## RESOURCE MANAGEMENT REPORT



## DEPARTMENT OF LANDS AND FORESTS

# RESOURCE MANAGEMENT REPORT 

## FISH AND WILDLIFE BRANCH



Hon. A. Kelso Roberts, Q.C.
F.A. MacDougall

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(These Reports are for Intra-Departmental Information and not for Publication)


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

by<br>W. H. Chellew<br>Department Representative, O.T.A.F.S.S. North Bay

## Abstract

This is the scoond anmel 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 on 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 demend and showed a 12 per cent increase. Otter were very strong and choned a 30 per cent increase in price bringing a high of 53 per cent. While fisher were in very poor denand and in many cases wore 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 ruskrat trappers from southern Ontario who send their entire catch in one shipnent. 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.

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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 ruch 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.

































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Any prediction of the market for the coming year would be less than an educated guess. Although in the past few weeks there seems to be some renewed interest, the overall picture is rather quiet. Beaver and muskrats have been very slow during the surmer and it is too early to predict a trend at this time. Indications are that mink should hold fairly firm and long-haired fur is still in good demand.

Table No. I
No, of Pelts in Cider of Dollar Volume and Average Price

| Species | No. Pel ts | Dollar Value | Average Price |
| :---: | :---: | :---: | :---: |
| Beaver | 50,292 | \$705,596.76 | 14.03 |
| Muskrat | 97,54,7 | 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 1bs. | 4,337.32 | 3.24 lb . |
| Bear | 113 | 2,330.06 | 20.62 |
| Wease1 | 2,700 | 1,188.00 | . 44 |
| Wolf | 149 | 640.70 | 4.30 |
| Squirrel | 1,049 | 346.17 | . 33 |

Table No. II
1963-64 Increase \& Decrease in Pelt Volume over 1962-63

| Beaver | plus | $32 \%$ | Otter | plus | $49 \%$ |
| :--- | ---: | ---: | :--- | :--- | :--- |
| Fisher | $"$ | $65 \%$ | Raccoon | $"$ | $46 \%$ |
| Fox | $"$ | $17 \%$ | Squirrel | minus | $11 \%$ |
| Lynx | $"$ | $4 \%$ | Veasel | plus | $32 \%$ |
| Marten | $163 \%$ | $16 \%$ | Wolf | $"$ | $71 \%$ |
| Mink | $"$ | $62 \%$ | Castoreum | $"$ | $72 \%$ |
| Muskrat | $"$ | $73 \%$ | Bear | $"$ | $352 \%$ |

Table No. III
Number of Trapper Shippers According to Value of Shipments

| No. of Shippers | Dollar Value | No. of Shippers | Dollar Value | No. of Shippers | Dollar Value |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 479 | \$2-100 | 55 | \$700-800 | 16 | \$1400-1500 |
| 305 | 100-200 | 48 | 200-900 | 42 | 1500-2000 |
| 196 | 200-300 | 42 | 200-1000 | 21 | 2000-2500 |
| 146 | 300-400 | 29 | 1000-1100 | 8 | 2500-3000 |
| 133 | 400-500 | 37 | 1100-1200 | 4 | 3000-3500 |
| 99 | 500-600 | 22 | 1200-1300 | 5 | 3500-4000 |
| 34 | 600-700 | 16 | 1300-1400 | 1 | \$5000 |
|  |  |  |  | 1 | 7259 |

# 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 chis 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 1563 .

## 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.


Survey Crew
(I) W. Charlton and D. Busch
(2) T. Humberstone and K. Chambers
(3) R. Hall and D. Ware

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 Way 20 to finish the line.

## Method

The Otter aircraft (CF-ODK) was used to transport the suavey 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 wes more systematically covered by running parallel lines which had $\varepsilon 30$ 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 methoc of tally were as instructed by the Southern Research Station, Maple。

An attempt was made to assess the degree of competition bectween deer and moose on this area. This was done by counting the dear fellet groups on a plot of reduced size which $\mathfrak{f e l l}$ within the moose pellet group plot. The sire of the deer pellet plot was 6.6 ft . by 66 ft . compared to 13.2 ft . by 66 ft . Eor moose.

