians, the operators were still able to make themselves a substantial profit.

This appears to have been a lot of waste and a loss of revenue to the pickers. Also, in cutting the green heads off, very little was left to re-seed the rice beds, and to

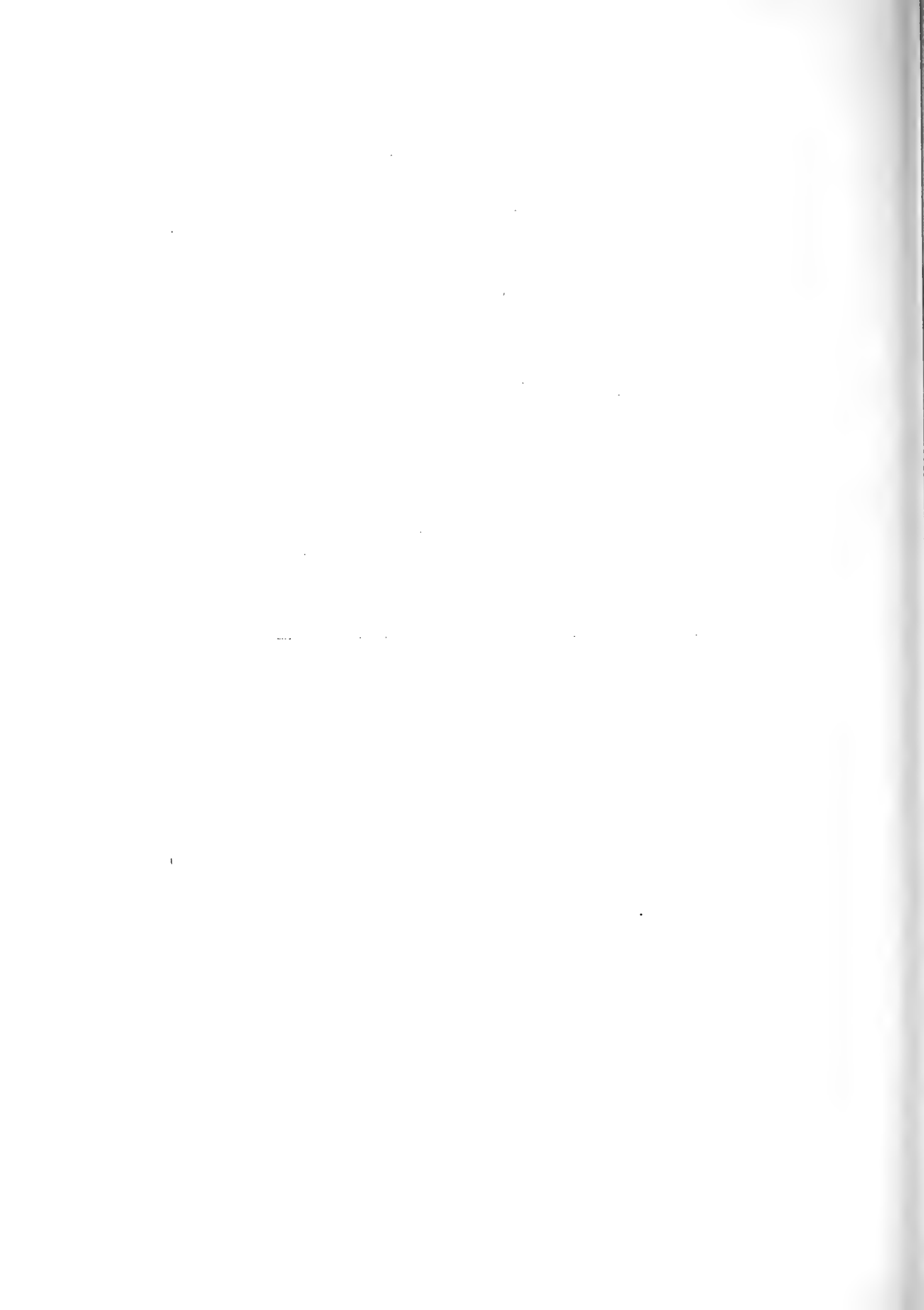


overcome this, regulations should be set up whereby the start of the harvesting of rice be prohibited until such time as the pickers be given the go ahead by Conservation Officers or some Departmental employee who has inspected the rice bed and found it in proper condition. It is also suggested that the Indians be encouraged to process much of the rice themselves, as there is always a good demand from Tourists and others. The Indians could sell this at half what is asked on the local market and still make themselves a good margin of wages.

The excuse of the large operators and buyers in not wanting the Indians to process it themselves is that too much of it is broken up and unsalable on the market. This is quite true in many instances, but could be overcome by grading.

Enquiries are being had each year from Tourists as to where they might procure rice from the Indians, as they prefer the Indian way of processing. The flavour appears quite different when it is roasted by the Indians than when processed by the large operators. This, however, could be a matter of opinion.

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REPORT OF CAPTURE OF MARKED DEER

PARRY SOUND DISTRICT

by  
F. A. Walden  
and  
W. L. MacKinnon

In the winter of 1950, 17 deer were made available to the Department of Lands and Forests by the National Parks Service. These deer were live-trapped on Beausoleil Island, a part of the Georgian Bay Islands National Park, and transported to several points of release in Parry Sound Forest District. One was destroyed and of the 16 released 11 were marked with ear tags.

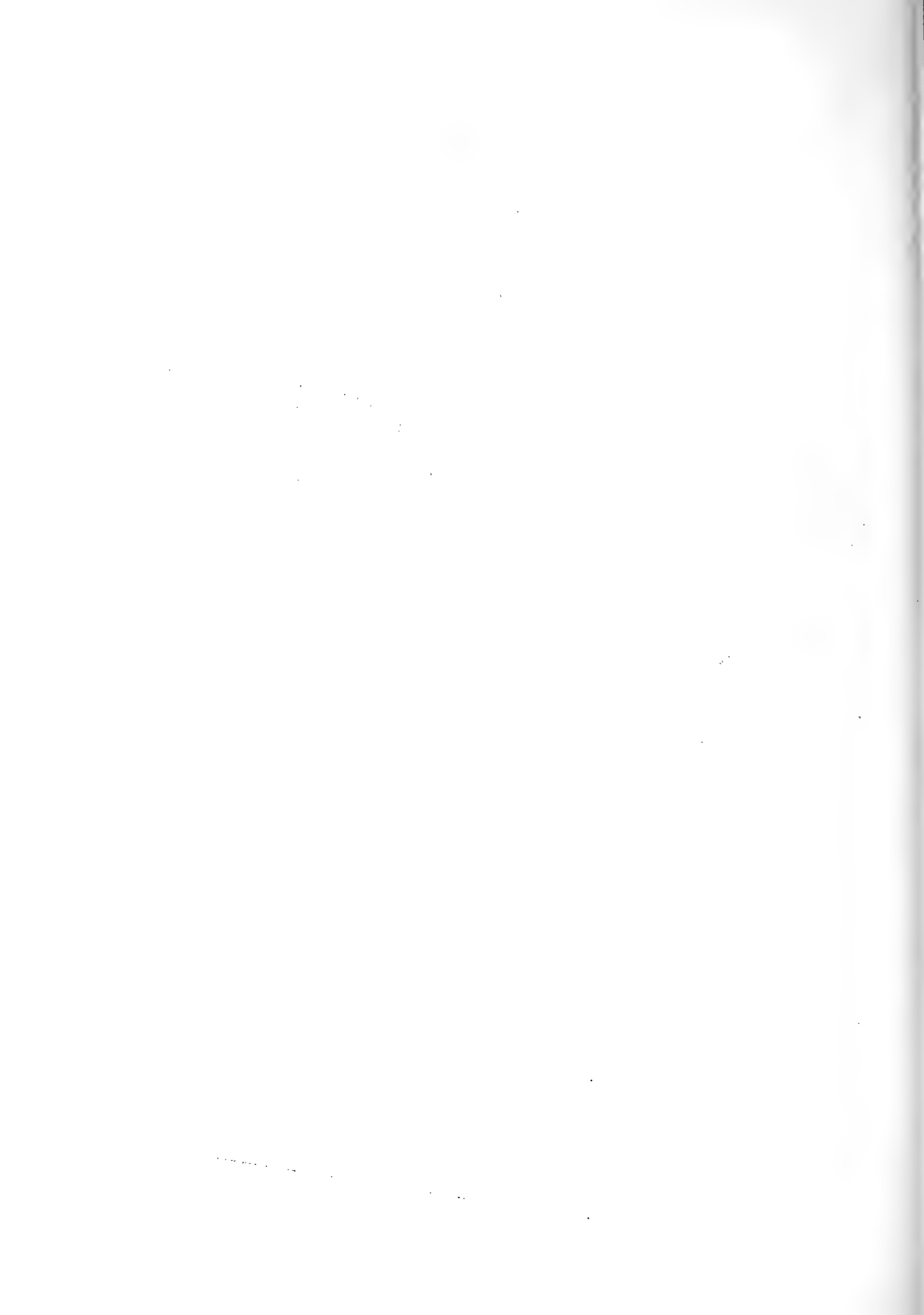
On November 13, 1955, a hunter reported the capture of a doe bearing one of the ear tags. This deer was shot in the township of Freeman, District of Muskoka, some six or eight miles from the point of release in the northerly part of the township of Medora. A period of five years and nine months had elapsed since its release on February 22, 1950.

Estimates of age of all deer handled were made as the deer were released, though accuracy was limited since the deer were transported in closed wooden boxes, and release was effected in darkness. Observation was limited to a brief period at the actual time of release. Tagging was accomplished by prying up one board of the box and working by flashlight.

The age of this deer was estimated to be one year, though nine months is probably a more accurate expression of its age.

The deer was not available for examination at the checking station. An effort is being made to obtain the lower jaws for study.

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EXPERIMENTAL MOOSE INVESTIGATIONS USING  
A HELICOPTER, CARRIED OUT IN THE  
CEDAR RIVER AREA, SIOUX LOOKOUT  
DISTRICT, AUGUST, 1954.

by  
A. T. Cringan and E. H. Stone

The writers did 15 hours and 25 minutes of helicopter flying in the Cedar River area, between August 19th and 21st, 1954. The general objective of the work was to further check the usefulness of the helicopter in making big game, particularly moose investigations. Flights were made in the same general area in which a month's ground work was done earlier in the summer, so that results of the surveys (two) could be compared. Marking experiments were also carried out during the ground work program and an additional objective of the helicopter work was to check on the success of these marking experiments.

Methods

Both authors participated in the short flight on the evening of August 19, so that they would use a similar approach during further flights. The 1000 square mile sample area, consisting essentially of the Cedar River drainage area, but including also adjacent parts of areas draining into Lac Seul, was then divided into six parts, each to be the subject of one flight.

Morning, afternoon, and evening flights were made, the observers alternating, commencing with E. H. Stone on the August 20th morning flight. The morning flights were commenced as early as weather would permit.

Average altitude and velocity were about 300 feet, and 30 m.p.h. respectively. Random flight lines were flown. Intensity of coverage was so low, one hour's flying per 65 square miles of map area, that only the most open, best-looking moose habitats had to be flown, and very little country was flown over twice or oftener.

Use of a half-ton truck made gassing up at points along the Red Lake Highway possible, thereby further reducing the amount of duplicate flying necessary.



All flights except the final flight were made with the doors off the helicopter. This greatly improved visibility. This practice is strongly to be recommended, for future helicopter surveys, whenever weather permits.

