RESOURCE MANAGEMENT REPORT



DEPARTMENT OF LANDS AND FORESTS

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

F.A. MacDougall Deputy Minister

(These Reports are for Intra-Departmental Information and not for Publication)



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FISH AND WILDLIFE BRANCH



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REPORT ON THE ONTARIO TRAPPERS' ASSOCIATION FUR SALES SERVICE 1963 - 1964 SEASON

by

W. H. Chellew Department Representative, O.T.A.F.S.S. North Bay

Abstract

This is the second annual report to be issued at the close of the Ontario Trappers' Association Fur Sales Service season. The season of 1963-64 was quite successful with an increase of 51 per cent in the dollar volume of sales. There was a generally strong market with most species in good demand. Tables are presented showing the number of pelts according to dollar volume and average price; the increase or decrease in pelt volume over last year, and the number of trapper shippers according to value of shipments.

The 1963-64 season has been another year of success for the Ontario Trappers' Fur Sales. Dollar volume of sales increased 51 per cent to realize \$1,142,843.12. The market was generally strong with good demand for most species. Beaver were strong throughout the season showing 11 per cent average increase over last year. Lynx were in good demand and showed a 12 per cent increase. Otter were very strong and chowed a 30 per cent increase in price bringing a high of 58 per cent. While fisher were in very poor demand and in many cases were held over from sale to sale the seasons average was 27 per cent higher than last year. Mink, marten and muskrats showed a slight decrease in average prices while raccoon slipped 40 per cent. See Table I.

One thousand eight hundred and fifty-seven trappers and twenty-nine fur dealers used the services of the sales producing 4288 shipments. This represents a 35 per cent increase in shippers and 28 per cent increase in shipments. The difference in these two figures can be attributed to muskrat trappers from southern Ontario who send their entire catch in one shipment. This can be verified by the increase in the number of rats handled which amounted to 97,550 this year as compared to 56,330 last year. See Table II.

SEPORT ON THE OWNER CHARTERNS' ASSOCIATION FUR SALES SERVICE

W. H. Chellow Reparement Representative, 0.7.4.7.6.8. North Say

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One Chaptered eight hundred and fifty-seven trappers and twenty-nine fur dealers und fin acreices of the sales producing \$258 shipterts. This represents a 1 per cent increase in shippers and 28 per cent increase in ship matrix. The difference in these two figures can be attributed to make a increase from southern Ontario who send their matire catch in the cas mitmain . This can be verified by the increase in the unders of rest benilled which recented to \$7,550 this year as commanded to 56,300 list vert. See Table II. Indians from the James Bay agency shipped fur to the value of \$52,057.00 this season. This represents a 12 per cent increase over the \$46,700 shipped in the '62-'63 season. The above figures include Indians of the James Bay agency who trap on Michipicoten Island where the take was down, thus holding the increase down. The volume of fur handled for treaty Indians in the Patricia District could be greatly increased if some means of making on the spot advances can be inaugurated.

Twenty-nine resident fur dealers made 186 shipments for a value of \$227,175.00. These shippers substantially increase the profit to the sale as they pay their own express and as the size of the shipment increases, the cost of handling per pelt decreases.

One thousand seven hundred and eighty-nine shippers other than James Bay Indians and dealers made 3,937 shipments valued at \$863,610.00. This amounts to 2.2 shipments per trapper or \$219.00 per shipment. The average shipper in this class received \$482.00, with a low of \$2.00 and a high of \$7,259.00. A further breakdown of these shippers show 70 per cent of the shippers receiving under \$500.00, 18 per cent between \$500.00 and \$1000.00, 7 per cent between \$1000 and \$1500 and 5 per cent between \$1500 and \$7259. See Table III.

While fur-handling continues to improve there is still much more work to be done in this field. This is very evident in a lot of new shippers and perhaps these are also new trappers. There is no way for a trapper to increase his revenue more easily than to produce a top quality well-handled skin. The educational program of the past has once again put well-handled Ontario fur in the limelight of the world market.

New handling methods used at the sale have speeded up operations and at the same time cut down on the work load. The big problem at the present time is space both for handling and buyer inspection. Land for a new building has been purchased and it is hoped that financial arrangements for a new warehouse can be completed in time for the next season.

The conservation officer and trapper training program at the sale continues to improve and more new methods will be inaugurated this year. Lectures given during the past year proved very useful and this phase of the program will be expanded. It bears repeating that there is probably no other way for a trapper or conservation officer to gain such a wide knowledge of the fur industry in so short a time. Indiana troa the James Bay agamely shipped fur to the value of \$52,057.60 this season. This tepresents a 12 per cent increase over the \$45,700 shipped in the '62-'b) season. The above figures include Indians of the James Bay agency who trap on Michipicoten Island where the take was down, thus bolding the increase down. The volume of fur handled for treaty Indians in the Fatricia District could be greatly increased if some means of making on the spot advances can be inaugurated.

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Table No. I

Species	No. Pelts	Dollar Value	Average Price
Beaver	50,292	\$705,596.76	14.03
Muskrat	97,547	151,197.85	1.55
Mink	10,720	125,745.60	11.73
Otter	2,025	62,743.50	30,98
Marten	5,157	31,612.41	6.13
Fisher	1,654	22,510.94	13.61
Lynx	971	14,370.80	14.80
Raccoon	5,724	11,504.24	2.01
Fox	1,233	6,337.62	5.14
Castoreum	1,493 lbs.	4,837.32	3.24 1b.
Bear	113	2,330.06	20.62
Weasel	2,700	1,188.00	·lsls
Wolf	149	640.70	4.30
Squirrel	1.049	346.17	.33

No. of Pelts in Order of Dollar Volume and Average Price

Table No. II

1963-64 Increase & Decrease in Pelt Volume over 1962-63

49% 46% 5 11% 32% 71% 72% 352%	Otter plus 49% Raccoon "46% Squirrel minus 11% Weasel plus 32% Wolf "71% Castoreum "72% Bear "352%	32% 65% 17% 4% 163% 4;2% 73%	plus m m m m m	Beaver Fisher Fox Lynx Marten Mink Muskrat
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Num	ber of Trap	per Shippers	According to	Value of Sh	nipments
No. of Shippers	Dollar <u>Value</u>	No. of Shippers	Dollar Value	No. of Shippers	Dollar Value
479 305 196 146 133 99 84	$\begin{array}{r} \$2 - 100\\ 100 - 200\\ 200 - 300\\ 300 - 400\\ 400 - 500\\ 500 - 600\\ 600 - 700\\ \end{array}$	55 48 42 29 37 22 16	\$700 - 800 200 - 900 900 - 1000 1000 - 1100 1100 - 1200 1200 - 1300 1300 - 1400	16 42 21 8 4 5 1 1	\$1400-1500 1500-2000 2000-2500 2500-3000 3000-3500 3500-4000 \$5000 7259

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MCOSE BROWSE SURVEY AND PELLET GROUP COUNT KENORA DISTRICT, 1964

by R. B. Hall Conservation Officer

Abstract

On May 13, 1964 a moose browse survey and pellet group count was carried out at Maynard Lake in Kenora District. This was the second year this area was surveyed. As in the previous survey, the area was 1,150 acres or 1.8 square miles. The survey method was as instructed by the Research Station, Maple. (April 1963). A summary of the browse tally indicated a total of 15,650 living stems per acre. This is an increase of 4,509 over the 1963 survey. From the pellet group counts it was estimated that the winter population on this area was 11.6 moose and 38.9 deer per square mile. Although the available living stems per acre has increased from the 1963 survey, it is noted that the degree of utilization has decreased. The number of stems which have been killed or mutilated has increased from the 1963 count. It is recommended that a new area be chosen for the 1965 moose browse survey.

Introduction

The Kenora District moose browse survey and population estimate was carried out on May 13, 1964. This survey was the second attempt at moose range assessment in this District.

With minor adjustments to the bearings of the cruise lines and the inclusion of a deer pellet group count, the survey was done on the same area and by the same methods as in 1963.

Area

As described in the 1963 report, the survey area was 1,150 acres located on the east side of Maynard Lake. This lake is part of the English River chain and is approximately 50 miles northeast of Kenora.