Ninety-three plots were tallied which was seven more than the minimum required $86(64 \times \sqrt{\text { 1.0 sq. mi. }}=36)$.

The results of the browse survey are given in Table 1 .
Population Estimate from Pellet Groups

## Moose

The number of pellet groups on the 93 plots ranged from 0 to 7 with the cotal 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.

(1) Average number of pellet groups per acre:

Average per plot x 50
$1.04 \times 50=52.0$
(2) Moose-days per square mile:

Pellet groups per acre $\times 640$ 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)

$$
64 \times \sqrt{1.8 \text { sq. miles }}=86
$$

No. plots sampled $=93$

| Groups/Plot <br> $\mathbf{x}$ | Frequency | $\mathbf{f x}$ | $\mathbf{x x}^{2}$ | $\mathbf{f x}^{2}$ |
| :---: | :---: | ---: | :---: | ---: |
| 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 | $\underline{1}$ | $\underline{7}$ | 49 | $\underline{49}$ |
|  | 93 | 97 |  | 299 |

## Sample Mean

$$
m=\frac{\sum(\underline{s})}{\sum \varepsilon}=\frac{97}{93}=1.043 \text { pellet groups } m^{2}=1.088
$$

Sample Standard Deviation

$$
\begin{aligned}
& \mathrm{df}=\mathrm{f}=\mathrm{I}=92 \\
& \mathrm{Sx}=\sqrt{\frac{\sum\left(\mathrm{Ix}^{2}\right)}{\left\{\mathrm{E}-1^{\sum}-\mathrm{m}^{2}\right.}=\sqrt{\frac{299}{92}-1.088}=1.47 \text { pellet }} \text { groups }
\end{aligned}
$$

Sample Standard Error

$$
S \bar{x}=\frac{S x}{\sqrt{E}}=\frac{1.47}{\sqrt{93}}=0.152 \text { pellet groups }
$$

Population Mean with Limits
From the "rps table at $t .05$ for 92 degrees of freedom

$$
t .05=1.987
$$

Population mean $=$ sample mean $亡 t .05$ (sample standard error)

$$
\begin{aligned}
u & =m \pm t .05(\mathrm{Sx}) \\
& =1.043 \pm 1.987(0.152)=1.043 \div 0.302
\end{aligned}
$$

At the 55 per cent confidence level there should be:

$$
\begin{aligned}
& \text { Upper limit } 1.043 \div 0.302=1.345 \text { pellet groups } \\
& \text { Lower limit } 1.043-0.302=0.74 .1 \text { pellet groups }
\end{aligned}
$$

Moose pellet groups per acres should then range from:

$$
\begin{aligned}
& 50 \times 1.345=67.25 \text { to } \\
& 50 \times 0.741=37.05
\end{aligned}
$$

Moose-days per square mile

$$
\begin{aligned}
& \text { Range at } t .05 \\
& 67.25 \times \frac{640}{13}=3311 \text { to } \\
& 37.05 \times \frac{640}{13}=1224 \text { moose-days/square mile }
\end{aligned}
$$

$\qquad$

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\therefore}\because\because,\mp@code{O
```


## Moose per square mile

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

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 $S$ with a total of 162 groups being tallied. The average number o: groups per plot was $162 / 3=1.74$. 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:

$$
\text { Average per plot x } 100
$$

$$
1.74 \times 100=174
$$

(2) Deez-days per square mile:

$$
\begin{aligned}
& \frac{\text { Pellet groups per acre } \times 640}{\text { Deposition rate }(13)} \\
& \frac{174 \times 640}{13}=8566.1
\end{aligned}
$$

(3) Deer per square mile:

Deer-days per square mile

$$
\begin{aligned}
& \text { Number of days of pellet deposition } \\
& \frac{8566.1}{220}=38.9 \text { or } 39 \text { deer per sq. mile }
\end{aligned}
$$

## 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/P1ot Frequency


## Sample Mean

$$
m=\frac{\sum(f x)}{\{f}=\frac{162}{93}=1.742 \quad \mathrm{~m}^{2}=3.035
$$

Sample Standard Deviation

$$
\begin{aligned}
& \mathrm{df} .=f-1=\varepsilon 2 \\
& S x=\sqrt{\frac{\sum\left(\sum x^{2}\right)}{\sum \sum-1}-m^{2}}=\sqrt{\frac{612}{-2}=3.035}=1.90 \text { pellet groups }
\end{aligned}
$$

## Sample Standard Error

$$
S \bar{x}=\frac{S x}{\sqrt{f}}=\frac{1.90}{\sqrt{93}}=0.197 \text { pellet groups }
$$

Population Mean with Limits