Results

The results of the seven individual flights are given in Table I.

TABLE I - Results of August, 1954, Helicopter Flights

<u>Flight No.</u>	<u>Observers</u>	<u>Duration</u>	<u>Time of Day</u>	<u>Moose Seen</u>	<u>Deer Seen</u>	<u>Bears Seen</u>
1	Cringan Stone	1 hr. 20 min.	evening	3	5	
2	Stone	2 hr. 35 min.	morning	5	9	
3	Cringan	2 hr. 35 min.	afternoon	1	6	
4	Stone	2 hr. 40 min.	evening	8	8	2
5	Cringan	2 hr. 30 min.	morning	5	2	
6	Stone	2 hr. 25 min.	afternoon	0	4	
7	Cringan	1 hr. 20 min.	evening	3	0	1
TOTAL		15 hr. 25 min.		25	34	3
Average Per Hour				1.6	2.2	0.2

By Time of Day

1-4-7	5 hr. 20 min.	evening	14	13	3
average per hour		evening	2.6	2.4	0.6
2-5	5 hr. 05 min.	morning	10	11	
average per hour		morning	2.0	2.2	
3-6	5 hr. 00 min.	afternoon	1	10	
average per hour		afternoon	0.2	2.0	
1-2-4-5-7	10 hr. 25 min.	evening & morning	24	24	3
average per hour	10 hr. 25 min.		2.3	2.3	0.3

By Observer

<u>Flight Number</u>	<u>Duration</u>	<u>Observer</u>	<u>Moose Seen</u>	<u>Deer Seen</u>	<u>Bears Seen</u>
1-2-4-6	9 hr. 00 min.	Stone	16	26	2
1-2-4-6	per hour	Stone	1.8	2.9	0.2
1-3-5-7	7 hr. 45 min.	Cringan	12	13	1
1-3-5-7	per hour	Cringan	1.6	1.7	0.1



Only one moose was seen twice, and therefore the 25 sightings concerned 24 different animals. These were as follows:

1 cow with single calf,  
1 cow with yearling cow,  
10 adult cows,  
1 yearling cow,  
5 adult bulls,  
4 yearling bulls.

Total

or 9 bulls, 14 cows, 1 calf;  
5 adult bulls, 4 yearling bulls, 12 adult cows,  
2 yearling cows, 1 calf.

It was more difficult to classify deer as to sex and age than moose. The following is a summary of deer observations made:

4 does with twin fawns,  
1 doe with single fawn (?),  
1 doe,  
2 bucks with does,  
2 bucks,  
13 unclassified deer.

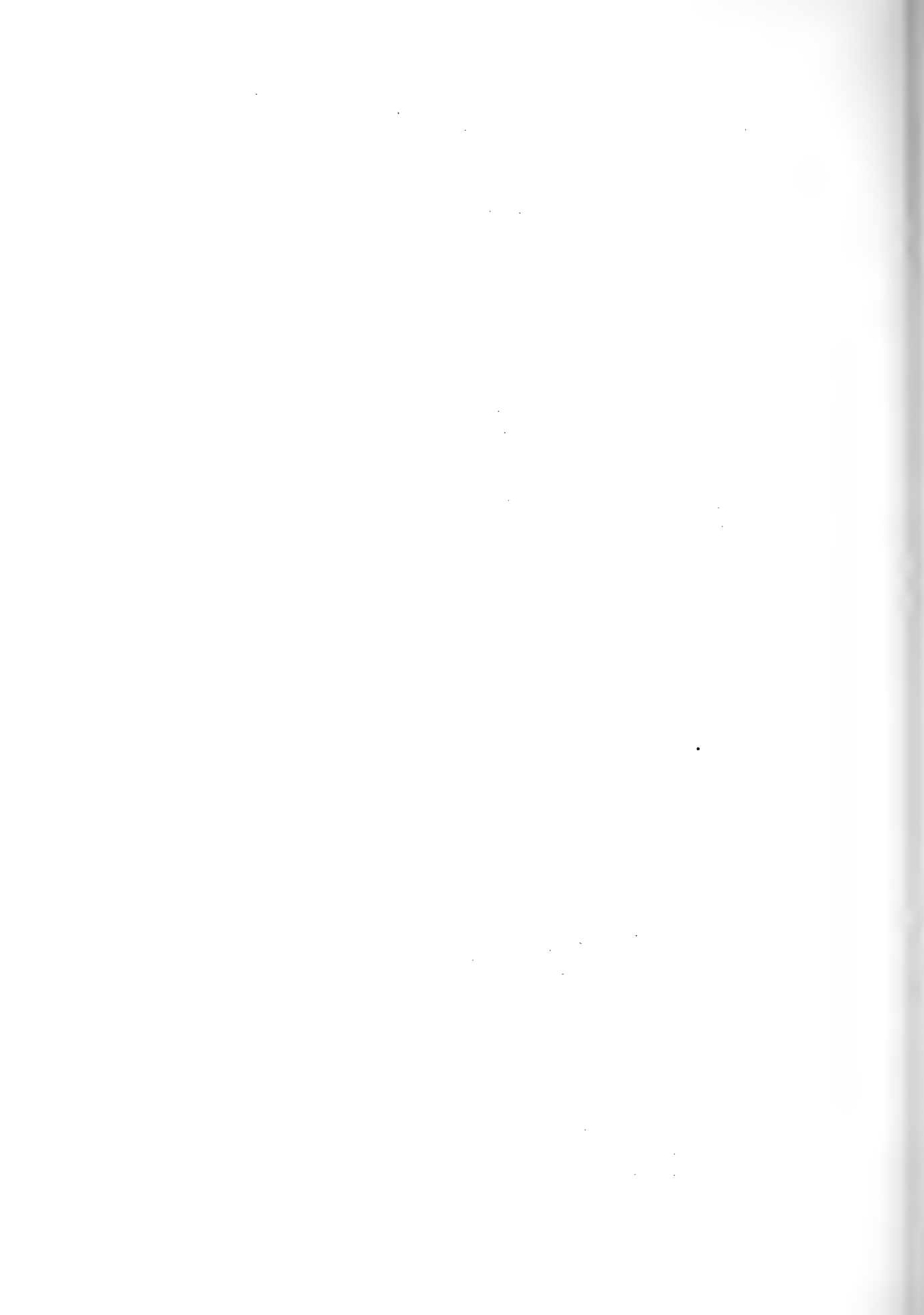
Total: 4 bucks, 8 does, 9 fawns, 13 unclassified deer.

Discussion

Moose Age Ratios

This helicopter survey yielded the observation of only one calf among 24 different moose seen. That is, calves composed only 4% of the moose seen. Undoubtedly there is a much higher proportion of calves in the herd than indicated by these figures. The discrepancy is likely to be explained through some peculiarity of moose behaviour which we do not yet fully understand, or else through weaknesses in the technique - such as calves being very difficult to see through leafy brush at this time of the year.

Last October, a shorter helicopter survey yielded the observation of 4 calves among 14 different moose seen, and therefore calves constituted 29% of this sample. This may indicate that a better calf count is obtained in the fall.





This year six out of 23 yearling or older moose seen were judged to be yearlings - 26% of such moose seen. These belong to the 1953 year-class, the same animals which were calves during the October, 1953 helicopter survey, when they constituted 29% of the moose seen. (Study of jawbones of 41 yearling or older moose killed in the Sioux Lookout District in 1953 showed that 12, or 29% of these, were yearlings.)

In brief, it appears that the August helicopter survey may help us to establish the yearling:adult ratio, but is inadequate for helping us to arrive at the proportion of calves in the herd. Still, the total number of sightings was rather small to lead to any accurate expression of age ratio.

### Sex Ratio

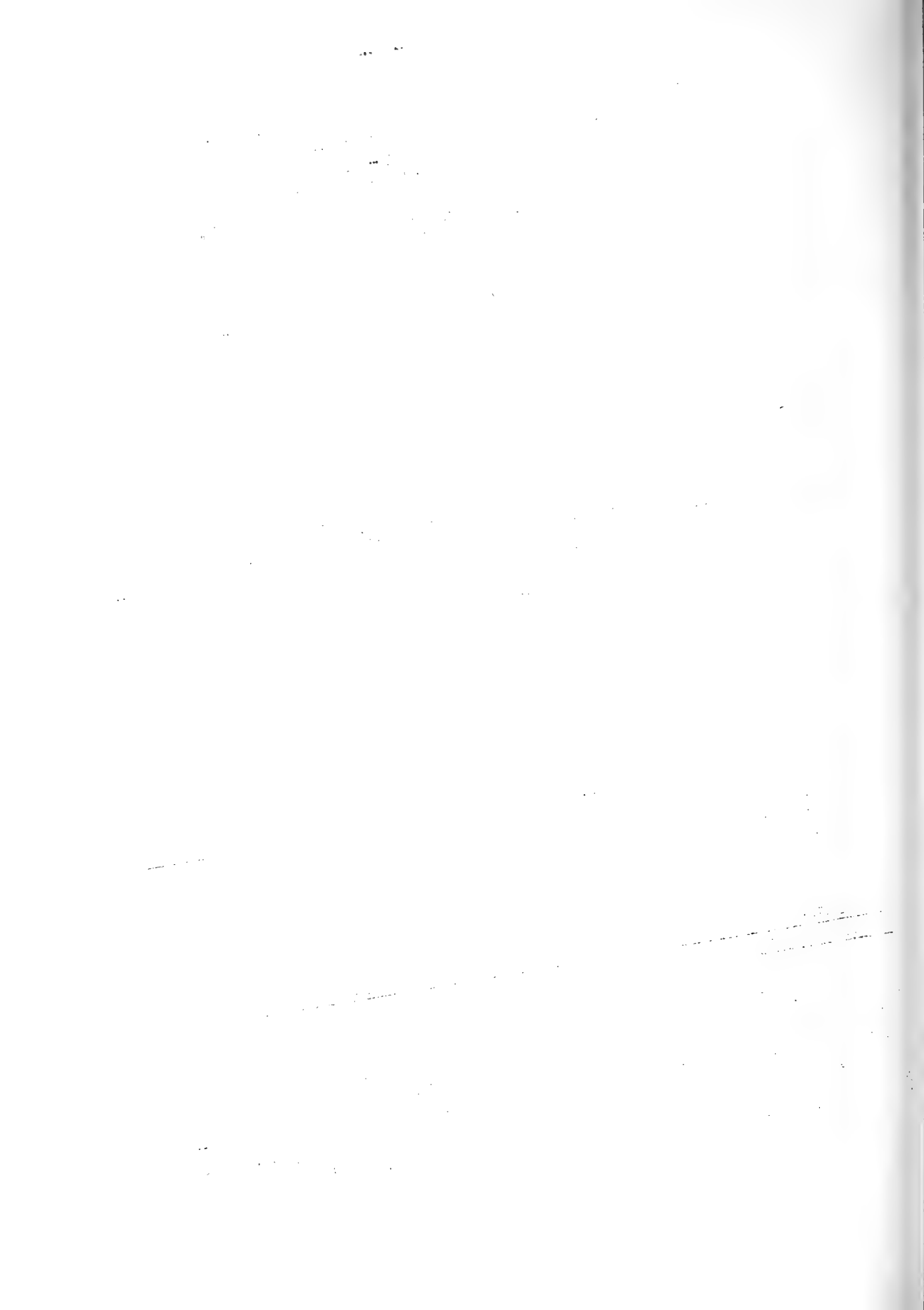
The sex of all moose older than calves seen from the helicopter during this survey was readily determinable. Nine bulls and fourteen cows were seen. The ratios indicated by these numbers are 39:61, or 64:100, or 100:156. Actually, the yearling sex ratio was four bulls to two cows and the adult sex ratio, five bulls to nine cows. The total sample is much too small to be expected to give an accurate sex ratio of the total herd.