సాశాఫ బ్యీ సినిమి కారణా నివిసారుకుంటు సవారుకు ఉంటా సార్కి కారావాడి అంత వారారుకు ఉంటు అంది ప్రారాధుతు కుంటం సము నివారి సార్కార్లు స్థుపడా నుండి సరాధుతుడ్డు స్థుప్ చేస్ నారుకు ప్రారాధుతు నారికి స్థాత్యాలు సరాధు స్థుప్ చేస్తున్నాడు. స్ఫ్ రాహాయాలు నార్కి స్థాత్యం స్ఫ్ స్థుప్ స్థుత్ సారాధుతున్నాడు. అది ప్రారాధుతు నారికి స్థాత్యం సాధ్య స్థుత్ సారాధుతున్నాడు. ఇది ప్రారాధుతు నిర్మాత్యం స్థుత్ సారాధుతున్నాడు. ఇది ప్రారధించి నిర్మాత్యం సాధ్య స్థుత్ సారాధుత్వాడు. ఇదు ప్రారధించు నిర్మాత్యం సాధ్య స్థుత్ సారాధుత్వం కారు ప్రారధించు నిర్మాత్యం స్థుత్ సారాధుత్వం కారు ప్రారధించు నిర్మాత్యం సాధ్య క్రార్కి సాధానికి పరిశా కారుకు ఇద్దిలు ప్రారధించిన నిర్మాత్యం స్థుత్ సారాధుత్వం పరిశా కారుకు ఇద్దిలు ప్రారధించు ప్రారధించిన స్థుత్ సారాధుత్వం పరిశా కారుకు ప్రారధించు ప్రారధించిన సాధా కారుకుత్విందు. సారాధుత్వం కారుకు సాధ్య సాధారు సంధిత్యం సాధాలు స్థి సంధానికి సారాధుత్రం కారుకు సాధ్య సాధాలు స్థుత్రంగు సాధాలు సంధిత్ సంధితు సాధుత్యం సంధిత్ పరిశ్ కులు సాధాలు సాధాలు సంధిత్ సంధాలు సాధుత్యం సంధిత్రం పరిశ్ పురాశాలు సాధాలు సంధిత్రం సాధాలు సంధిం సాధాలు సంధిత్రం సంధితుం సాధుత్రం సంధితులు సారాధి సంధితులు సారాధులు సంత్రీ సంధాలు సాధాలు సాధుత్య సంధితులు సారాధులు సాధాలు సంధిత్రం సంధాలు సంధితుం సాధుత్రం సంధితులు సారాధులు సంధాలు సంధిలు సంధాలు సంధాలు సాధుత్రం సంధులు సంధాలు సంధిలు సంధాలు సంధాలు సంధాలు సంధాలు సంధాలు సంధాలు సాధుత్రం సంధితులు సారాధులు సంధాలు సంధాలు సంధాలు సంధాలు సంధాలు సంధాలు సాధుత్రం సంధాలు సాధుత్రం సంధాలు సంధా

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Survey Crew

(1)	W.	Charlton and I). Bu	sch
(2)	т.	Humberstone an	nd K.	Chambers
(3)	R.	Hall and D. Wa	ire	

Three survey crews were used in an attempt to complete the survey in one day. However, one of the lines was not completed on May 13 and a crew returned on May 20 to finish the line.

Method

The Otter aircraft (CF-ODX) was used to transport the survey crew of five of the Kenora Fish and Wildlife staff and one summer student.

Using the lake shore as one boundary, three two-man crews ran six cruise lines. As recommended in the 1963 report, the area was more systematically covered by running parallel lines which had a 30 chain offset. This method eliminated the shortage of plots which occurred in the 1963 survey.

Compass and pacing were used to run the lines, with a measured plot being tallied every five chains. The plot sizes and method of tally were as instructed by the Southern Research Station, Maple.

An attempt was made to assess the degree of competition between deer and moose on this area. This was done by counting the deer pellet groups on a plot of reduced size which fell within the moose pellet group plot. The size of the deer pellet plot was 6.6 ft. by 66 ft. compared to 13.2 ft. by 66 ft. for moose.

Ninety-three plots were tallied which was seven more than the minimum required 86 (64 x $\sqrt{1.3}$ sq. mi. = 36).

The results of the browse survey are given in Table I.

Population Estimate from Pellet Groups

Moose

The number of pellet groups on the 93 plots ranged from 0 to 7 with the total number of groups being 97. The average number of groups per plot was 97/93 = 1.04. The number of days of pellet deposition was calculated as 220 from date of leaf fall. A daily deposition rate of 13 was used.

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- (1) Average number of pellet groups per acre: Average per plot x 50 1.04 x 50 = 52.0
- (2) Moose-days per square mile:

Pellet groups per acre x 640 Deposition rate (13)

$$\frac{52 \times 640}{13} = 2560$$

(3) Moose per square mile:

Moose-days per square mile Number of days of pellet deposition

 $\frac{2560}{220} = 11.6 \text{ or } 12 \text{ moose per square mile}$

Confidence Limits

The method used to determine the 95 per cent confidence levels from the frequency distribution of pellet groups is as follows:

Pellet Groups per Acre

No. plots required (0.5 per cent sample) 64 x $\sqrt{1.8}$ sq. miles = 86 No. plots sampled = 93

Groups/Plot x	Frequency f	fx	x ²	fx ²	
0	49	0	0	0	
1 .	18	18	1	18	
2	12	24	4	48	
3	6	18	9	54	
4	5	20	16	80	
5	2	10	25	50	
6	0	0	36	0	
7	1	_7	4:9	49	
	93	97		299	

Sample Mean

$$m = \frac{\xi(fx)}{\xi f} = \frac{97}{93} = 1.043 \text{ pellet groups} m^2 = 1.088$$

Sample Standard Deviation

df. = f - 1 = 92
Sx =
$$\sqrt{\frac{\xi (fx^2)}{\xi f-1}}$$
 - m² = $\sqrt{\frac{299}{92}}$ - 1.088 = 1.47 pellet groups

Sample Standard Error

$$Sx = Sx = 1.47 = 0.152$$
 pellet groups
 $\sqrt{2}$ $\sqrt{93}$

Population Mean with Limits

From the "t" table at t.05 for 92 degrees of freedom

t.05 = 1.987

Population mean = sample mean + t.05 (sample standard error)

 $u = m \pm t.05 (S\overline{x})$ = 1.043 + 1.987 (0.152) = 1.043 + 0.302

At the 95 per cent confidence level there should be:

Upper limit $1.043 \pm 0.302 = 1.345$ pellet groups Lower limit $1.043 \pm 0.302 = 0.741$ pellet groups

Moose pellet groups per acres should then range from:

 $50 \times 1.345 = 67.25$ to $50 \times 0.741 = 37.05$

Moose-days per square mile

Range at t.05

$$67.25 \times \frac{640}{13} = 3311$$
 to
 $37.05 \times \frac{640}{13} = 1824$ moose-days/square mile

and the second second



and a second second

Moose per square mile

Range at t.05 $\frac{3311}{220} = 15.05$ to $\frac{1824}{220} = 8.29$ moose/square mile

Therefore from the data collected in the area sampled we would expect an over-wintering population of 12 moose (or between 8 and 15 to be 95 per cent certain) per square mile.

Deer

The number of pellet groups on the 93 plots ranged from 0 to 9 with a total of 162 groups being tallied. The average number of groups per plot was 162/93 = 1.74. The number of days of pellet deposition was 220 and a daily deposition rate of 13 was used.

(1) Average number of pellet groups per acre:

Average per plot x 100 1.74 x 100 = 174

(2) Deer-days per square mile:

Pellet groups per acre x 640 Deposition rate (13) $\frac{174 \times 640}{13} = 8566.1$

(3) Deer per square mile:

Deer-days per square mile Number of days of pellet deposition

 $\frac{8566.1}{220}$ = 38.9 or 39 deer per sq. mile



Confidence Limits

Method similar to that used for moose.

Pellet Groups per Acre

Plots required (0.25 per cent sample) = 36 Plots sampled 93.

Groups/Plot x	Frequency f	fx	×2	fx ²
0	34	0	0	0
1	16	16	1	16
2	14	28	L;	56
3	15	45	9	135
L _r	5	20	16	80
5	4	20	25	100
6	L _ž .	24	36	144
7	0	0	49	0
8	0	0	64;	0
9	1	9	81	81
	03	162		612

Sample Mean

 $m = \frac{\zeta(fx)}{\xi f} = \frac{162}{93} = 1.742 m^2 = 3.035$

Sample Standard Deviation

df. = f-1 = 92

Sx =
$$\sqrt{\frac{\xi(fx^2)}{\xi f-1}}$$
 -m² = $\sqrt{\frac{612}{52}}$ = 3.035 = 1.90 pellet groups

Sample Standard Error $S\overline{x} = \frac{Sx}{\sqrt{-f}} = \frac{1.90}{\sqrt{93}} = 0.197$ pellet groups







Population Mean with Limits

df. = 92 \therefore t.05 = 1.987 U - m+ t.05 (Sx) = 1.742 + 1.987 (0.197) = 1.742 + 0.391

Therefore, 95 per cent confident of:

Upper limit 1.742 + 0.391 = 2.133 pellet groups Lower limit 1.742 - 0.391 = 1.351 pellet groups

Deer pellet groups per acre should then range from:

100 x 2.133 = 213.30 to 100 x 1.351 = 135.10

Deer-days per square mile

Range at t.05 213.30 x $\frac{640}{13}$ = 10494 to 135.10 x $\frac{640}{13}$ = 6647 deer-days/square mile

Deer per square mile

Range at t.05

 $\frac{10494}{220} = 47.70$ to

 $\frac{6647}{220} = 30.21 \text{ deer/square mile}$

We may assume then that this area over-wintered 39 deer per square mile and be 95 per cent confident that this figure did not exceed 48 nor fall below 30 deer per square mile.

Observations

From the summary of the browse survey a total of 15,650 living stems per acre were calculated. This is an increase of 4,509 stems per acre from the 11,141 of the 1963 survey. Although hazel still made up a large per cent of the available browse (40.5%), significant increases were noted in the per cent of balsam, poplar and birch available. This increase may be partially explained by the re-routing of the survey lines which necessarily fell over different terrain. It was noted in the 1963 survey that the area



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was regenerating to these three species and this would seem to be a more logical answer to the noted increase in available stems.