```
df. \(=92 \quad \therefore \mathrm{t} .05=1.987\)
\(\mathrm{U}=\mathrm{m}+\mathrm{t}\) t. 05 ( \(\mathrm{S} \overline{\mathrm{x}}\) )
\(=1.7 \overline{4} 2 \pm 1.987(0.197)=1.742 \pm 0.391\)
```

Therefore, 85 per cent confident of:
Upper 1imit $1.742+0.391=2.133$ pellet groups
Lower 1 imit $1.742-0.391=1.351$ pellet groups
Deer pellet groups per acre should then range from:

$$
\begin{aligned}
& 100 \times 2.133=213.30 \text { to } \\
& 100 \times 1.351=135.10
\end{aligned}
$$

## Deer-days per square mile

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

$$
\begin{aligned}
& \frac{104,94}{220}=4.7 .70 \text { to } \\
& \frac{664.7}{220}=30.21 \text { deer/square mile }
\end{aligned}
$$

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 1563 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
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 1563 compared to 4.7 .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 escimate of the moose population has decreased from 16.3 animals per square mile in 1563 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.
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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 tharks 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 Wildiife Supervisor, for his helpful comments and K. Chambers, District Biologist, who carried out the statistical analysis.

TABLE I

| SPECIES | Freq. Index | Living Stems per acre | \% of Stems Browsed | \% Stems Killed | $\begin{gathered} \text { \% Stems } \\ \text { Mutilated } \\ \hline \end{gathered}$ | \% of Available 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 | 53.9 | 1.7 |
| Poplar | . 55 | 1,469 | 34.8 | 20.1 | 24.6 | 9.4 |
| Haze1 | . 66 | 6,323 | 47.6 | 2.5 | 21.3 | 40.5 |
| Yountain Ash | . 04 | 35 | 10.0 | 9.1 | 50.0 | . 2 |
|  |  | 15,650 |  |  |  | 100.0 |

Frequency Index (93 plots)

| Species | Occurrence Plots | Occurrence (\%) |
| :--- | :---: | :---: |
| White Birch | 38 | 41 |
| Balsam | 78 | 84 |
| Mountain Ash | 4 | 4 |
| Willow | 6 | 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 $\frac{E L \times 330}{93}$

| 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 | 1508 |
| Cherries | 40 | 156 |
| Juneberry | 73 | 255 |
| Poplar | 414 | 6,323 |
| Hazel | 1,782 |  |

Per cent of Stems Browsed $\frac{E B}{E L} \times 100$

| Species | EB | EL | Per cent Browsed |
| :--- | ---: | ---: | :---: |
| White Birch | 59 | 407 | 14.5 |
| Ba1sam | 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 $\frac{E K}{E K+E L}=100$

| 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 |


| 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 |
| Haze1 | 379 | 1,782 | 21.3 |

Per cent of Available Browse $\quad \frac{E L}{E L}$ (total) $\times 100$

| 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 | 2.4 |
| Hazel | 1,782 | 40.5 |
|  |  | 100.0 |


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# DUCK BANDING, KAPUSKASING DISTRICT, 1964 

by<br>G. M. Hendry, Biologist

## Abstract


#### Abstract

The initial banding operation at Pitukupi Lake resulted in 481 ducks being banded. Eight species were represented in the capturas. 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. A11 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 nozthern section of the lake is deep ( 40 feet max.) with a gravel bottorn while the southern section is shallow ( 6 feet max.) and has a thick layer of muck over the grave1. The trap sites are located between $84^{\circ} 06^{\prime} \mathrm{W} ., 50^{\circ} 41^{\prime} \mathrm{N}$. and $84^{\circ} 12^{\prime} \mathrm{W} .$, $50^{\circ} 37^{\prime} \mathrm{N}$.