We saw more bulls than we expected. There is possibly some sexual difference in behaviour which accounts for this. The following indicates the sex ratio of moose observed at different times of the day:

	<u>Bulls</u>	<u>Cows</u>	<u>Calves</u>
Morning	5	5	
Afternoon	1	0	
Evening	3	10	1
	<u>9</u>	<u>15</u>	<u>1</u>

### Variation in Frequency of Moose Observations with Time of Day

An average of 2.3 moose per hour were seen during morning and evening flights, as compared to 0.2 moose per hour during afternoon flights. This appears to be a very striking difference, even after allowing for other variables. During October, 1953, helicopter flights, 2.3 moose per hour were seen during morning flights, and 1.7 moose per hour during afternoon flights.



Further investigations should be aimed at establishing the best time of day to fly during different months of the year, so that flying could be confined to the most productive hours.

#### Variation in Frequency of Moose Observation with Observer

E. H. Stone saw an average of 1.8 moose per hour flying, while A. T. Cringan saw only 1.6 moose per hour. This difference is slight but Stone saw many more deer per hour's flying than Cringan. Individual differences in observing efficiency may prove to be important variables, and possibly will have to be considered in future flights.

#### Variation in Frequency of Moose Observations with Weather

The weather was fine during flights number 1, 2, 3, and 4, when 1.9 moose were seen per hour of flying. It was much poorer during flights number 5, 6 and 7, being cloudy and quite windy except for about an hour during flight number 5, and only 1.3 moose per hour were seen during these flights. This difference seems sufficiently large to aid in the selection of future flight times.

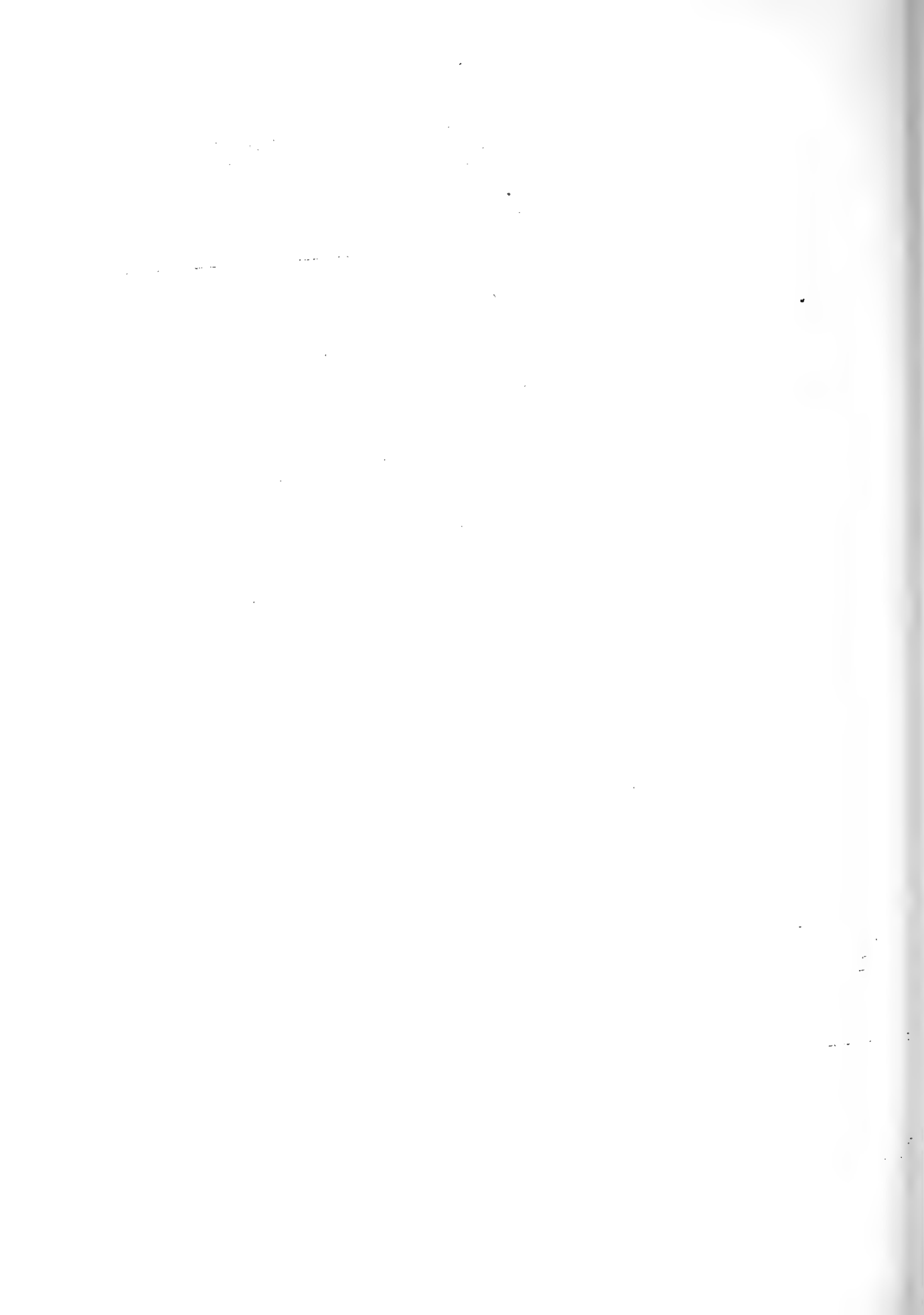
#### Probable Variation in Frequency of Moose Observations with Season.

It was very difficult to spot moose in the bush during this August's survey, owing to the dense, leafy cover in many places. We probably missed seeing a lot of adult moose, and some calves belonging to cows we saw, for this reason. A better proportion of moose seen during the October 1, 1953, flights were in the bush. Therefore, future flights should be made in the leaf-free period of the year.

Undoubtedly one of the greatest aids to observing moose from a helicopter would be snow cover. It is imperative that we test the technique in the late fall or early winter, as snow could easily increase the efficiency of the technique by several hundred percent.

#### Helicopter Moose Flying Contrasted with Other Techniques.

This survey produced 25 sightings of 24 different moose during 15 hours and 25 minutes of helicopter flying or 1.6 sightings per hour. Elimination of low efficiency afternoon flights would have changed the results to 24 sightings of 23 different moose during 10 hours and 25 minutes of flying, or 2.3 sightings per hour.



Our pilot estimated that this service was costing about \$75 per hour. Actual flying costs were therefore about \$47 per sighting, and might have been as low as \$33 per sighting, had we not flown during the afternoon. In addition, there are observers' salaries and travelling expenses which are properly chargeable to the investigation.

During July and early August, a field party operated in this area for a month, and collected 27 sightings of moose. A two-man field party might be maintained at a cost of \$30 per day. The 27 sightings could then be gathered at a cost of \$930.00 or \$34 per sighting.

The helicopter survey therefore appears to be slightly more costly than the ground survey. However, comparable results could be obtained by helicopter in about 1/10th the time required for a ground survey.

A year ago, the senior author estimated that the helicopter could be used to collect about four sightings per hour's flying. We still feel that such a rate could be achieved, but that to do so would require selection of only the best times to fly. For maximum efficiency, probably only about 20 hours per week would be really worth flying. We should now make every effort to determine at what time of year the best results can be achieved.

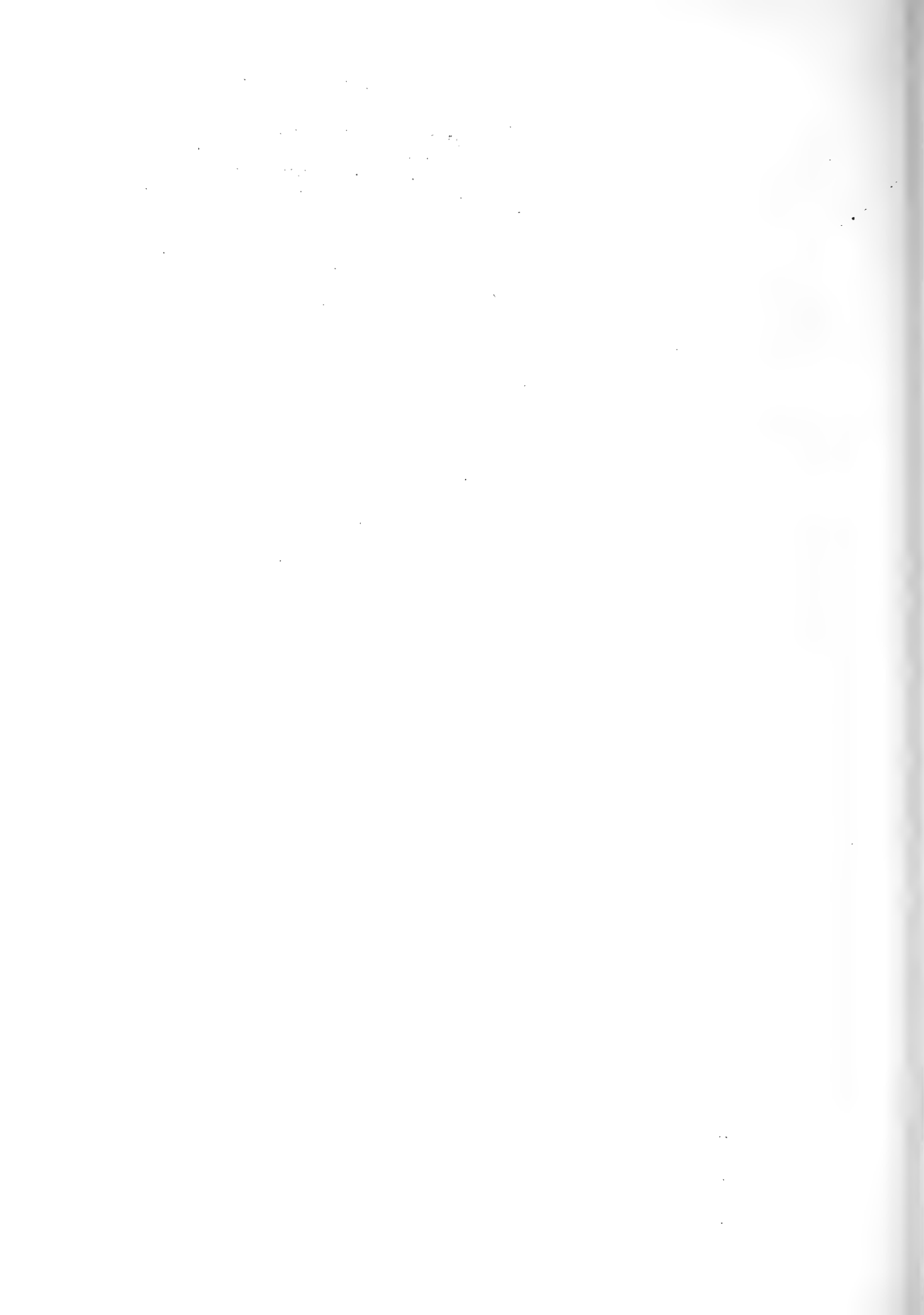
### Deer Observations

Considerable numbers of deer were seen while making these moose observations. Valuable information, such as fawn counts and adult sex ratios, could probably be collected while making moose surveys in the future. However, we will have to be careful not to take too much of the observer's time in note-keeping, as this would decrease the efficiency of the technique.