Mountain ash was tallied on 4 per cent of the plot this year, however, this species made up only .2 per cent of the available browse.

The degree of utilization for each species ranged from 7 per cent to 47.6 per cent. It is interesting to note that although balsam appears to have increased in supply by 11.7 per cent, the degree of utilization has decreased by 13.6 per cent. The same trend is true for several other species. Hazel was browsed 33.7 per cent in 1963 compared to 47.6 per cent in 1964, an increase of 13.9 per cent.

There has been a notable increase in the per cent of stems killed in all species, with the exception of dogwood. Poplar has increased from 10.9 per cent to 20.1 per cent killed. Maple has increased from 6.5 per cent to 13.5 per cent killed.

The per cent of stems mutilated has also increased to a great degree in all species except hazel, which has decreased by 14.3 per cent.

It is noted that the estimate of the moose population has decreased from 16.3 animals per square mile in 1963 to 11.6 per square mile in 1964. This may be due, in part, to the apparent rapid build up of the deer herd in this area. This build up appears to be general in most parts of the Kenora District, particularly where the habitat has been altered by fire, logging or the spruce budworm.

The indicated 38.9 deer per square mile are undoubtedly accounting for a large percentage of the killed and mutilated stems.

There was no evidence of dead moose or deer on the plot.

Comments

During the month of January 1964, a standard 25 square mile aerial survey plot was layed out to include the Maynard Lake browse survey area. The aerial count of 22 moose and 30 deer would serve to confirm the size of the deer herd as indicated by the estimate from the pellet group count. Best Construction of the Construc

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Although it may be of value to retain this Maynard Lake area for the purpose of assessing the degree of competition between moose and deer from the standpoint of increasing or decreasing numbers, it is felt that a survey every second or third year would be sufficient.

It is felt that another area should be chosen for the purpose of a moose study area. More accurate and useful information would be forthcoming if deer were not present.

Acknowledgments

A vote of thanks is extended to all the staff who ably assisted in the collection of field data for this report. Special thanks go to W. Charlton, Fish and Wildlife Supervisor, for his helpful comments and K. Chambers, District Biologist, who carried out the statistical analysis. A construction of the second construction of the structure of the structure of the structure of the second struct

TABLE I

		Living	% of			% of
	Freq.	Stems	Stems	% Stems	% Stems	Available
SPECIES	Index	per acre	Browsed	Killed	Mutilated	Browse
White Birch	.41	1,444	14.5	7.9	16.0	9.2
Balsam	.84	3,818	7.6	.9	4.6	24.4
Willow	.06	78	27.3	8.3	4.5	.5
Maple	.30	1,160	33.3	13.5	35.8	7.4
Dogwood	.33	908	32.4	1.9	52.3	5.8
Cherries	.15	156	32.5	9.1	25.0	.9
Juneberry	.16	259	43.8	7.6	58.9	1.7
Poplar	.55	1,469	34.8	20.1	24.6	9.4
Hazel	.66	6,323	47.6	2.5	21.3	40.5
Mountain Ash	.04	35	10.0	9.1	50.0	.2
		15,650				100.0

Frequency	Index	(93	plots)	
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Species	Occurrence Plots	Occurrence (%)
White Birch	38	41
Balsam	78	84
Mountain Ash	4	4
Willow	б	6
Maple	28	30
Dogwood	31	33
Cherries	14	15
Juneberry	15	16
Poplar	51	55
Hazel	61	66

Living Stems per Acre by Species EL x 330 93

	1	
Species	EL	Living Stems per Acre
White Birch	407	1,444
Balsam	1,076	3,818
Mountain Ash	10	35
Willow	22	78
Maple	327	1,160
Dogwood	256	S 0 8
Cherries	40	156
Juneberry	73	259
Poplar	414	1,463
Hazel	1,782	6,323

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Per cent of Stems Browsed	•	
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Species	EB	EL	Per cent Browsed
White Birch	59	407	14.5
Balsam	82	1,076	7.6
Mountain Ash	1	10	10.0
Willow	6	22	27.3
Maple	109	327	33.3
Dogwood	83	256	32.4
Cherries	13	40	32.5
Juneberry	32	73	43.8
Poplar	144	414	34.8
Hazel	849	1,782	47.6

Per cent of Stems Killed

EK EK + EL x 100

Species	EK	EL	Per cent Killed
White Birch	35	407	7.9
Balsam	10	1,076	.9
Mountain Ash	1	10	9.1
Willow	2	22	8.3
Maple	51	327	13.5
Dogwood	5	256	1.9
Cherries	4	40	9.1
Juneberry	6	73	7.6
Poplar	104	414	20.1
Hazel	46	1,782	2.5

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Per cent of Stems Mutilated

 $\frac{EM}{EL} \times 100$

Species	EM	EL	Per cent Mutilated
White Birch	65	407	16.0
Balsam	49	1,076	4.6
Mountain Ash	5	10	50.0
Willow	1	22	4.5
Maple	117	327	35.8
Dogwood	134	256	52.3
Cherries	10	40	25.0
Juneberry	43	73	58.9
Poplar	102	414	24.6
Hazel	379	1,782	21.3

Per cent of Available Browse

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 $\frac{\text{EL}}{\text{EL}}$ (single) x 100

Species	EL	% Available Browse
White Birch	407	9.2
Balsam	1,076	24.4
Mountain Ash	10	.2
Willow	22	.5
Maple	327	7.4
Dogwood	256	5.8
Cherries	40	.9
Juneberry	73	1.7
Poplar	414	9.4
Hazel	1,782	40.5
	4,407	100.0

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DUCK BANDING, KAPUSKASING DISTRICT, 1964

by G. M. Hendry, Biologist

Abstract

The initial banding operation at Pitukupi Lake resulted in 481 ducks being banded. Eight species were represented in the captures. A total of 246 black ducks and 215 mallards accounted for 51.1 per cent and 44.7 per cent of the new birds, respectively. Six different banding stations were operated from Aug. 20 to Sept. 13, 1964, for a total of 150 trap-days. All attempts at trapping diving ducks were unsuccessful.

Description of Area

Pitukupi Lake is a eutrophic lake with an area of 7.8 square miles. The northern section of the lake is deep (40 feet max.) with a gravel bottom while the southern section is shallow (6 feet max.) and has a thick layer of muck over the gravel. The trap sites are located between $84^{\circ}06'$ W., $50^{\circ}41'$ N. and $84^{\circ}12'$ W., $50^{\circ}37'$ N.

The most important of the emergent aquatics is wild rice (Zizania aquatica) which covers an area of about 200 acres in the south end of the lake and which is the primary attractant to the waterfowl. Other common emergents include bulrush (Scirpus sp.), reed grass (Phragmites sp.) and arrowhead (Sagittaria sp.). The yellow water lily (Nuphar sp.) is the only floating aquatic present. The abundant growth of submerged aquatics includes largeleaf pondweed (Potamogeton amplifolius), sago pondweed (Potamogeton pectinatus) and water milfoil (Myriophyllum sp.).

The most numerous tree species surrounding the lake are alder (Alnus sp.) and black spruce (Picea mariana). Other species present include white cedar (Thuja occidentalis), balsam poplar (Populus balsamifera), trembling aspen (Populus tremuloides), white birch (Betula papyrifera) and dwarf birch (Betula glandulosa).

Materials and Methods

Six traps of the lily pad design were set up on the sites indicated (see map.) These were of the large multiple entrance type as suggested by Gibson (1964). Traps Alpha, Bravo and Charlie were constructed on gravel and hard sand while Dog, Echo and Fox traps were built on the semi-floating vegetation that surrounds the lake.



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Traps and Collecting Box

All six traps measured 22.6 feet by 14.3 feet (see diagram at back). The sides were constructed of two inch by two inch mesh chicken wire which was stapled to the five feet high, spruce supporting posts. Chicken wire of one inch by one inch mesh was used as roofing. In the end of the trap nearest the shore, a two foot by three foot hole was cut through which the ducks could be driven to the portable collecting box. Doors were constructed to 2 x 4's and measured five feet by two feet. These were placed in the side of the trap furthest from the hole for the collecting box. Each funnel entrance was four inches wide and closed off at a height of ten inches above the water line. These traps were designed from the trap illustrated in diagram 24, Section B of the Guide to Waterfowl Banding.

To remove the birds from any trap the collecting box would be placed in the opening at the end of the trap and the trigger for the drop-door, set. On entering the trap, the banders would drive the birds into the box; the front door of the box was then dropped by pulling the trigger. The ducks could then be easily removed through the two sliding doors in the top of the box.

Eaiting

The selection of cracked corn, the only bait used throughout the project, was based on the findings of Gibson (1964). Each trap site was prebaited with approximately 75 pounds of corn before the traps were erected. Once the traps were completed and the birds had started to feed, the entrances were closed (Aug.19). From this date to the completion of the project a total of 50 pounds of corn per day was divided among the six traps.

Results

A total of 431 ducks were banded and released at the conclusion of the 1964 banding operation (Table I). After the traps had been eracted, a seven day period elapsed before any evidence of feeding was observed. From Aug. 19 when the traps were closed until Aug. 24, only six birds were banded. This was due to the fact that the ducks hada't started feeding in large enough groups when the traps were closed. Daily catches after this date ranged from four to a high of 45 ducks. Fox trap was the most productive throughout the project with 226 ducks (47 per cent of total) being captured. Echo and Dog traps collected 164 (34%) and 91 (19%) ducks, respectively.