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 comon energents 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), treabling 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.

## Traps and Collecting Box

A11 six traps measured 22.6 feet by 14.3 feet (see diegram at back). The sides were constructed of two inch by two inch mech chicken wire which was stapled to the five feet high, spruce supportirg poses. Chicken wire of one inch by one inch mesh was used as roosing. In the end of the crap nearest the shore, a fwo foot ly three foct hole was cut through which the ducks could be triven to the protable collccting box. Doors were constructed to $2 \times 4^{3}$ s and measured five feet by two feet. These were plinced in the side of the trap furthest frou the hole for the collecting bor. Fach funnel entrance was four inches wide and closed ofs at a height of ter inches above the water line. These traps were dosigned fron the trap illustrated in diagram 24 , Section B of the Guide to Wate-Eow1 Banding.

To remove the birds from any trap the collecting bor would be placed in the opening at the end of the crap and the trigger for the drop-dooz, set. On entering che trap, the banders woulci d:ive the birds inco the box; the front door of the box was thea droppad by pulling the trigger. The ducks could then be easily removed through the tro sliding doors in the top of the box.

## Eaiting

ine selection of cracked corn, the only bait used throughout the project, was based on the findings of Gibson (1964). Wach trap site was prebaited with approximately 75 pounds of corn before the trars rore erected. Once the traps were completed and the birds had atered to feed, the enteances were closed (Aug.1习). From this cate to the complerion of tine project a total of 50 pounds of coon per dizy was divided omong the six traps.

## Results

1. toter of 401 cuoks rere banded and released at the conelusica of the I964 banding operation (Table I). After the traps hed bean eracted. a seven day period elapsed before any evidence cf freling was observed. Frca Aug。 19 when the traps were closed until Aug. 24, only six birds riere banded. This was due to the fact that the diucks hadn't started feeding in large enough groups when the craps were closed. Daily catches after this date ranged from four to a high of 45 ducks. Fox trap was the most productive throurhout the projent with 226 ducks ( 47 per cent of total) being captured. Echo ard Dog traps collected 164 (34\%) and 91 (19\%) ducks, respectively.

TABLE I - Species, Sex, and Age Composition of Ducks Banded - 1564-

| Species | Adult |  | Immature |  |  | \% Imm/100 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nale Female |  | Male | emal | Total | Immatu | Ac. 8 |
| Black | 110 | 34 | 54 | 48 | 24.6 | 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 | - | 1 | 1 | 1 | 3 | 66.7 | 200 |
| (Anas carolinensis) |  |  |  |  |  |  |  |
| American Widgeon | - | 1 | 2 | 1 | 4. | 75.0 | 300 |
| (Mareca americana) |  |  |  |  |  |  |  |
| Ring-necked Duck | 1 | - | - | - | 1 | - | - |
| (Nyroca collaris) |  |  |  |  |  |  |  |
| Pintail | 3 | 1 | - | 1 | 5 | 20.0 | 100 |
| (Anas acuta) |  |  |  |  |  |  |  |
|  | Total..... 481 |  |  |  |  |  |  |

Live decoys were placed in Dog trap on Sept. 1 in a successful attempt to start the birds feeding in that area. Once 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 coin.

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.

A total of 1051 ducks were recrapped. Of these 586 were blacks and 457 were mallards. The highest individual day's catch of repeats was 143 dueks 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 (1:64) found black duck age ratios of 77.1 per cent, 90.8 per cent and 90.0 per cent immatures, respectively, as a result of banding operations. However, Bellrose et al (1961:469) state ... "because juveniles and adults do not follow identical migration schedules or routes, age ratios showed seasonal and regional variations." To test foz 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.