### Observations of Other Wildlife and Wildlife Conditions

Low altitude moose flying yields abundant opportunities for other wildlife investigations, such as:

- waterfowl counts,
- waterfowl and muskrat habitat descriptions,
- census of large birds such as eagles, herons, and cormorants,
- big game habitat evaluation,
- beaver colony census,
- fishing pressure survey (boat and angler counts),
- description of lakes and streams from fisheries viewpoint.



If any or all of these could be conducted as incidental surveys to future moose investigations, without detracting from the value of the main survey, then obviously the technique itself would become more worthwhile. It should be possible to facilitate multi-purpose helicopter flights by devising a tape-recorder for use in the helicopter. The observer could then observe during most of the flying time, and record all of his observations on the tape-recorder. A stenographer could catalogue and re-arrange the observations from the record.

Should such a device be perfected, the only time an observer would have to cease observing would be while navigating. If prescribed flight lines were laid out, the pilot could navigate while the observer observed for nearly 100% of the time.

### Summary

(1) 25 moose, 34 deer, and 3 bears were seen during 15 hours and 25 minutes of helicopter flying.

(2) It is not believed that either an accurate moose age ratio or sex ratio was indicated by the results of this flying.

(3) During August, morning and evening flights are more productive of moose observations than afternoon flights.

(4) There may be variations in the ability to spot moose between individual observers.

(5) Weather seems to influence moose behaviour enough to be considered in a helicopter survey flight program.

(6) Leafy cover makes observation of moose from a helicopter more difficult.

(7) It is speculated that snow cover would greatly increase the efficiency of a helicopter moose survey.

(8) A helicopter survey is perhaps slightly more expensive, but a great deal quicker, than a ground survey yielding comparable results.

(9) Important observations relating to deer and other wildlife can also be made from a helicopter while engaged primarily in moose investigations.





(10) A portable tape-recorder is suggested as a device which would widen the scope of an observer engaged in helicopter moose investigations.

### Recommendations

(1) That sample helicopter flying be done in the fall, after there is a snow cover, but before the second week of December, when bull moose commence to shed their antlers.

(2) That an effort be made to develop a portable tape-recorder, suitable for use in a helicopter, so that the observer can be relieved of the time-consuming duties of note-keeping.

### Appendix - Moose Observations During August, 1954, Helicopter Survey.

- |                 |   |
|-----------------|---|
| (1) Flight #1;  | adult cow in bush, near shore, west end Peephole Lake.                            |
| (2) Flight #1;  | adult cow in bush, near shore, north end Ord Lake.                                |
| (3) Flight #1;  | adult bull in Ord Creek, near upstream portage.                                   |
| (4) Flight #2;  | same cow same place as (1).   |
| (5) Flight #2;  | cow in spruce swamp, near shore of small lake south of Pipette Lake.              |
| (6) Flight #2;  | yearling cow in water, north end Thaddeus Lake.                                   |
| (7) Flight #2;  | adult bull in water, north end of Miller Lake.                                    |
| (8) Flight #2;  | adult cow in creek near west end of Puzzle Bay, Ord Lake.                         |
| (9) Flight #2;  | yearling bull in water of lake between Pipette and Glider Lakes.                  |
| (10) Flight #4; | adult cow in water of Keynote Lake, west side near north end.                     |
| (11) Flight #4; | adult cow in water of a small lake to the east of Aerobus Lake.                   |
| (12) Flight #4; | adult cow in marsh bordering creek into southwest corner of Aerobus Lake.         |
| (13) Flight #4; | yearling bull in bush near shore of small lake 3 miles north of Bornite Lake.     |
| (14) Flight #4; | adult bull in bush at shore of small lake just west of north end of Aerobus Lake. |
| (15) Flight #4; | adult cow in marsh of small lake just east of north end of Aerobus Lake.          |



- (16) & (17) Flight #4; adult cow and one calf in water of small lake northeast of west arm of Wabaskang Lake.
- (18) & (19) Flight #5; two yearling bulls in marsh bordering west side of Keynote Lake near north end.
- (20), (21) & (22)  
Flight #5; two adult bulls and cow, in small lake near southeast corner of Anishinabi Lake.
- (23) & (24) Flight #7; adult cow and yearling cow, in cut-over spruce swamp, 200 yards from Highway 105 at its junction with Camp Robinson Road; standing in alders when seen at 6:00 p.m. CDT, and bedded down in same place at 7:05 p.m.
- (25) Flight #7; adult cow in creek, north side of Cliff Lake.
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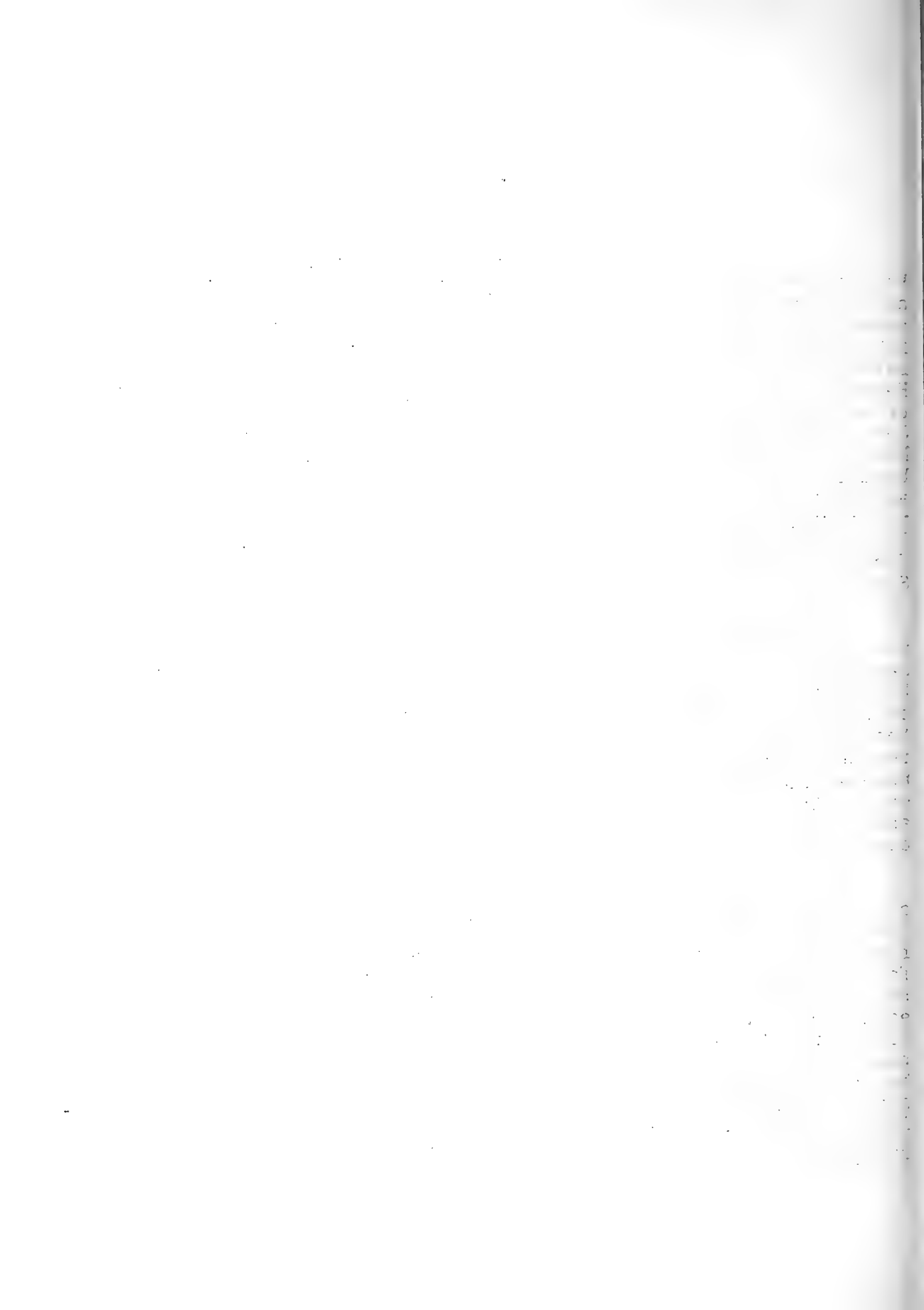
## NOGIES CREEK FISH SANCTUARY

by  
J. C. Weir

A large portion of Nogies Creek (Harvey Brook) lying in Harvey and Galway Townships, County of Peterborough, was established and authorized as a Fish Sanctuary on July 11th, 1940. The "closed area" in question is located some seven miles northeast of Bobcaygeon and has for its boundaries the dam at the foot of Bass Lake on the north and the south line of Lot 27, Concession 17, Harvey, on the south. This means that about one mile of stream below the Big Marsh is included in the Sanctuary. The whole Sanctuary consists of a hundred (100) acre lake known as the Big Marsh and about four miles of meandering stream, 20-50 yards wide, bordered by flooded land. Since 1940, the taking of fish by any means in this area has been prohibited and, of late years, the taking of bullfrogs has also been prohibited. In October of 1949 the Department of Lands and Forests built a new dam at the foot of the Big Marsh to control the water level within the Sanctuary.

Nogies Creek is an excellent rearing ground for maskinonge and largemouth black bass. The upper part of the Sanctuary is more rocky and affords limited habitat for smallmouth black bass. The Sanctuary is unique in that it contains no carp or pickerel populations and is a geographical unit from which the fish cannot escape on their own. The maskinonge and bass responded rapidly to the closure and soon an over-population was noted. Subsequently in October of 1947 and 1948, the Sanctuary was netted by Department netting crews and 334 adult maskinonge and 1097 adult largemouth black bass were transferred to adjacent open waters.

In 1951 Nogies Creek Fish Sanctuary was chosen as the site for a maskinonge research project to be sponsored by the Toronto Anglers' and Hunters' Association. Since then, they have financed a senior or graduate student and an assistant each summer for a period of about five months. They have also paid the rental charges on the buildings used and have assisted in supplying equipment and casual help. Prizes for the recapture of tagged fish; printing and advertising costs, etcetera, have also been paid by the Association. The purpose of the Project is to do basic fundamental research on the maskinonge in a natural habitat and to study the maskinonge population of Nogies Creek in particular. It is hoped that the information so gained will be of value in the management of maskinonge populations throughout the Province.



Since 1951, the procedure has been to live-trap with nets as many fish as possible during May and June and, after tagging, to return all fish to the Sanctuary. Each maskinonge and bass is tagged by tying a small, yellow plastic disc to the cheek bone with monofilament line. Each fish is measured and scale sampled (to determine the age) and all maskinonge are weighed. This information, together with the date, tag number and place (net number) of capture is recorded on a card for each fish. During subsequent netting in the Sanctuary, the ratio of tagged (recaptures) to untagged fish in the catch is the basis for a further calculation of the total fish population. Recaptures also give us information on the movements, rate of growth and general health of each fish so captured.