Species	Adı	Adult Immature			%	Imm/100	
	Male	Female	Male	Female	Total	Immatures	Ad. 9
Black	110	34	54	48	246	41.5	300
(Anas rubripes)							
Mallard	30	23	96	66	215	75.3	704
(Anas platyrhynchos)							
Black x Mallard	5		-	1	6	16.7	-
B.W.Teal		-	-	1	1	100.0	
(Anas discors)							
G.W. Teal	998	1	1	1	3	66.7	200
(Anas carolinensis)							
American Widgeon	tent.	1	2	1	Ŀ.	75.0	300
(Mareca americana)							
Ring-necked Duck	1	439	~		1	-	-
(Nyroca collaris)							
Pintail	3	1		1	5	20.0	100
(Anas acuta)							
			Tot	al	481		

TABLE I - Species, Sex, and Age Composition of Ducks Banded - 1964 -

Live decoys were placed in Dog trap on Sept. 1 in a successful attempt to start the birds feeding in that area. Cnce feeding had begun, the use of these live decoys was discontinued since they failed to increase the daily catch. We were also concerned with possible injury to the ducks due to prolonged confinement.

Although diving ducks were in the area our attempts to trap them failed. Traps Alpha, Bravo and Charlie were situated in the deeper section of the lake, which the "divers" frequented, but failed to attract the birds. Several goldeneyes were noticed around the three productive traps but wouldn't feeding on the corn.

Throughout the project a total of 14 ducks escaped from the traps. Nine of these escaped from Dog trap on Sept. 9 through a break in the chicken wire. On inspection in was found that the wire underwater was quite brittle. Subsequent daily inspections of all traps reduced the number of escapes.

Only two ducks died during the project. Both birds were repeats. One mallard drowned in a trap when it became entangled in the chicken wire. One black duck drowned as a result of overcrowding at one end of the collecting box.

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A total of 1051 ducks were retrapped. Of these 586 were blacks and 457 were mallards. The highest individual day's catch of repeats was 143 ducks on Sept. 12. Seven foreign retraps were encountered during the 1564 banding operation.

Water depths at the trap entrances ranged from 7.8 to 40.0 inches at the deep ends and from 1.8 to 31.0 inches at the ends nearest shore.

Conclusions

Since black ducks and mallards accounted for 95.8 per cent of all birds banded, it is felt that the age ratios of these species are the most significant. Of the 246 black ducks banded only 102 (41.5%) were immatures. This ratio appears low when compared to other banding age ratios found in Ontario. Gibson (1963), Gawley (1964) and Gibson (1964) found black duck age ratios of 77.1 per cent, 90.8 per cent and 90.9 per cent immatures, respectively, as a result of banding operations. However, Bellrose <u>et al</u> (1961:469) state ... "because juveniles and adults do not follow identical migration schedules or routes, age ratios showed seasonal and regional variations." To test for any evidence of seasonal variation the weekly change in age composition of banded black ducks was calculated (Fig. I).



Fig. I: - Weekly juvenile-adult composition of mallard and black ducks banded at Pitukupi Lake in 1964.

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These data indicate an exodus of mallard and black ducks in the last week of August. However, a subsequent influx occurred only in mallards indicating that perhaps the majority of black duck juveniles had already flown south. At the time of this writing we have not been able to gather any data on regional age ratio variations in 1964. It appears, therefore, that the low age ratio exhibited by black ducks banded during this operation is a result of seasonal and perhaps regional variations and does not necessarily reflect an unbiased estimate of waterfowl production for this species.

Data obtained from retrapping mallard and black ducks previously trapped and banded at Pitukupi Lake indicated that the banding traps were selective for the latter species (Table 2).

TABLE 2 - Number of Mallard and Black Ducks Trapped and Banded and the Per cent Ratrapped during the 1964 Operation at Pitukupi Lake.

Mallaz	rd		Black Duck			
Number Per cent			Numb	Per cent		
Trapped and Banded	Retrapped	Retrapped	Trapped Retrapped and Banded		Retrapped	
215	457	212.6	246	586	233.2	

Recommendations

1. Due to the fact that Alpha, Bravo and Charlie traps failed to capture a single duck, all banding activities in these areas should be discontinued next year. Two of these traps should be relocated in the south end of the lake; the third trap being used for maintenance purposes. Five active traps would result in approximately 700 ducks being banded in 1965.

2. Since the traps worked well this year, their basic design should remain unchanged.

3. The one inch chicken wire mesh in the collecting box should be replaced by two inch mesh. Many ducks damaged their bills in the smaller mesh this year. A reduction in the dimensions of the box to 4'x1-1/2'x3' would not only facilitate the removal of the birds but also reduce the weight and hence ease handling.

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4. Immediately after being erected, each trap should be baited with 100 pounds of corn. They should then be left open for a period of at least one week to allow the birds to become accustomed to the traps and to commence feeding.

5. Checking the traps twice daily and removing the captured birds failed to increase the daily catch and actual disturbed the ducks sufficiently so as to reduce the daily catch. A single daily check of the traps followed by immediate baiting is recommended for next year. Careful examination of the traps for holes etc. should reduce the number of escapes considerably. If predation becomes a problem in the future, twice daily checks could be warranted.

6. The use of ducks as live decoys in the traps is recommended. However, once a trap is producing the continued use of such decoys is unwarranted as it fails to increase the catch significantly.

7. In the future, banding efforts should be continued on Pitukupi Lake unless a more suitable location is found.

Summary

A total of 481 ducks were banded during the summer of 1964 at Pitukupi Lake; of these, 246 were blacks and 215 were mallards. Eight species were represented. the large, multientrance traps used were very productive; one such trap captured 226 ducks. Three of the six traps failed to capture a single bird.

Acknowledgments

Appreciation is extended to Messrs. P. Millette, I. R. Battye and Conservation Officer F. F. Legace for their assistance in this project. The success of the banding program is due largely to their efforts.

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APPENDIX I

COSTS

Cost of the 1964 Duck Banding Project, exclusive of permanent staff salaries, provisions, outboard gas and transportation is as follows: Six traps 14.3' x 22.6' - 750 of 2 inch chicken wire \$ 54.45 - 300 of 1 inch chicken wire 41.38 \$95.83 Cost of Wire - 166' of 2 x 2's - 84' of 2 x 4's 8.30 6.00 - 168' of 1 x 6's 11.76 - 2 pc, of plywood 2'x3' 4.20 Cost of Wood \$ 30.26 - Miscellaneous (hinges staples, etc.) 3.96 Feed - 2,000 pounds of cracked corn 88.00 Labour - one man, 33 days @ 14.95/dy 493.35 - one man, 18 days @ 12.50/dy 225.00 \$718.00 \$936.40 Total Cost = No. of ducks banded = 481Cost per duck banded = \$1.95

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Diagram Showing Design and Dimensions of Traps and Collecting Box







DUCK HUNTING IN THE LINDSAY DISTRICT, 1963

by E. T. Cox, Biologist

Abstract

Samples of hunters checked in the field on opening day showed a bag of 1.2 ducks per hunter. The data obtained in the remainder of September and in the months of October, November and December show, respectively, figures of 1.6, 0.4, 1.1, and 0.2 ducks per hunter. The main species contained in a collection of 312 duck wings were wood ducks (61), black ducks (61), mallards (58), blue-winged teal (48), and greenwinged teal (30). Detailed separations by county of the hunting effort and bag during different portions of the open season (Tables I - V) and of the wing collection (Table VI) are presented. Age, sex and the ratios of immatures to adults are given for the six most abundant species in the collection. Some comparisons are made with District data from previous years.

Introduction

The species are referred to by their common names (after Peterson, 1963).

Beginning in 1958, an annual opening day check of waterfowl hunters has been made by Fish and Wildlife and Parks personnel. Opening day results are considered valuable for comparison since the areas checked tend to remain the same year after year. During recent years there has also been an effort to gather more information on waterfowl hunting after the opening day.

Since 1960 Darlington Provincial Park has offered shooting to hunters for a daily blind fee. Hunters are requested to fill out a special daily report form. All Durham County data are obtained from this Park.

The data from Presqu'ile Provincial Park and the rest of the Lindsay District are recorded on the "Waterfowl Checking Station Card" (Form H-35). A seasonal permit is required to hunt waterfowl at Presqu'ile. The writer feels that the present card information is valuable for hunter success figures and for species identification.

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Attempts to age and sex ducks in the field have been discontinued. It is hoped that the duck wing collections, started in 1961, will provide reliable data from a much larger sample.

Please note that there was a daily bag limit of only two wood ducks in 1963.

HUNTER SUCCESS - Hunting data are presented by county and tabled according to opening day, the remainder of September, October, November, and December. The Northumberland data are largely from Presqu'ile Provincial Park and Rice Lake.

DUCK WING COLLECTION - Specimens were identified as to species, sex and age by the writer with the assistance of Conservation Officer J. A. Robertson. Preliminary keys prepared by Carney and Geis were used with some reference to Carney and Geis, 1960. The results of this work are presented in Tables 6 and 7. Collections of less than ten specimens of one species were not further separated.

No Haliburton County specimens were collected.