These data indicate an exodus of mallard and black ducks in the last week of August. However, a subsequent inslux occurred only in mallards indicating that perhaps the majority of black duck juveniles had already Elown 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 Faeviously trappad and banded at Pitukupi Lake indicated that the barding traps were selective for the latter species (Table 2).

TABEE 2 - Mmber of Ifallard and Black Ducks Trapped and Banded and the ner cent Rotropped during the 1964 Operation at Pitukupi Lake.

| Nillard | Black Duck |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Mumber | Per cent | Nurber | Per cent |  |
| Trapped Retrapped <br> and <br> Sanded | Recrapped | Trapped <br> and <br> Banded | Retrapped | Retrapped |
| 215 | 212.6 | 246 | 586 | 233.2 |

Recumen evions

1. Due w the fact that Alpha, Bravo and Charlie traps failed to cepture s cingie zuck, all banding activities in these areas should be disccmtinuad next year. Two of these traps should be relocated in tin south end of the lake; the third trap being used for mainecnance purposes. Give 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 cre inch chicken wire mesh in the collecting box should be replaced by two inch nesh. Many ducks damaged their bills in the sma?ler mech this year. A reduction in the dimensions of the bor to $4^{\circ} \times 1-1 / 2^{\circ} \times 3^{\circ}$ would not only facilitate the removal of the birds but also recluce the weight and hence ease handing.
4. Irmediately 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 secomended for next year. Careful exarination 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 recomended. 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 OExicer 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 $1 \geq 54$ Duck Banding Project, exclüsive of permanent staff salaries, provisions, outboard gas and transportation is as follows:

| Six traps $14.3^{\prime} \times 22.6^{1}$ | -750 of 2 inch chicken wire |
| ---: | :--- |
|  | -300 of 1 inch chicken wire |
|  | $\begin{array}{l}54.45 \\ \text { Cost of Wire }\end{array}$ |
| $\$ 1.38$ |  |
| $\$ 95.83$ |  |

- $166^{\prime}$ of $2 \times 2^{\prime} \mathrm{s} \quad 8.30$
- $84^{\prime}$ of $2 \times 4^{\prime} \mathrm{s} \quad 6.00$
- $168^{\prime}$ of $1 \times 6^{\prime} \mathrm{s} \quad 11.76$
- 2 pc . of plywood $2^{\prime} \times 3^{\prime} \quad \frac{4.20}{\text { Cost of Wood }}$
- 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 $\frac{225.00}{\$ 718.00}$

Tota1 Cost $=$. ................ $\$ 936.40$
No. of ducks banded $=481$
Cost per duck banded $=\$ 1.95$

Collecting Box

$$
\begin{gathered}
\text { Removal } \\
\text { doors }
\end{gathered}
$$ Drop Duck entrance

( $6^{18}$ wide) door

SCALE: 1 in. -4 ft .




# 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 Septeriber 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 Wildife 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. Funters are requested to fill out a special dally report Form. All Durhan 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.


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.

| Year |  | Ducks | Hunter | County |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 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 | - | - | - | 1.5 |
| 1960 | 1.1 | 1.8 | 1.6 | 2.8 | 0.7 |

The scanty infomation 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 imatures per adult for this species is shown