In 1952 an over-abundance of bass and maskinonge was again noted in the Sanctuary and a Department netting crew was brought in during October to reduce the fish population by transferring a number to Pigeon and Sturgeon Lakes. This work has been the Department's main contribution to the project and has continued each Fall up to the present date. Of the fish captured, all untagged lunge and part of the bass catch are tagged and examined before their release in public waters. A great deal of further information is collected in this way as the Fall catch greatly exceeds the catch of May and June.

Each year, a number of these tagged fish from the Sanctuary are captured by anglers in Pigeon and Sturgeon Lakes. If the tags are forwarded to the Department or to the various centres at Bobcaygeon, the angler may win a prize in the Lucky Draw Contest sponsored by the Toronto Anglers' and Hunters' Association and the Department will be very pleased to receive the information relevant to the capture of each tagged fish. In this way we learn a good deal more about the movements and rate of growth of such fish.

On November 2nd, 1955, the Department completed a very successful Fall netting programme on Nogies Creek. The nets were operated for a longer period this year and a special effort was made to increase the catch of lunge. The bass population continues to be tremendous and a record catch was made. In all 310 maskinonge, 1761 largemouth bass and 83 smallmouth bass were captured and transferred to the public fishing waters of Pigeon and Sturgeon Lakes. The distribution of these fish was as follows:

<u>Lake</u>	<u>Lunge</u>	<u>L. M. Bass</u>	<u>S. M. Bass</u>	<u>Total Bass</u>
Pigeon Lake	151	899	41	940
Sturgeon Lake	159	862	42	904
	<u>310</u>	<u>1761</u>	<u>83</u>	<u>1844</u>





The bass were all legal size and 69 lunge or 22% were legal length. In all, counting recaptured tagged fish, 382 tagged bass were released (plus 1462 untagged) and 310 or all of the maskinonge.

A summary of all fish removed from the Sanctuary to date is as follows:

<u>Year</u>	<u>Lunge</u>	<u>L. M. Bass</u>	<u>S. M. Bass</u>	<u>Total Bass</u>
1947	136	763		763
1948	198	334		334
1952	156	616		616
1953	143	1289	97	1386
1954	129	1073	14	1087
1955	310	1761	83	1844
	<u>1072</u>	<u>5836</u>	<u>194</u>	<u>6030</u>

The above figures represent the number of adult fish that have been transferred to public waters from the Sanctuary to date and also indicate the practical value of such a Sanctuary apart from its research possibilities.

As part of the research programme, a number of hatchery reared lunge fingerlings (4-5 ins. in length) have been fin-clipped and released in the Sanctuary each year since 1952. The plantings have been as follows:

<u>Year</u>	<u>Number of Fingerlings</u>
1952	365
1953	560
1954	1145
1955	1160

In subsequent years, it is hoped that a number of these fish will be captured in nets and identified as hatchery stock in order to check on the success of planting lunge fingerlings in areas already dominated by this species and bass.

Already a good deal has been learned from the Sanctuary and it is hoped that the Project will be continued and expanded. Mr. Ed. Crossman, graduate student in charge from 1951 to and including 1953, qualified for his M.A. degree by presenting a thesis on the "Maskinonge Population of Nogies Creek." The entire area of the Sanctuary has been carefully sounded and mapped; the standing populations of bass and lunge have been calculated; hundreds of fish have been measured and aged; movements of tagged fish within the Sanctuary and in Pigeon and Sturgeon Lakes have



been plotted; a creel census record of the fishing in Pigeon and Sturgeon Lakes has been compiled since 1952; a stomach analysis of some bass was made in 1955; records are kept of each fish until final capture by some fortunate angler; the various species of fish in the Sanctuary (apart from lunge and bass) have been studied to determine the extent of the populations; special attention has been given an abundant population of sunfish; many tagged fish have also been fin-clipped to check on the success of our tagging procedure; high mortality rates in certain age classes of lunge have been discovered; cannibalism has been discovered as a limiting factor; the annual production of bass has been greatly increased in the Sanctuary due to heavy harvesting each Fall and it is likely that the same improvement will show up in the lunge population. The Sanctuary presents a wonderful opportunity to study lunge and bass populations subjected to unusually heavy fishing pressure. The statement that "fish and game populations cannot be stock piled" is clearly demonstrated in the Sanctuary for we find that by harvesting a large number of adult fish each year we are making room for a larger percentage of young fish to survive.

The Nogies Creek Maskinonge Research Committee is headed by Dr. F. E. J. Fry of the University of Toronto. Committee members include: Mr. D. V. Reddick of the Toronto Anglers' and Hunters' Association; Dr. H. H. MacKay of the Dept. of Lands and Forests; Dr. H. W. Curran of Queen's University; and Mr. J. C. Weir, District Biologist, Lindsay. The graduate student in charge of the Project at the present time is Mr. Barry Muir of Toronto University, and his assistant is Mr. Bill Charlton of Western University. Supervision in the field throughout the summer months is given by J. C. Weir, District Biologist and Mr. Ray Simpson, Fisheries Management Officer, Department of Lands and Forests.

Throughout the whole Project we have been fortunate in having Mr. Earl MacGillivray, Net Foreman with the Department, in an advisory capacity concerning the harvesting of fish. He has supplied all netting equipment for the Project and has loaned us a net man each Fall. The fish harvesting operations this Fall were carried out by the following personnel: Mr. James Hazzard - Dept. net man; Mr. Reg Braine of Bobcaygeon - Assistant; Mr. H. C. Jackson, Manager of the Deer Lake Fish Hatchery; Mr. Ray Simpson, Fisheries Management Officer; and Mr. J. C. Weir, District Biologist.

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REPORT ON THE SEVENTEENTH MIDWEST WILDLIFE CONFERENCE

DECEMBER 12 - 14, 1955

LAFAYETTE, INDIANA

by

K. H. Loftus and J. K. Reynolds

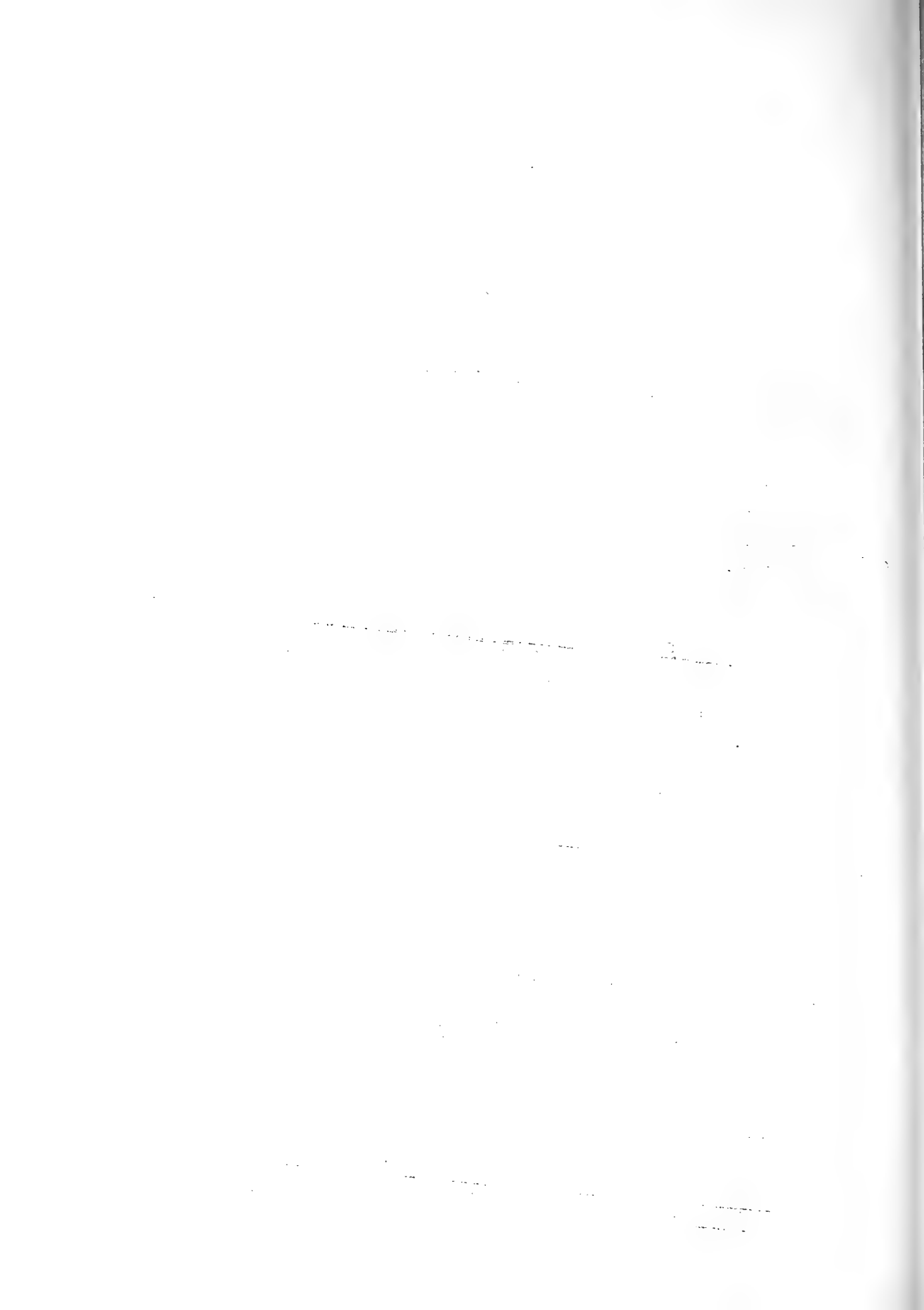
This Conference was attended by Messrs. Loftus and Reynolds, of the District of Sault Ste. Marie. For the most part the former attended the sessions devoted to aquatic biology, the latter the sessions concerning terrestrial biology.

Brief summaries of some of the papers follows:

1. Predation found on 1000 miles of Fox Trail. - David A. Arnold; Michigan Department of Conservation.  
- Arnold and his associates followed fox trails in snow for a total of 1000 miles. Animal remains or evidence of kill:

1200 Mice (mostly Microtus)  
55 Cottontails (freshly killed)  
52 Cottontails (previous killed)  
41 Shrews (Blarina) - killed but not eaten  
24 Pheasants  
9 Quail  
4 Muskrats  
1 Weasel  
2 Domestic Geese  
Miscellaneous: grouse, fox, snakes, squirrels, song-birds, offal, carrion.

- Concluded that most healthy Cottontails can escape if cover, particularly small brush, were available nearby.
  - Predation loss on pheasants represented about 5.6% of fall pheasant population; overall effect almost negligible.
  - Predation loss on Cottontail population about 8% little effect (hunter take averaged 27% over past 10 years).
2. Preliminary Report of Quail Management in Southern Illinois. - Edward Triner; Southern Illinois University.  
- A private company requested help in managing an area for improved quail management. Preliminary studies suggest considerable improvement. Techniques employed were essentially burning and fallowing.



3. Preliminary Report on Evaluation of Cock Stocking Through The Day-Old Chick Program in Wisconsin. - C. D. Besadny; Wisconsin Conservation Department.
  - A study of the value of the practice of providing sportsmen and other co-operating agencies with day-old chicks for rearing and eventual release into the wild.
  - "Evidence now appears adequate to conclude that the return on county-wide releases approaches 51% for birds released on public hunting grounds. The return on club birds probably ranges between 40 and 59 per cent."
  - "No complete evaluation of the day-old pheasant chick program is as yet possible."
  
4. Age Ratios as Indices of Fall Rabbit Abundance. - Alfred Geis, Michigan State University.
  - An excellent discussion of the value of age ratios as criteria of reproductive success, but not essentially different from the pre-season and post-season indices in use on Pelee Island for pheasants.
  