COMMENTS - Duck hunting on opening day 1963 appears to have been only fair. A comparison of opening day bag per hunter over the last four years is given below.

		Ducks per	Hunter	by County	
Year	Durham	Hali.	North	Peter.	Vict.
1963	2.3	-	1.3	1.3	0.8
1962	1.2	-	1.9	1.0	1.9
1961	1.7	829	-	-	1.5
1960	1.1	1.8	1.6	2.8	0.7

The scanty information available on the remainder of the 1963 open season is the most comprehensive yet recorded for the Lindsay District. Wood ducks, black ducks, mallards and the two species of teal apparently provided the bulk of the hunters' bag. A similar finding was made from the 1961 wing collection (Cringan, 1962).

Unfortunately all 1963 samples were under the desirable minimum of 100 specimens per species. However, the ratios of juveniles to adults are worth noting. Wood duck samples in the last three years have shown considerably more adult males than adult females. The number of irmatures per adult for this species is shown

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below by year.

1961 - 5.3 young per adult (Cringan, 1962) 1962 - 1.5 young per adult

1963 - 1.9 young per adult

In 1963, black ducks and mallards show, respectively, 4.7 and 8.2 young per adult. Blue-winged teal show 7.9 and green-winged teal 5.8 young per adult.

One of the main findings of Bellrose <u>et al</u> (1961), was that juveniles were "more vulnerable to hunting than adults; the vulnerability differential varied with place, time of hunting season, year and species." These findings, obtained in central and north-central United States, are probably applicable to southern Cntario; thus, the calculated ratios should not be considered as direct measurements of reproduction although they are probably good indicators.

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TABLE I - Duck Hunti	ing Eff	fort and	Bag - Op	ening Day	(Sept.2	1)
	Durham	Hali.	North.	Peter.	Vict.	Totals
Hunters	22	80	78	56	71	227
Hunter-hours	-		528	372	268	-
Dogs	-	56	2	1	3	6
Mallard	-		15	24	5	44
Black duck	-	63	14	23	7	44
Blue-winged teal	-	828	26	6	29	61
Wood duck	-	**	4	13	13	30
Green-winged teal	-	600	24	3	L,	31
Pintail		52 3	10	-	83	10
Others	-	618	10	1	2	13
Total ducks	50*	620	103	70	60	283
Ducks per hunter	2.3	82	1.3	1.3	0.8	1.2
Hours per duck	-	-	5.1	5.3	4.5	-
* unidentified						
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TABLE 11 - DUCK	Hunting	Errort a	na bag -	Renaindes	or sept.	
	Durham	Hali.	North.	Peter.	Vict.	Totals
Hunters	99		3	30	25	157
Hunter-hours	-	-	17	78	74	-
Dogs	-	-	-	Z ₂	5	9
Mallard	-	-	3	28	2	33
Black duck	-		6	23	-	29
Blue-winged teal	-	-	-	-	2	2
Wood duck	-	-	-	16	1	17
Green-winged tea	- 1	-	-	9	1	10
Pintail	-		4	-	-	4.
Others	-		1	-	3	4
Total ducks	153	-	14	76	9	252
Ducks per hunter	1.5	-	4.7	2.5	0.4	1.6
Hours per duck	-	-	1.2	1.0	8.2	-

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	Durham	Hali.	North.	Peter.	Vict.	Totals
Hunters	132	5	688	-	9	146
Hunter-hours	**	5	-	-	18	-
Dogs	-	1	-	-	2	3
Total ducks	55	1	-	-	8	64
Ducks per hunter	0.4	0.2	-	-	0.9	0.4
Hours per duck	-	5.0	-	-	2.2	-
TABLE IV - DUCK HUN	TING EFF	CRT AND	BAG - No	venber		
	Durham	Hali.	North.	Peter.	Vict.	Totals
Hunters	86	-	-	-	Zy.	90
Hunter-hours	-		-	-	17	-
Dogs		**	-	-	1	1
Total ducks	102*	-	-	-	1	103
Ducks per hunter	1.2	-	-	***	0.3	1.1
Hours per duck	8.0	-	-	-	4.3	-

TABLE III - DUCK HUNTING EFFORT AND BAG - October

* at least 35 mergansers

TABLE V - DUCK HUNTING EFFORT AND BAG - December

-	Durham	Hali.	North.	Peter.	Vict.	Totals
Hunters	34		-	-	-	34
Total ducks	6	-	-	-	-	6
Ducks per hunter	0.2		-	-	-	0.2

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	Numb	er of	Spec	imens	by Cou	inty
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Species	Durhan	North.	Peter.	Vict.	Total	Date Collected
Wood duck	909	1	27	26	61*	Sept.21-Oct.22
Black duck	9	19	25	7	61*	Sept.21-Nov.25
Mallard	6	29	17	6	58	Sept.21-Oct.24
Blue-winged teal	2	24	6	16	48	Sept.21-Oct.15
Green-winged teal	1	22	5	2	30	Sept.21-Nov. 9
Pintail	3	8	-	1	12	Sept.21-30
Am, widgeon(baldpate) 1	7	-	4	12	Sept.21-25
Ring-necked duck	2	1	-	3	6	Sept.21-Oct.15
Hooded merganser	-	-	2	3	5	Sept.21-Oct.10
Greater scaup duck	1	2		1	L.	Sept.21-Oct.22
Gadwall		3	-	-	3	Sept.21-25
Surf scoter	-	-		2	2	Oct. 9
Lesser scaup duck	**	1	**	1	2	Oct.22 & Nov.11
Bufflehead	-	2	53	-	2	Oct.31
Redhead	-	2	**	-	2	Sept.21**
Black-mallard hybrids	-	-	-	-	2*	
Shoveler	1	-	-	-	1	Sept.25
American goldencye duck	-	1	-	-	1	Nov. 5
TOTALS	26	122	82	72	312*	
<pre>* specimens with n ** convictions regin</pre>	o des stere	signat ed	ed co	ounty	includ	led

TABLE	VI	-	Source	and	Species	Composition	of	1963
				Duck	k Wing Co	ollection		

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	Number of Wing Specimens									
Species	Un- usable	Una o'	.ged ç	Adu o'	<u>lts</u> ç] o*	<u>Imma</u> 9	tures Total	Ratio Immatures to Adult Females
Wood duck	13	6	1	10	4		17	10	27	6.8:1
Black duck	4	0	0	5	5		-	-	47	9.4:1
Mallard	9	2	1	1	4		20	21	41	10.2:1
Blue-winged teal	0	0	1	3	5		21	18	39	7.8:1
Green-winged teal	2	0	1	0	4		16	7	23	5.8:1
Am. widgeon (baldpa	ate)O	0	0	1	3		4	4	8	2.7:1
Pintail	0	6	6	-	-		-		-	

TABLE VII - Sex and Age Ratios from 1963 Duck Wing Collections

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OPENING DAY OF THE WATERFOWL SEASON SEPTEMBER 26, 1964, LAKE SIMCOE DISTRICT

by

J. S. Dorland Assistant Senior Conservation Officer

Abstract

One thousand forty-eight hunters were checked in fourteen of the numerous duck hunting areas of the District on the opening day, (excluding Dufferin County). This army of hunters bagged a total of 697 ducks for an average bag per hunter of .66 ducks. Man-hours to kill one duck took 6.7. Weather conditions were only fair with some light rain falling in a few areas around 8:00 a.m. The tally for the day was, in a sense, a replica of 1963, with more hunters, more time taken to kill a duck, and less to take home.

Introduction

Good coverage of waterfowl areas was obtained this year. With the help of the R.C.M.P. in boats and cars, sixteen conservation officers and biologists covered such prominent waterfowl areas as Matchedash Bay, Holland Marsh, Cook's Bay, Minesing Swamp, Lake Dalrymple, Little Mud Lake, Duffin Creek, Little Lake, Mud Lake and other lesser areas within the District.

Results

The total number of hunters checked was up some 15 per cent over the previous year. Ducks per hunter and man-hours to kill a duck, however, have decreased 18.6 per cent and increased 11.9 per cent, respectively, from the previous year. Of the total number of birds reported shot 14.3 per cent were reported not retrieved by some hunters, however, 11 per cent of these cripples were retrieved by other hunters. See Chart #1. In the Holland Marsh, where last year a crippling loss of 32 per cent was indicated, this year the crippling loss shows a decline of 79 per cent as only 28 ducks were reported lost as against 131 in 1963. Cripples in the Minesing Swamp, however, were very high being near 2/3 of the harvest.

Hunters' bags indicated that male ducks predominated only slightly over females. Blue-winged teal again made up the largest percentage of species with green-winged teal and the wood duck tying for second place. The mallard has now dropped to fourth,



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being replaced by the green-winged in third, and the black in fifth place. See Chart #2. Although the wood duck shows an increase in the District figures, only a few were found in the Matchedash Bay area.

Scaup, however, show a considerable increase over the 1963 harvest, when only twelve were reported in the District.

Best harvest reports are from the smaller and less known waterfowl areas such as Lake Dalrymple, Kettles Lake and Midland Point, where 89 hunters in 237 man-hours harvested 100 ducks for an average of 1.12 ducks per hunter. It took 2.37 man-hours of hunting to shoot one duck. Statistics from these areas are lumped together with other areas and shown in Chart #1 under Remainder (10 areas).