5. Effects of Extension of Ohio Pheasant Season on Hunting Pressure and Kill. - W. R. Edwards; Ohio Division of Wildlife.
  - There are about 750,000 hunters in Ohio, or about 25 acres per hunter for hunting.
  - In many years, spring ratios of pheasants have suggested that more cocks could have been harvested the previous autumn.
  - In 1954 the season was increased from the usual 12 days to 18 days (50%).
  - As a result, the pheasant kill was increased only 6%.
  - The average number of days spent afield per hunter was negligible.

On Monday evening a new colour film, by C. W. Schwartz, of the Missouri Conservation Commission, was shown. Photographically, this film is at least as good as Schwartz's "Bobwhites through the Year," but its popular appeal is much more restricted.

Also in the evening the Big Game Discussions were held.

IOWA - The original deer were exterminated before the turn of this century; present herd has developed from introductions.

- 1953 saw the state's first open season of this century, with about half the state open from December 10-14. The herd was estimated at 13,000 deer.
- With a \$15.00 Resident Deer Licence, 61% of the hunters took 2401 deer.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It highlights the importance of using reliable sources and ensuring the accuracy of the information gathered.

3. The third part of the document focuses on the analysis of the collected data. It discusses the various statistical and analytical tools used to interpret the results and identify trends and patterns.

4. The fourth part of the document discusses the importance of communication and reporting. It emphasizes the need for clear and concise communication of the findings to the relevant stakeholders.

5. The fifth part of the document discusses the importance of ethical considerations in the research process. It highlights the need for honesty, integrity, and respect for the rights and privacy of the participants.

6. The sixth part of the document discusses the importance of maintaining the confidentiality and security of the data. It highlights the need for appropriate safeguards and protocols to protect the information from unauthorized access or disclosure.

7. The seventh part of the document discusses the importance of ongoing monitoring and evaluation. It emphasizes the need for regular reviews and updates to the research process to ensure its effectiveness and relevance.



- In 1954, 53 of 99 counties were open for four days. Success was 53%, for a kill of 2700 deer (licence \$10.00).
- In 1955 there was a 3-day season, state-wide, with a 3-week bow-and-arrow season prior to the 3-day season for fire-arms. Data not yet available.
- Believe that annual season, with kills around 2000-2500 deer, are here to stay.

MISSOURI - estimate 200,000 deer (1.3 per square mile)

- kills as high as 50 deer per square mile have been recorded.
- in 1951, the state's first "any deer" season, covered a portion of the state.
- 1953 - 45,000 hunters; 7800 deer killed
- 1954 - 45,500 hunters; 8800 deer killed
- 1955 - 45,500 hunters; 7900 deer killed

No non-resident seasons

- 1955 - 5 days.

ILLINOIS - A few deer were present in the state when settlement began; these reached a peak about 1830; thereafter a steady decline, with complete closure in early 1900's.

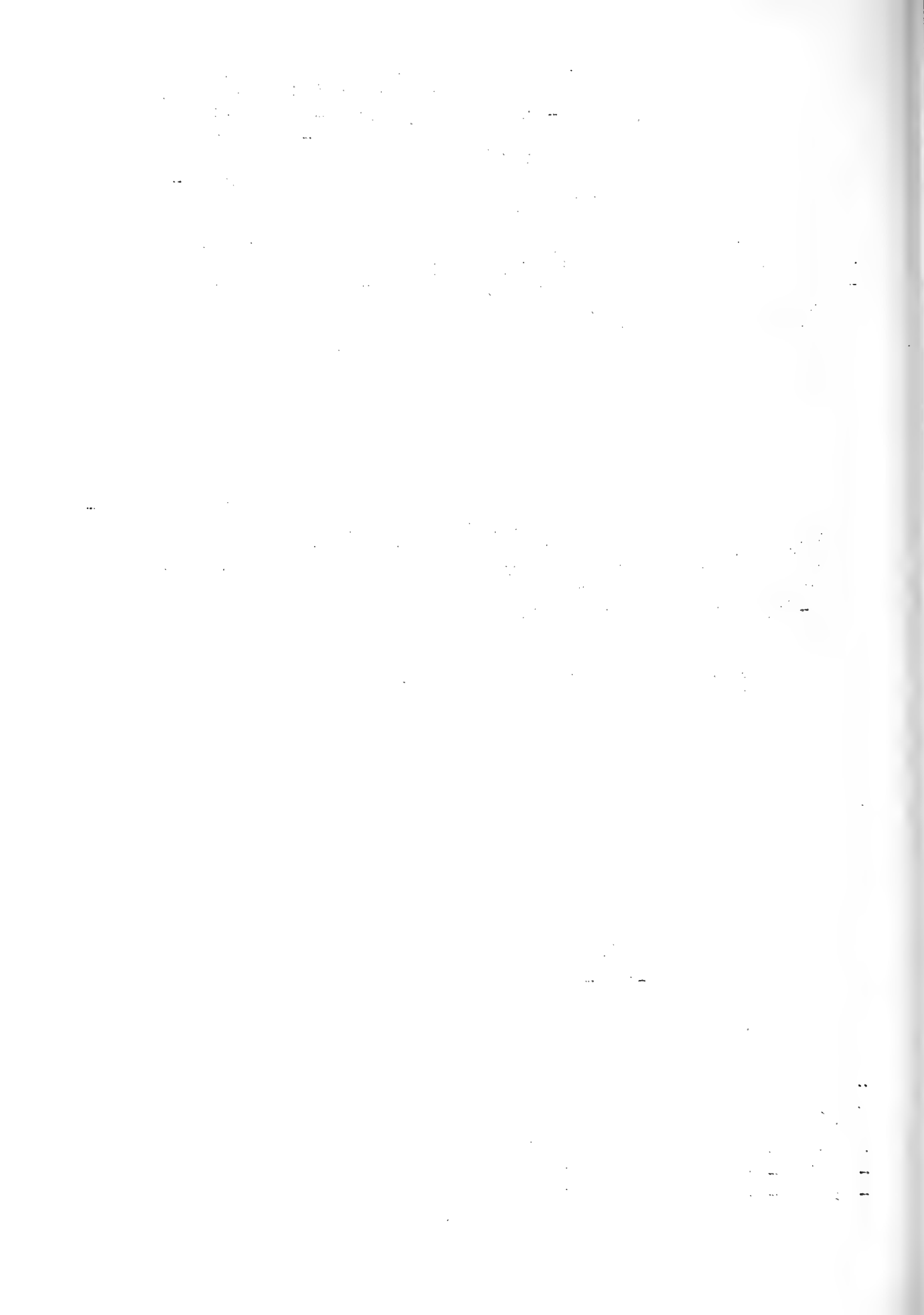
- present population is derived from release of captive deer, introductions, and spread of deer from Missouri.
- to-day's main concentrations are in extreme north and south of the state.
- 1950 population estimated at 2500.
- 1951 population estimated at 3075.
- no recent data, but thought to number between 7500 and 10,000 today.
- no open season as yet; scattered damage to farm crops.

OHIO - 1900 - 1920 - no deer in the state.

- stocking from adjoining states.
- 1943 - 1st deer season - bucks only - 400 deer killed
- 1945 - total kill: 36 deer (!)
- 1948 - seasons re-opened - 1500 killed-about 40 open counties.
- open every-other-year - "Any deer"
- 1955 - kill; 6200; licences 47000; success:
- Dec. 1-3 for guns and bow-and-arrow
- Also a long bow-and-arrow season after Dec. 3
- Bow-and-arrow kill negligible
- About 40 counties open each year.

INDIANA - estimate 6800 deer in the state.

- estimate 2700 available to guns 1955.
- 1951 - first season - any deer - 1600 kill.
- 1952 - first season - any deer - 1100 kill.
- 1953 - bucks only - kill : 90.
- 1954 - bucks only - kill : 68.
- 1955 - bucks only - kill : 130 to date (returns incomplete).



WISCONSIN - Long history of "buck seasons" in early years.

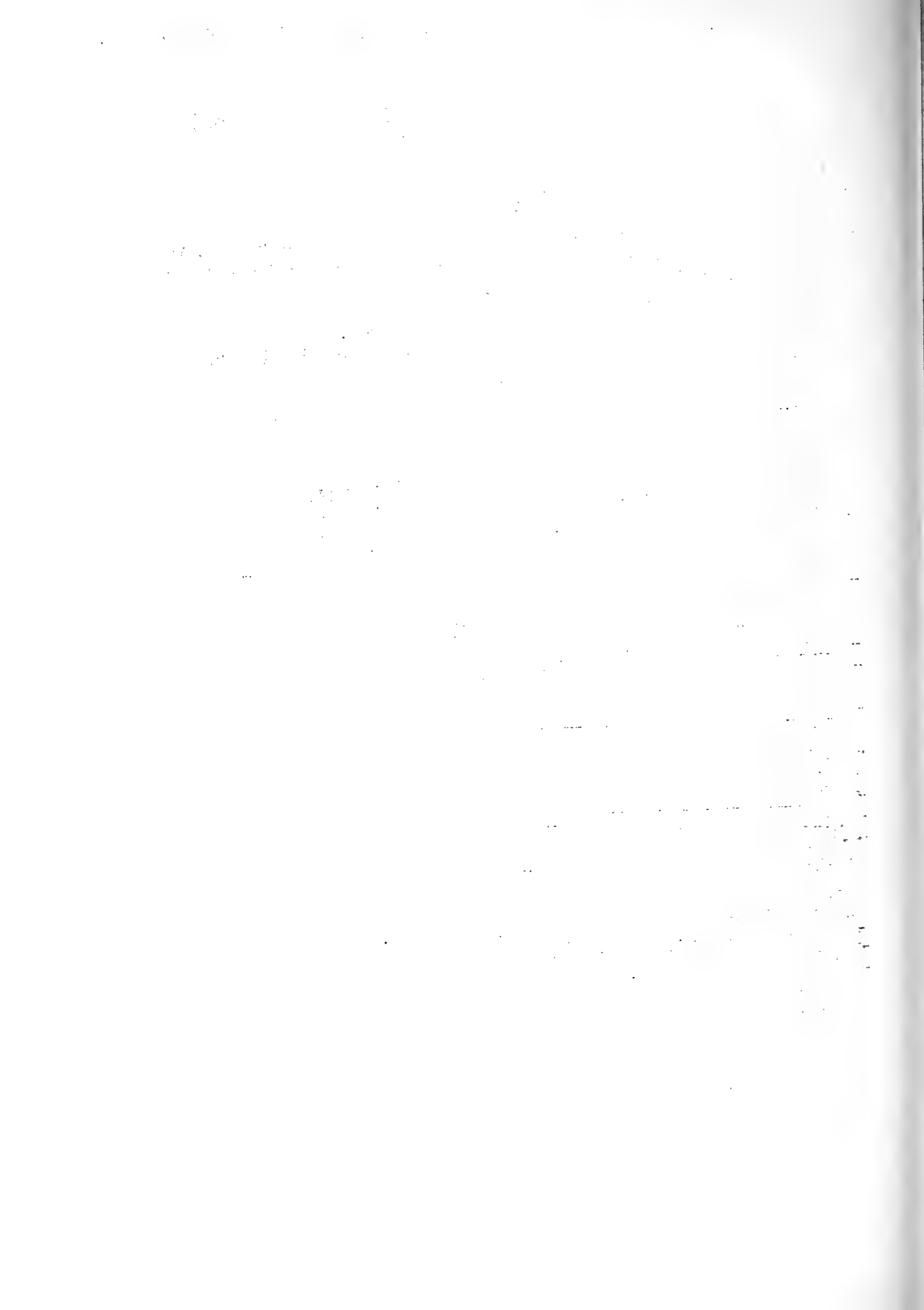
- 1943 - first "any deer" season.
- 1944 - 1948 - bucks only
- 1949 - any deer.
- 1950 - any deer - 164,000 killed (special season)
- 1951 - any deer - another big year.
- 1952 - bucks only.
- 1953 - bucks only - 25,000.
- 1954 - bucks only - 19,700.
- 1955 - bucks only - 34,300.
- Chief hunting pressures are not in the northern parts of the state where the main concentrations of deer are located.