At the four check points along the west side of the Holland Marsh, approximately eight out of every ten hunters checked were new Canadians.

Comments

From our figures this year it is apparent that the wood duck is increasing considerably in this area. The unusual low water in Matchedash and Holland Marsh, depleting much of the marsh of its hatching assets, no doubt was a special factor this year in the continuing decline of the black and mallard. The gradual increasing hunting pressure on opening days in recent years by many hunters, who's knowledge of the range of the gun in their hands apparently is negligible, may soon turn cur opening days of duck hunting into something comparable with Chinese holidays. A state of the sta

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CHART #1

DUCK HUNTING STATISTICS OPENING DAY SEPTEMBER 26, 1964 LAKE SIMCOE DISTRICT

Area	Hunters	Hunter- hours	Harvest	Bird per Hunter	Man-hours per Bird
Holland Marsh Cook's Bay	417	2141	209	.50	10.2
Matchedash Bay	211	1330	148	.70	9.0
Minesing Swamp	62	85	21	.34	4.0
Remainder (10 areas)	358	1153	31 9	.89	3.6
Totals	1043	4709	697	.66	6.7

Cont'd

4.200		Cri	pples		Hunters	Average	
Area	Lost	%	Found	5%	Dogs	Per Hunter	
Holland Marsh Cook's Bay	28	13.4	1	ц 1 1	14	5.1	
Matchedash Bay	17	11.5	1	.7	10	6.3	
Minesing Swamp	15	71.4			۷.	1.4	
Remainder (10 areas)	57	17.7	11	3.4	23	3.2	
Totals -	117	16.8	13	1.9	51	4.5	

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CHART #2

Lake Sincoe	District	t - Sept. 20	5, 1964	
Spacies	Male	Female	<u>Total</u>	Per cent
Black	31	47	78	11.2
Mallard	60	51	111	15.9
Green-winged teal	65	64	129	18.5
Blue-winged teal	108	74	182	26.1
Wood duck	63	66	129	18.5
Pintail	3	8	11	1.6
Scaup	16	21	37	5.3
Redhead		1	1	•2
American Widgeon (Baldpate)	2	6	8	1.1
Shoveler		1	1	.2
Gadwall	1		1	.2
Mergansers	4	5	9	1.3
Total	353	344	697	

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CHART #3

Species Harvested September 26, 1964 Black Wood G.W. B.W. Area Duck Mallard Teal Teal Duck Pintail Scaup Holland Marsh 26 34 47 52 5 9 24 Matchedash Bay 29 29 39 35 5 4 4 Minesing 4 Swamp 1 1 4 11 Remainder 24 39 87 2 10 Areas 4.4 94 24 78 37 111 129 182 129 11

Cont'd

Area	Redhead	Gadwall	Shoveler	Am. Widgeon (Baldpate)	Mergansers	
Holland Marsh	1	1	1	5	5	210
Matchedash Bay	<u> </u>				2	147
Minesing Swamp						21
Remainder 10 Areas				3	2	319
-	1	1	1	8	9	697

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THE PRESENT STATUS OF SHARP-TAILED GROUSE IN THE KENORA DISTRICT - 1963

by R. W. McGillivray Conservation Officer

Abstract

A survey to locate coveys and dancing grounds of sharp-tailed grouse carried out in the Kenora District between January 1, 1963 and January 31, 1964 produced a total of 285 sharp-tails, an aggregate of 31 sightings made on 26 locations. This is an increase of 204 birds over the 81 observed in 1962. The increase is probably due to an increase in effort to locate the coveys, rather than a total increase in population numbers. Coveys ranged in size from 1 to 40 (approx.) birds, with the average covey size being 9.2 birds per covey. Seven new dancing grounds were located to bring the total of known, active dancing grounds to eight. A new census technique employing the use of a helicopter was tried and proved to be unsuccessful at this time. Breeding success information was limited with only 2 broods being observed. The increase in the size of fall coveys over those observed during the spring, may indicate that the population has increased this year. Hunting pressure is considered to be light, with only eight birds known to have been bagged in 35 man-hours of hunting. The fate of the sharp-tailed grouse is undetermined in this area and will depend on what happens to the existing habitat.

Introduction

This report is a continuance of a survey to locate coveys and dancing grounds of sharp-tailed grouse in the Kenora District.

Previously, work had been carried out by A. R. Olsen in 1959, and by the writer in 1962. Sightings were recorded only in the Dryden - Vermilion Bay area. As occasional reports of sharp-tails were received from other parts of the District, it was decided this year to extend the survey to obtain District-wide coverage.



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Four sharp-tail specimens collected during the hunting season were sent to Mr. H. Lumsden of the Research Branch, Maple. These specimens were identified as Prairie Sharp-tailed Grouse <u>Pedioecetes phasianellus campestris</u>.

Work on the survey commenced in January, 1963 with a concentrated effort being made to locate dancing grounds. The work was interrupted at the end of April and from this time only periodic work was carried out, up to the end of January, 1964.

Method

1. Early morning and evening auto patrols made along township roads were directed to locations where sharp-tail coveys had been observed on previous occasions.

Residents in these areas were contacted in regard to locating dancing grounds. This method proved to be rewarding, as it aided in locating four of the seven new grounds. The remaining grounds were located by personal observations made during the patrols.

2. The District staff was requested to report all sightings of sharp-tails made while carrying out their regular work.

New Census Technique Tried

Using a helicopter, an attempt was made to develop a new census technique. It was felt that sharp-tail coveys could be flushed by flying at a low altitude (20 to 30 feet) over large muskegs and open areas.

The first attempt was made on the afternoon of August 29, during the a routine flight. The test area was the large muskeg in Revel Township. Flying at an altitude of approximately 20 feet on a wandering course over the area, we were successful in flushing a covey of five sharp-tails.

A similar flight that afternoon flushed four sharp-tails from an open area in Zealand Township.

Feeling that this method had possibilities, another flight was made on September 16. Flying over established locations of sharp-tail coveys, it was planned to catch the birds in open areas, flush then, and obtain an accurate count. After three hours of flying from dawn to ten o'clock, no birds had been observed. From two o'clock until five o'clock only one covey of nine sharptails was flushed from the large muskeg in Hartman Township.

In two of the three instances when coveys were flushed, it was noted that the coveys held tight until the helicopter was directly over them. In the other instance, the covey flushed well ahead of the machine. In all cases, the birds flushed in the direction of the line of flight of the helicopter making it possible to obtain a full count of all the birds in the covey.

The results of the two tests made were somewhat disappointing, but it is felt that this method would be relatively successful if correlated with the proper time of year, such as early spring or late fall.

Although the use of this technique is impractical and uneconomical for this area, it may be of value when an intensive population census is required on a large area, in a short period of time.

Sightings

A total of 285 sharp-tailed grouse was observed in the Dryden - Vermilion Bay area during the period January, 1963 to the end of January, 1964. This is an increase of 204 birds over the 81 observed in 1962. This increase is probably due to an increase in effort to locate the coveys, rather than a total increase in population numbers.

The number of sightings made was aided by records submitted by members of the district staff and, as in the past, all sightings, with the exception of one from Minaki, came from the Dryden - Vermilion Bay area.

The single bird observed at Minaki in February is considered to be a northern sharp-tail that has strayed south of its normal range. This sighting is not included in the main data of this report.

The two hundred and eighty-five sharp-tails observed are the sum of 31 sightings made on 26 locations. Six of the 31 sightings were of single birds, which are probably wandering males. Covey size varied from 1 to 40 (approx.) birds, with the average covey size being 9.2 birds per covey.

There is a possibility that a small number of coveys recorded on locations that are within one or two miles of each other has been duplicated. However, as there is no way of distinguishing between coveys, all sightings made on these locations will be considered as different coveys for the purpose of this report.

Winter observations of sharp-tail coveys indicate heavy utilization of cranberry bogs with food sources being alder, willow and white birch buds and fruits.

The locations of sharp-tail coveys observed during 1963 are listed below and illustrated in Appendix I.¹.