MINNESOTA - never have had a "buck law".

- except in a few areas, the state's herd is in good condition.
- seasons usually 9 days.
- bow-and-arrow season (month long, preceding the rifle-shotgun season.
- 1950 - closed.
- 1951 - any deer - 181,700 licences - 72,700 kill.
- 1952 - any deer - 164,000 licences - 57,300 kill.
- 1953 - any deer - 163,500 licences - 60,500 kill.
- 1954 - any deer - 170,000 licences - 47,500 kill.
- 1955 - any deer - about 170,000 licences - 75-80,000 kill.
- good weather, good kill.

MICHIGAN - Deer estimates (1955) hunters and kill

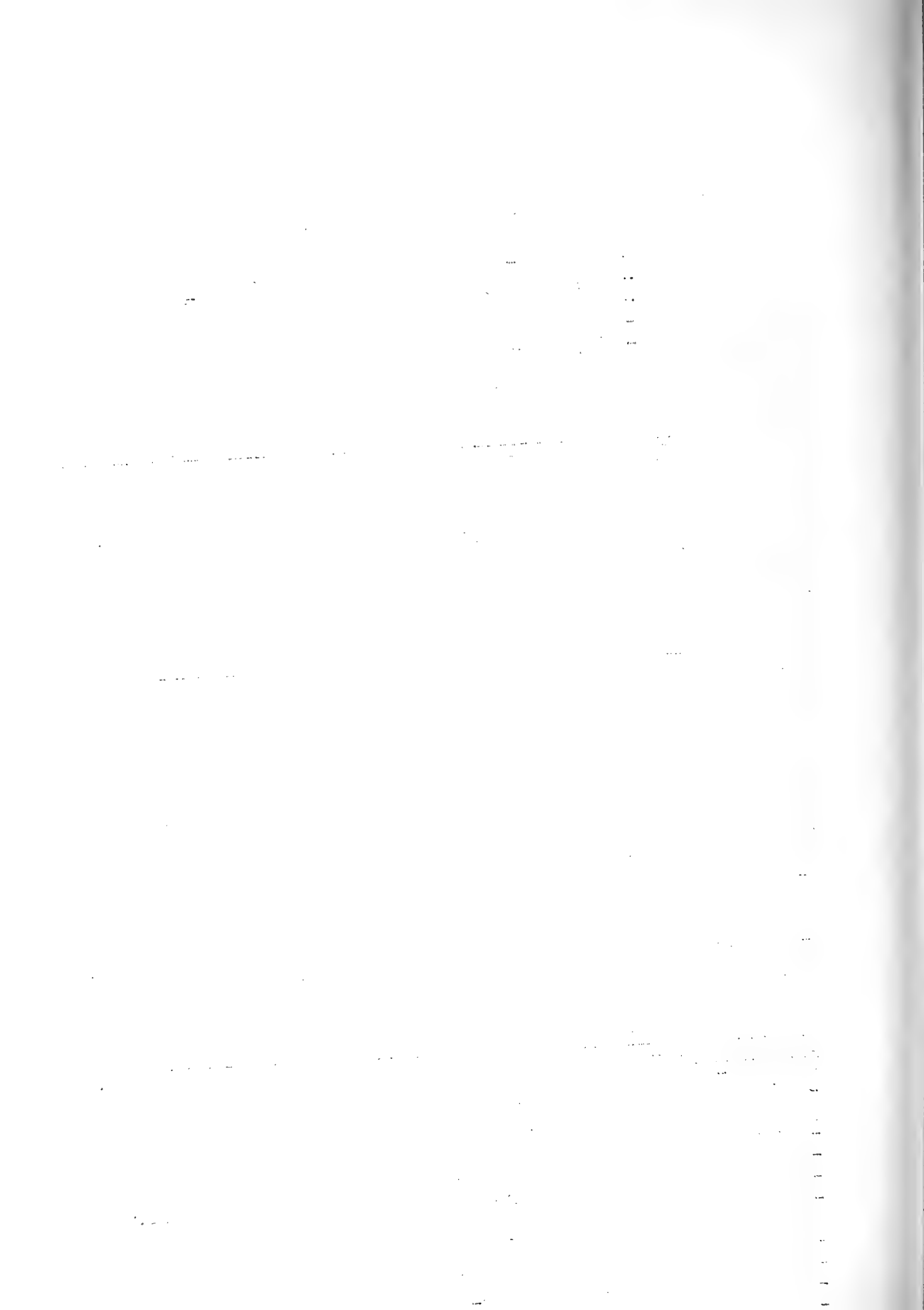
- Upper Peninsula - 300,000 to 400,000 deer.
- 112,000 hunters (6-8 per sq. mile).
- 26,500 deer killed (3" - plus antlers).
- Northern Lower Peninsula
- 300,000 to 400,000 deer.
- 285,000 hunters (10 to 40 per sq. mile).
- 39,500 deer killed (3" - plus antlers).
- Southern Lower Peninsula
- 10,000 to 40,000 deer - widely scattered.
- 20,000 hunters.
- 2,000 deer killed (shot-guns and .22 rifles).
- Summary for 1955 (Upper Peninsula and Northern Lower Peninsula).
- deer population: 600,000 - 800,000.
- area: 34,000 square miles.
- hunters: 420,000.
- "bucks" killed: 68,000.
- Previous buck kills:



1941 - 58,000	1948 - 58,000
1942 - 61,000	1949 - 67,000
1943 - 46,000 ✕	1950 - 75,000
1944 - 49,000	1951 - 73,000 ✕
1945 - 78,500	1952 - 61,600
1946 - 84,000	1953 - 70,450
1947 - 76,000 ✕	1954 - 58,870
	1955 - 68,000

6. Ten-Year Record of Deer Numbers and Kill on an Intensively Managed Forest Area. - Burcalow and Marshall; University of Michigan.
- Long past history of over-population.
  - Close study of present populations by census-drives.
  - Present management is aimed at an annual harvest of 20% of the herd.
  - Under Management, the annual take has been high and steady.
7. Deer Range Ecology on a 647 Acre Enclosure in Northern Michigan. - Van Etten; Michigan Dept. of Conservation.
- Area is completely enclosed by deer-proof fence.
  - No control of predation.
  - Wolves, coyotes, dogs, etc., can pass through the fence.
  - This year 42 man-hours were required to kill 1 of 11 bucks known to inhabit the enclosure (1 sq. mile), averaging 7 hunters per square mile. With 34 deer on the area it took about one hour for any hunter of a total of 7 to 8 to see a deer.
  - After a fire on a portion of the area the deer ate the aspen shoots which resulted the first year; aspen used much less in succeeding years.
  - Productivity at least 1.4 fawns per adult female, falling to about 1 per female at hunting time.
  - No summer browsing on any conifers.
8. Sex and Age Characters of a Declining Ruffed Grouse Population. - R. S. Dorney; Wisconsin Conservation Dept.
- 1948 - population extremely high.
  - high population maintained through 1953, kill 800,000 per year for the state.
  - marked decline through winter of 1953.
  - spring of 1954 wet and snowy.
  - in good years, 50% juv., in poor year (1954) 63% juv.
  - in good years 55% of adults were males, in poor year 60% of adults were males.
  - in good years, 50% of juveniles were males.
  - in poor years 53% of juveniles were males.
  - data suggest heavier over-winter.
  - mortality among juveniles than among adults.

✕ Following severe winters.



9. Results of a Large-scale Dead Deer Survey. - Lee Eberhardt  
Michigan Department of Conservation.

- in a "bucks only" season, what happens to the excess females?

- over winter mortality in Northern Upper Peninsula of Michigan 1953/54 lay between 21,000 and 44,000 (95% confidence limits on a mean of 18,500 composed of:

Shooting	- 14,280	Accidents	- 740
Starvation	- 5,420	Unknown	- 10,310
Dogs	- 11,780		

Of those shot, only 7 (?) were "legal bucks". It is presumed that the remainder were does shot illegally during the "bucks only" season, and left in the woods.

10. Use of Herbicides in Inducing Regrowth of Mountain Maple for Deer Browse. - L. W. Krefting, et al.

- Mountain maple is a staple and nutritious food for deer in winter in the northern mid-western and north-eastern states, and in southern Canada east of the Great Plains.

- Past experience shows that cutting and other practices to induce re-growth of shoots and sucker-growth are inefficient and uneconomical.

- Effects of spraying with herbicides were studied and tested against other methods.

- 2, 4-D in Diesel oil best chemical of those tested.

- recommendations: spray at breast height at bud-swelling time in concentrations of 2-4 lbs. 2, 4-D per acre (these figures may not be correctly interpreted).

11. A New Disease of Deer? - Fay and Boyce; Michigan Department of Conservation.

- a number of dead deer were found in September - November, 1955 in 10 counties across the centre of the Lower Peninsula.

- no apparent correlation with high populations or extensive deer range.

- all ages and both sexes affected.

- bloody patches frequent under the skin and in the chest cavity, frequent haemorrhages in the digestive tract.