Date	Locati	on		, 9 - 11 , condeg gadering			No. of Birds
1963							
Jan.	N 1/2	Lot 2 -	Con.	III		Sanford Twp.	1
**Feb.	S 1/2	Lot 12-	Con.	I		Wainwright Twp.	4
Mar.	N 1/2	Lot 5 -	Con.	IV		Van Horne Twp.	1
Mar.	S 1/2	Lot 1 -	Con.	II		Mutrie Twp.	4
Apr.	N 1/2	Lot 4 -	Con.	I		Sanford Twp.	5
Apr.	S 1/2	Lot 12-	Con.	V		Aubrey Twp.	12
Apr.	S 1/2	Lot 10-	Con.	IV		Melgund Twp.	1
*Apr.	N 1/2	Lot 21-	Con.	IX		Zealand Twp.	14
****Apr.	S 1/2	Lot 4 -	Con.	I		Britton Twp.	15
***Apr.	N 1/2	Lot 3 -	Con.	II		Wabigoon Twp.	9
Apr.	S 1/2	Lot 8 -	Con.	III		Van Horne Twp.	4
Apr.	N 1/2	Lot 4 -	Con.	II		Eton Twp.	1
*July	N 1/2	Lot 21-	Con.	IX		Zealand Twp.	Brood 1 + 11
							Brood $1 + 8$
Aug.	N 1/2	Lot 6 -	Con.	V		Revel Twp.	5
Sept.	N 1/2	Lot 12-	Con.	VI		Hartman Twp.	9
Sept.	N 1/2	Lot 3 -	Con.	XII		Zealand Twp.	15
Sept.	N 1/2	Lot 1 -	Con.	IV		Hartman Twp.	4
**Sept.	S 1/2	Lot 12-	Con.	I		Wainwright Twp.	18
Sept.	S 1/2	Lot 2 -	Con.	II		Mutrie Twp.	15
Sept.	S 1/2	Lot 8 -	Con.	I		Britton Twp.	11
Sept.	S 1/2	Lot 21-	Con.	XII		Zealand Twp.	12
Sept.	S 1/2	Lot 10-	Con.	V		Eton Twp.	23
Dec.	N 1/2	Lot 2 -	Con.	I		Britton Twp.	7
***Dec.	N 1/2	Lot 3 -	Con.	II		Wabigoon Twp.	16
Dec.	Dryden	Paper Co.	.Rd.	Camp	#32,	Burning Lake	1
Dec.	S 1/2	Lot 12-	Con.	VI		Hartman Twp.	1
Dec.	N 1/2	Lot 11-	Con.	II		Wainwright Twp.	3
Dec.	S 1/2	Lot 2 & 3	3. Cor	n.II		Wainwright Twp.	6
Dec.	N 1/2	Lot 5 -	Con.	II		Van Horne Twp.	7
****Jan.64	S 1/2	Lot 4 -	Con.	I		Britton Twp.	40 approx.

*, **, ***, **** Same Location, Different No. Birds observed at different times.

 A map showing the location of dancing grounds and sightings of sharp-tailed grouse coveys accompanied the original report now in the Fish and Wildlife Library, Maple. ingeneration of the second 1 million and 1 million second second

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Dancing Grounds

Seven new dancing grounds were located this year to bring the total of known active dancing grounds to eight.

Two dancing grounds located by Olsen (1959) have become inactive and no apparent reason can be found for the birds abandoning these sites. Sharp-tails are still present in these areas and an effort to relocate their new dancing grounds will be made this coming spring.

The locations of dancing grounds and the largest number of birds observed on each are listed below.

Map Location Index	Location	No. Birds Observed
A B C D E F G H *	N 1/2 Lot 2 - Con. II - Wabigoon Twp. S 1/2 Lot 1 - Con. II - Mutrie Twp. N 1/2 Lot 4 - Con. I - Sanford Twp. N 1/2 Lot 12- Con. V - Aubrey Twp. S 1/2 Lot 12- Con. I - Wainwright Twp. S 1/2 Lot 12- Con. I - Wainwright Twp. S 1/2 Lot 8 - Con. III- Van Horne Twp. N 1/2 Lot 21- Con. IX - Zealand Twp. N 1/2 Lot 21- Con. I - Britton Twp. S 1/2 Lot 1 - Con. V - Sanford Twp.	9 4 5 12 4 4 4 14 15
*	S 1/2 Lot 8 - Con. IV - Melgund Twp.	

* Dancing Grounds located by Clsen (1959) that have become inactive.

Sharp-tails were first observed dancing on March 26, which is somewhat earlier than last year, when dancing was not observed until April 1. Dancing reached its peak about April 20 and continued until April 26 when the males became inactive and dancing was spasmodic.

All eight dancing grounds are situated in cultivated fields which are usually in stubble at this time of year. The exception was dancing grounds "C" which was ploughed. The birds were observed dancing atop and between the furrows.

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During visits to dancing grounds "B", "D" and "G" birds were observed that did not participate in the dancing activities. These birds are considered to be females and the ratio of males to females observed was:

B - 3:1; D - 9:3 (3:1); G - 10:4 (2.5:1)

Breeding Success

After nesting took place, work on this survey was limited with the results that only two broods were observed throughout the summer months.

The broods were observed near dancing grounds "G" and consisted of one hen with 11 young, and one hen with eight young. Breeding success in this case was good and as indicated by later observations, the survival of young was high. However, as this is the only indication of breeding success, it is impossible to apply it to the whole area.

Apparent increases in the size of fall coveys over those observed in the spring may be evidence that the population has increased this year. Spring flushing counts on dancing grounds should give a true picture of the population trend.

Hunter Success

In the past, no hunter contact information was collected for sharp-tailed grouse. This was primarily due to the difficulty of obtaining such information.

This year sportsmen were informed of the need for hunter success information through the medium of department news releases, talks to conservation clubs and hunter safety training classes, and personal contact in the field. Sportsmen who expressed an interest in hunting sharp-tails were requested to report their success on the forms provided.

Eleven hunters reported hunting a total of 35 man-hours and killing eight sharp-tailed grouse. Five of the eight birds killed were sexed and aged. These data are tabulated below:

> No. Birds Aged & Sexed - 5 No. Adult Males - 3 No. Adult Females - 1 No. Juvenile Males - 1 No. Juvenile Females - 0

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Hunting pressure is considered to be light and may be attributed to the following reasons:

- (1) Few local sportsmen take to the field specifically to hunt sharp-tails.
- (2) The majority of sharp-tail coveys are found on private land and in many cases the land owners are reluctant to permit sportsmen to hunt on their property. These land owners indicate that they enjoy watching the activities of the birds and do not wish to expose them to destruction by the gun.
- (3) Most hunters who encounter a covey of sharp-tails lack the knowledge of how to hunt this species. They find the birds flush wild and feel that success can only be obstined by "plinking" at them from some distance with a .22 calibre rifle.

Prairie Chickens (Pinnated Grouse)

During conversations with some of the older residents of the area, some confusion was encountered with the use of the term "prairie chicken".

The Prairie Chicken or Pinnated Grouse <u>Tympanuchus</u> <u>cupido</u> was at one time plentiful in this area and according to the older residents large flocks were observed along the railway tracks during the time that grain was transported in leaky box cars from the Western Provinces to the Head of the Lakes.

It is suggested by these residents that the grouse moved into this area by following the trail of grain left on the tracks by the leaking boxcars and when leak-proof cars came into being the birds diminished with the loss of the ready food supply. Sharp-tailed grouse then moved in to inhabit the range abandoned by the prairie chickens.

The prairie chicken is all but gone from this area now. The last sighting of this species was recorded by Olsen (1959), when he observed two pinnated grouse dancing with four sharp-tails on the S 1/2 Lot 1, Con. V, Sanford Township. This dancing ground has since become inactive.

Although the prairie chicken has disappeared from this area, the term is still used by local residents when referring to the sharp-tailed grouse. Buy the generation of the second s

Discussion

The fate of the sharp-tailed grouse in this area is undetermined. Indications are that the population has increased this year and if this is true, the increase is probably due to good breeding success and is limited only to this year.

It is evident that the future of the sharp-tailed grouse in this area will depend on what happens to the existing habitat, particularly in the Dryden - Vermilion Bay area. Ideal situations exist here to exercise some constructive management. Timber harvesting combined with controlled burning on these locations would not only improve sharp-tail range, but would also aid blueberry production. However, until such time as more interest is placed on sharp-tailed grouse, management of this species must be limited.

The following are suggestions for future management in this area:

- Continuance of the spring survey using the Road traverse -Listening Count Method to locate dancing grounds. Deputy Chief Rangers could be organized to conduct this part of the survey in their areas under the direction of the conservation officer in charge.
- 2. Combined with the above, flushing counts on known dancing grounds to establish a population trend.
- 3. More intensive work on brood counts is required to relate breeding success.
- 4. Increased effort to obtain hunter success information with emphasis on the collection of wings, tails and possible crop analysis. This would require informing sportsmen of the need for the information and obtaining their co-operation.

Acknowledgments

A vote of thanks is extended to the members of the district staff for their co-operation in providing information for this report.

Special mention is given pilot Pete Peterson for his co-operation and skill in handling the helicopter and to District Forester, G. F. Coyne for providing the four specimens sent to Maple.

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Thanks is also extended to Fish and Wildlife Supervisor, Wm. Charlton and Biologist, K. Chambers for their constructive criticisms of the writing of this report.

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LAKE MINDEMOYA CREEL CENSUS, 1961, 1962, 1963

by

F. A. Zimmerman, Conservation Officer, Sudbury Forest District

Abstract

Lake Mindemoya is one the Sudbury Districts most productive and heavily utilized walleye-perch lakes. A creel census begun on this lake in 1961 has been continued each year since then. This report provides the 1963 creel records and compares the data for the three years.

Methods Used

The 1963 creel census was carried out in a manner similar to that used in 1961 and 1962. (Zimmerman 1962, 1963)

<u>1963 Data</u> - The census period was from June 4 to October 24 and 131 of the potential 146 days were fished. 1278 fishermen were checked during this interval. They caught 4061 fish of six species in 5228 hours. The largest portion of the catch (47.2%) was represented by the walleye (<u>Stizostedion vitreum</u>) with yellow perch (<u>Perca flavescens</u>) making up 34.3 per cent. The former species supported the fishery from early June to mid-September when perch began to dominate the catch. Whitefish (<u>Coregonus clupeaformis</u>) were most plentiful during the latter part of September but as in previous years played a relatively insignificant role in the lake's fishery as did the smallmouth bass (<u>Micropterus dolomieui</u>) the northern pike (Esox lucius) and the rock bass (Ambloplites rupestris).