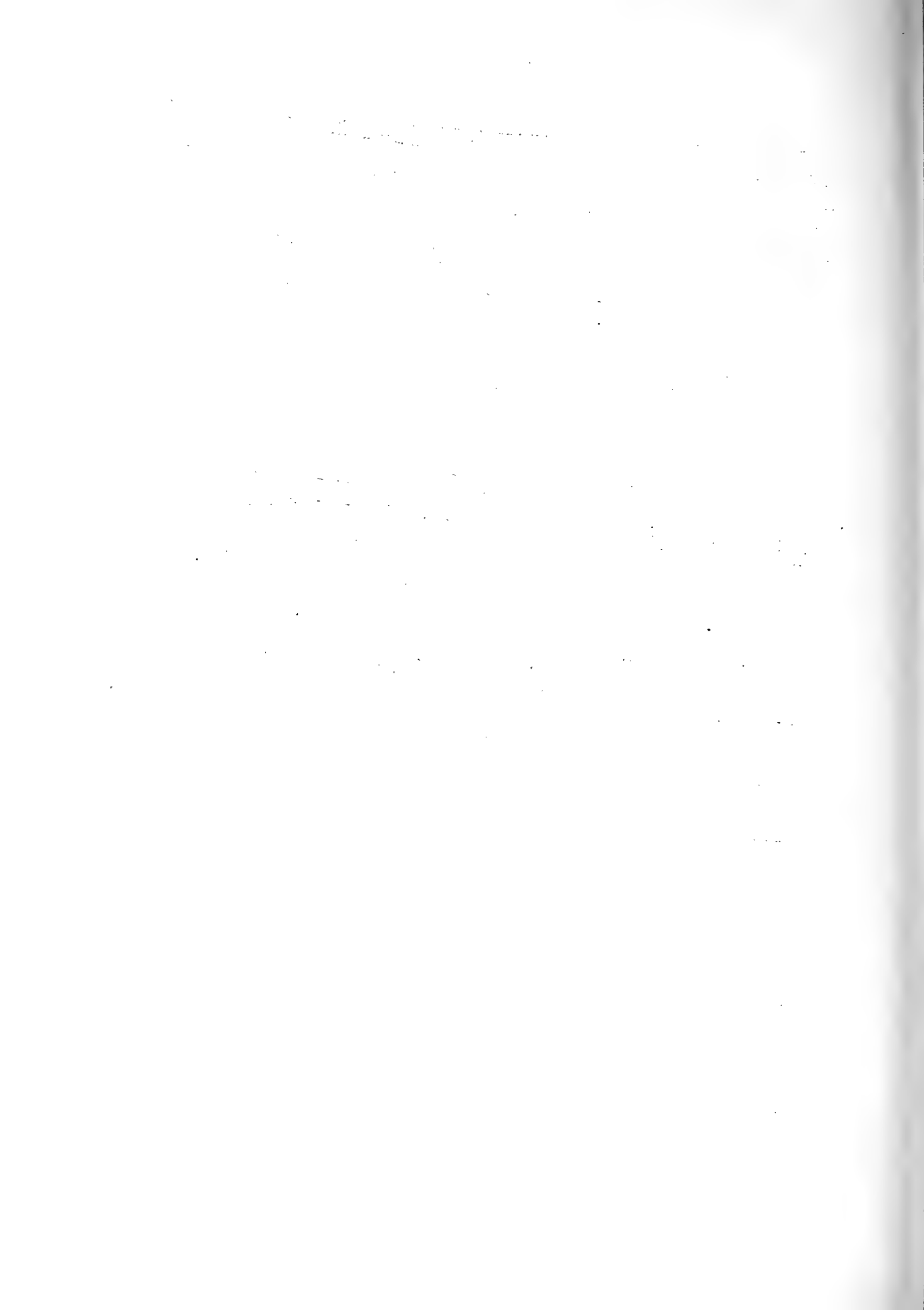
- no pathogenic organisms could be isolated.

- experiments suggested that a virus was involved.

- appears to be specific for deer.

- Mode of transmission not known; apparently not highly contagious.

- Similar die-off in the autumn of 1953 may have been same disease.





12. Status of the San Juan Rabbit in the Midwest. - W. B. Barnes; Indiana Department of Conservation.
- few or no releases in Minnesota, Wisconsin, or Michigan.
  - Statewide releases have been made in Ohio and Indiana.
  - Some survival has recurred in both states.
  - Beagle Clubs have been the Chief instigator of introductions.
  - Legislation for prohibition of introduction and release is desirable.
  - Neither Ohio nor Indiana report established warrens or range extensions.

Great Lakes Lake Trout and Sea Lamprey Committee

A copy of the legislation pertaining to the recently ratified International Treaty for the Great Lakes Fishery was distributed to all present. The formality of enabling legislation in the United States remains to be realized.

Each State, the Province of Ontario, and the Fish and Wildlife Service presented papers on Great Lakes activities during the past year. All pertinent reports confirmed the downward trend in the lake trout catches in Lake Superior and the increasing rate of lake trout scarring by sea lampreys. The numbers of sea lampreys captured in U. S. barriers rose sharply in 1955 to about 10,000.

The Fish and Wildlife Service report concerning the larvicide experiments were of interest. Two chemicals have evidently caught much interest; (1) 3 - Bromo-4-Nitrophenol and (2) unnamed. Both are apparently specific to sea lamprey larvae if applied in the order of one part per million. The same poison is reported to be toxic to rainbow trout at the 5 p.p.m. level. Laboratory tests are apparently conducted in small aquaria through a fairly wide temperature range. It was disappointing to learn that the larvae, under test, were free swimming, and not in a semblance of native habitat.

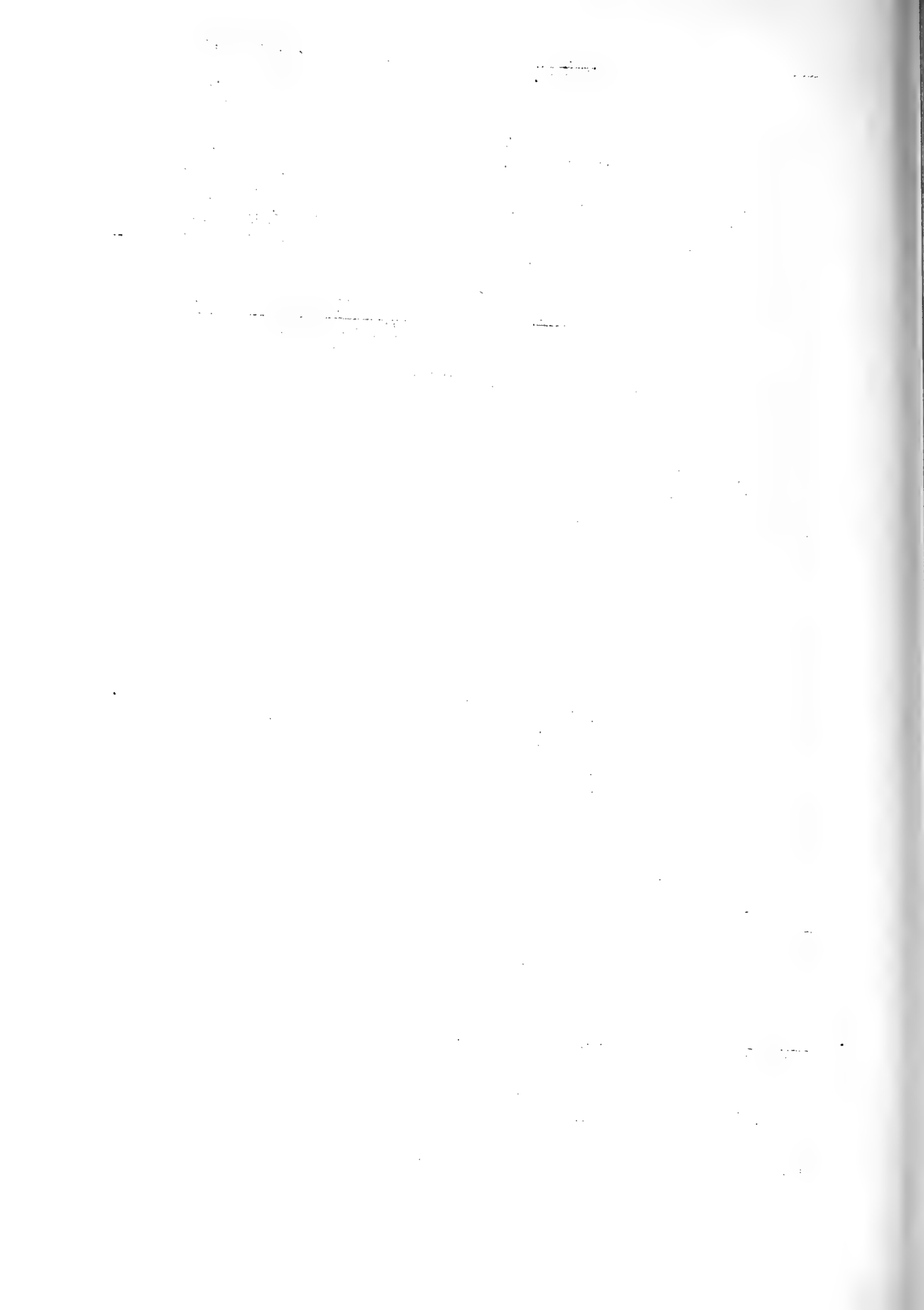
Obviously premature were the recent reports to the effect that "the" poison had been found. Field tests of the larvicide will be initialled in the spring of 1956.

The fact that these larvicides are not in commercial production indicates that their cost will be very high.

At the close of this meeting it was suggested, though not discussed to any extent, that the Committee would be dissolved since the reasons for its existence have disappeared with the formation of the Commission.



13. Tests of Seining as a Fish Sampling Method in Streams.  
- A. A. Paloumpis, Iowa.  
- It was pointed out that downstream seining provided larger and more varied catches than upstream seining, and that results were relatively better during lower water and during darkness. Some fifteen seine hauls per hour with a twenty foot minnow seine are necessary to detect a 50% change in the population of fish. Populations considered were of minnow, catfish and sunfish families. Seining, by and large, seems qualitative, rather than quantitative.
14. Harvest of Lake Sturgeon in Lake Winnibego and Connecting Waters - T. Wirth and C. Cline - Wisconsin.  
- These authors reported on the very sizeable February sport fishery of spearing sturgeon on Lake Winnebago (Area - 137,000 acres - maximum depth 21'), Lake Poygan Lake Winneconne and Lake Butte des Morts with respective areas of 11,000, 3,000 and 4,500 acres and with maximum depths of eleven feet. The smaller lakes are upstream from Winnebago.  
  
- The sport fishery is so intense as to apparently over-harvest the sturgeon population when the creel limit is three fish per season with a minimum size of 40 inches. Research has shown that the average male matures at 50 inches and 22 years of age, and that average females are 55 inches long and 25 years old. Of sturgeon over 60 inches (30 years) in length, males make up only 5% inferring a shorter life for males. Workers found that males spawn annually and females only once in four or five years. In 1955 a system of tagging sturgeon, as we do our deer, was initiated to improve the catch records. Generally speaking, sturgeon caught in the furthest upstream lake were smaller than those caught in successive downstream lakes. There is no evidence of migration between lakes even though a sturgeon from all four lakes use the same area upstream for spawning.  
  
- Continued increase in the harvest by the expanding fishery has spurred further research and had led to the establishment of one sanctuary where small sturgeon appeared most abundant.
15. Exploitation of Brook Trout in Lawrence Creek. - J. T. McFadden, Wisconsin.  
- Considering a single year class, that of 1954 which in September of 1954 was estimated at 16,500 trout, there was an over-winter survival of 9,429 or 57% (6 months winter). These fish were of catchable size by the opening of the season and by September 3,100



of them remained in the stream. Thus 33% of the spring population remained in the fall, 32% had been caught by anglers and 35% had apparently died of natural causes.

- These are interesting natural and angling mortality figures. Incidentally, reproduction was excellent and these were wild trout.

16. Comparisons of Creel Returns from Incomplete and Completed Fishing Trips, Clear Lake, Iowa. - C. J. DiCostanzo; Iowa.
    - For practical purposes, the author concluded, one can use creel census data gathered during fishing just as well as data from completed fishing trips, i.e. in so far as rate of capture and species composition are concerned. The relative costs of the two types of census make this an extremely interesting conclusion.
  17. Carp Control Through Water Draw-downs. - J. Shields; South Dakota.
    - Some success was achieved in preventing or reducing spawning success by carp by lowering water levels artificially at crucial times. The method can be applied, of course, only where water levels can be controlled, but it might do some good in some Ontario waters.
  18. The Rolling Gill Net. - J. J. Tibbles; Wisconsin
    - The author presented a description of this device for measuring the depth distribution of fishes. A fairly simple mechanism and effective, but requires rather special handling gear and has little practical application outside of research.
    - The principle involved is that a wide net is set vertically from floats.
    - Other fisheries papers and several wildlife papers were heard with interest.
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