Tables 1, 11 and 111 provide the 1963 data in detail.

A Comparison of the Data Collected in 1961, 1962, 1963

Since 1961, 4392 anglers have been checked on Lake Mindemoya. During this time they caught 12,265 fish of six species with the walleye representing 51.9 per cent of the fish and the yellow perch 33.2 per cent.

If we let the percentage relative frequency for each species of the 1961 harvest represent 100 then considering the perch and walleye data in 1962 the perch improved their position in the season's total by almost 44 per cent while the walleye declined by 9 per cent.



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In 1963 the perch still showed an improvement over 1961 of 35 per cent while walleye continued to decline by 17 per cent. Tables IV, V and VI show the data comparing the three years.

The period June 16 to October 15 is common to all three creel census. Within these periods it appears that the majority of the walleye are taken between June 16 and July 31 while the majority of the perch are taken between September 16 and October 15. Considering this period alone in the three years it was found that between 40 and 54 per cent of the anglers were checked in the early summer period and between 19 and 29 per cent of the anglers in the early fall period. Between 62 and 65 per cent of the walleye were taken in the first six weeks (June 16-July 31) and between 70 to 95 per cent of the perch in the last 4 weeks (September 15-October 15). Table VII has been constructed to show this information.

Discussion

The 1962 report on the Lake Mindemoya creel census was given constructive criticism by Mr. J. C. Weir of the Game Fish Section in August of 1963. I sincerely appreciate the thought and effort Mr. Weir has given in examining my work and would like to include in this discussion his thoughts on the subject of Lake Mindemoya and my answers to his questions.

1. "The whitefish fishery must be a specialized activity and we are wondering what the catch of smallmouth bass and pike would be if these species were also given preferred attention by casting along the shore and in the vicinity of weedbeds."

The whitefish fishery is a "specialized activity" with most of these fish being caught in one "hole" where there is a very strong year round bottom spring. 164 of the 239 whitefish caught in 1963 were caught by sportsmen, in my opinion, while fishing specifically for whitefish. 52 sportsmen were recorded fishing for whitefish and they fished for a total of 261 hours. This produced a C.U.E. of 62.8 whitefish per 100 rod-hours. Most of the whitefish were taken in the September 16-30 fishing period.

Thirteen anglers were checked specifically fishing for smallmouth bass. They caught 39 bass in 58 hours for a C.U.E. of 67.2 bass per hundred rod-hours. It is fairly evident from this information that bass can be caught if desired. However, with an abundance of bass fishing available on Manitoulin and the reputation that Mindemoya has for walleye and perch the visiting sportsmen seldom seek out the bass fishing in Lake Mindemoya. Likewise relatively
few anglers specifically fish Lake Mindemoya for pike. It is my opinion, then, that bass and pike fisheries are available for interested fishermen but due to competing lakes and the popularity of Lake Mindemoya perch and walleye they are not being utilized.

2. "In 1961 and 1962, the recorded harvest of walleye is considerably greater than the corresponding harvest of perch. Is this the result of angler selectivity? What is actually being caught? Do anglers tend to keep more perch when walleyes are hard to catch? Are many small perch caught at any time and are they generally released? Is the anglers "take" in this combined fishery a true indication of the availability of these species to fishermen?" During the three years, 1961, 1962 and 1963 the harvest of walleye was considerably greater than the harvest of perch. This difference I feel was not due to angler selectivity but to the relative availability of the different species and the duration of the creel census. The perch taken in the fall were considered highly desirable and were generally of a large size. These fish were undoubtedly there in the spring and early summer and had not grown enough in three months to significantly alter their desirability to the angler. It is difficult to believe that we are catering to two different groups of fishermen -- those that come up early to fish walleye exclusively and those that come up late to fish perch exclusively. I feel quite safe in saying that if perch can be caught in June they will be caught, kept and reported. Similarily if walleye are caught in October we will have a record of them. I am more inclined to say that due to changes in the physical make-up of the two species as a result of seasonal changes which occur in the lake we are experiencing differences in the availability to the fishermen of each species at different times of the year. The period during which the perch harvest is at its peak is relatively short compared to that for walleye. This I think is due to the creel census ending in mid-October at the peak of the perch fishing. If we continued the creel census two or four more weeks in October and fishermen continued to fish Mindemoya then the percentage relative distribution of the two species would probably be closer.

The creel census data provided in this report and the other two of 1961 and 1962 are fair descriptions of what is actually being caught. When perch are caught they are kept, when walleye are caught they are kept, when both species are caught both species are kept. Perch tend to be smaller during the early part of the season but are still kept to be eaten. During the early part of the season I interviewed fishermen who were going to other Island lakes in search of perch. The perch seems to be increasing in importance as a game and food fish.

Acknowledgments

I would like to thank Mr. R. Archer of Lake Mindemoya for his advice and assistance in carrying out the Lake Mindemoya study. I would also like to thank Mr. D. Gillespie of this District for his assistance.

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TABLE 1

1963 Catch Data by Species

Perio	d	Bass	Perch	Pike	Rock Bass	Walleye	Whitefish
June	1-15		7		2	441	
	16-30		76		5	452	15
July	1-15	14	64	1	2	240	3
	16-31	7	29		7	207	29
Aug.	1-15	1	2.4	2	28	86	11
	16-31	6		6	45	184	
Sept.	1-15	Ş	60	18	10	22	40
	16-30	24	464	10	20	64	107
Oct.	1-15	43	551		227	186	29
	16-24	4	142	2		35	
Total	6	108	1417	39	346	1917	234
Per co Total	ent of Catch	2.66	34.8	.96	8.52	47.21	5.76

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TABLE 11

1963 Total Catch Data

Period		Total Fish	Hours	Anglers
June	1-15	4:50	710	186
	16-30	548	639	157
July	1-15	324	490	137
	16-31	279	493	126
Aug.	1-15	152	428	127
	16-31	241	476	128
Sept.	1-15	159	347	85
	16-30	689	695	133
Oct.	1-15	1036	854	176
	16-24	183	96	23
Total	:	4061	5228	1278

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1963 Catch Per Unit Effort (C.U.E.)

Period		Fish /100 Rod-Hours	Perch /100 Rod-Hours	Walleye /100 Rod-Hours	
June	1-15	63.4	1.0	62.1	
	16-30	85.8	11.9	70.7	
July	1-15	66.1	13.1	49.0	
	16-31	56.6	5.9	42.0	
Aug.	1-15	35.5	5.6	20.1	
1	16-31	50.6		38.7	
Sept.	1-15	45.8	17.3	6.3	
	16-30	99.1	66.8	9.2	
Cct.	1-15	121.3	64.5	21.8	
	16-24	190.6	147.9	36.5	
Seaso	n	77.7			

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TABLE 1V

Comparative Catch Data, Lake Mindemoya 1961, 1962, 1963

Year	Bass	Perch	Pike	Rock Bass	Walleye	Whitefish
1961	108	912	61	220	2010	211
1962	138	1746	83	132	2433	150
1963	108	1417	39	346	1917	234
Total	354	4075	183	ଚେଛ	6360	595

Continued:

Year	Total Fish	Hours	Anglers
1961	3522	5316	1518
1962	4682	6225	1596
1963	4061	5228	1278
Total	12265	16773	439 2

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TABLE V

Comparative Percentage Relative Frequency of Catch by Species With Total Catch & Effort Expressed as a Percentage of Three Year Totals

Year	Bass	Perch	Pike	Rock Bass	Walleye		Whitefish	Total
1961	3.1	25.9	1.7	6.2	57.1		6.0	100%
1962	2.9	37.3	1.8	2.8		52.0	3.2	100%
1963	2.7	34.9	1.0	8.5	47.2		5.8	100%
	2.9	33.2	1.5	5.7		51.9	4.9	100%
Total Fish		Hours		An	glers			
1961	28.7		31.7		3	4.6		
1962	38.2		37.1		36.3			
1963	33.1		31.2		2	9.1		
Total		100%		100%		10	0%	

TABLE V1

Comparative C.U.E. Data

Year	Fish/100 Rod-Ers.	Perch/100 Rod-Hrs.	Walleye/100 Rod-Hrs		
1961	66.3	17.2	37.8		
1962	75.2	28.0	39.1		
1963	77.7	27.1	36.7		

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TABLE V11

Percentage Distribution of Angling Effort and Catch for Selected Periods During the Three Year Creel Census

Year	1	Anglers	3 2	1	Valleye	2	1	Perch	2	
1961	54%		19%	65%		12%	95%		5%	
Total		73%			77%			100%		
1962	52%		22%	69%		8%	70%		18%	
Total		74%			77%			88%		
1963	40%		29%	62%		17%	80%		13%	
Total		69%			79%			93%		

1 June 16 to July 31.

(2) September 16 to October 15

TABLE .VII

Percentage Distribution of Angling, Effort and Catch for Selected Fordeds During the Three Year Creel Census

7	2	Perch	(J)	() ()	Walley		°	Angler	9	usoV
	5%			1.2%		65%			54%	1961
		100%			77%			73%		Total
•			7,072				22%		52%	1962
•					7.7%			74%		Total
	1.3%		80%			62%	29%		4.0%	1963
		93%						. 69%		Istor

(1) June 16 to July 31. (2) September 16 to October 15