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 et al (1961), was Lat juveniles were "more vulnerable to hunting than adults; the vulnerability differential varied with place, time of hunting season, year and species. ${ }^{18}$.These findings, obtained in central and north-central United States, are probably applicable to southern ontario; 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 Hunting Effort and Bag－Opening Day（Sept．21）

|  |  | $\begin{aligned} & \text { •i } \\ & \text { ت⿹\zh26灬 } \end{aligned}$ |  | 迺 | $\begin{aligned} & \stackrel{4}{u} \\ & \stackrel{H}{y} \end{aligned}$ | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hunters | 22 | － | 78 | 56 | 71 | 227 |
| Hunter－hours | － | － | 528 | 372 | 268 | － |
| Dogs | － | － | 2 | 1 | 3 | 6 |
| Mallard | － | － | 15 | 24 | 5 | 44 |
| Black duck | － | － | 14 | 23 | 7 | 44 |
| Blue－winged teal | － | － | 26 | 6 | 29 | 61 |
| Wood duck | － | － | 4 | 13 | 13 | 30 |
| Green－winged teal | － | － | 24 | 3 | 4 | 31 |
| Pintail | － | － | 10 | － | － | 10 |
| Others | － | － | 10 | 1 | 2 | 13 |
| Total ducks | 50＊ | － | 103 | 70 | 60 | 283 |
| Ducks per hunter | 2.3 | － | 1.3 | 1.3 | 0.8 | 1.2 |
| Hours per duck | － | － | 5.1 | 5.3 | 4.5 | － |
| ＊unidentified |  |  |  |  |  |  |
| N．B．－Hali．－Haliburton；North．－Northumberland； <br> Peter．－Peterborough；Vict．－Victoria． |  |  |  |  |  |  |

TABLE II - Duck Hunting EEfort and Bag - Remainde: of Sept.

| Hunters | 99 | - | 3 | 30 | 25 | 157 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Hunter-hours | - | - | 17 | 73 | 74 | - |
| Dogs | - | - | - | 4 | 5 | 9 |
| Mallard | - | - | 3 | 28 | 2 | 33 |
| Black duck | - | - | 6 | 23 | - | 29 |
| Blue-winged teal | - | - | - | - | 2 | 2 |
| Wood duck | - | - | - | 16 | 1 | 17 |
| Green-winged teal | - | - | - | 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 | 0.2 | - |



## TABLE III－DUCK HUNTING EFFORT AND BAG－October

| Hunters | 132 | 5 | - | - | 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 HUNTING EFFCRT AND BAG－November

|  | $\begin{aligned} & \text { 稛 } \\ & \text { 品 } \end{aligned}$ | － |  | 范 | ＋ | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hunters | 86 | － | － | － | 4 | 90 |
| Hunter－hours | － | － | － | － | 17 | － |
| Dogs | － | － | － | － | 1 | 1 |
| Total ducks | 102＊ | － | － | － | 1 | 103 |
| Ducks per hunter | 1.2 | － | － | － | 0.3 | 1.1 |
| Hours per duck | － | － | － | － | 4.3 | － |

TABLE V－DUCK HUNTING EFFCRT AND BAG－December

|  | $\begin{aligned} & \text { 跔 } \\ & \text { 4y } \\ & \text { a } \\ & \hline \end{aligned}$ | $\stackrel{\text { rig }}{\text { 令 }}$ |  | ¢ ¢ ® | ＋ | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hunters | 34 | $\cdots$ | － | － | － | 34 |
| Total ducks | 6 | － | － | － | － | 6 |
| Ducks per hunter | 0.2 | － | － | － | － | 0.2 |

TABLE VI - Source and Species Conposition of 1963 Duck Wing Collection

| Species | Number of Specinens by County |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { 萌 } \\ & \text { 品 } \end{aligned}$ |  | $\begin{gathered} \dot{y} \\ \stackrel{y}{0} \\ \stackrel{y}{0} \end{gathered}$ | $\begin{aligned} & \stackrel{4}{0} \\ & \vdots \\ & i \end{aligned}$ | $$ | Date Collected |
| Wood duck | - | 1 | 27 | 26 | 61* | Sept.21-0ct. 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 |
| PintaiI | 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 | 4 | Sept.21-Cct. 22 |
| Gadwall | - | 3 | - | - | 3 | Sept.21-25 |
| Surf scoter | - | - | - | 2 | 2 | Oct. 9 |
| Lesser scaup duck | - | 1 | - | 1 | 2 | Oct. 22 \&: Nov. 11 |
| Bufflehea? | - | 2 | - | - | 2 | Oct. 31 |
| Redhead | - | 2 | - | - | 2 | Sept. $21 \%$ |
| Black-mallard hybrids | - | - | - | - | 2* |  |
| Shoveler | 1 | - | - | - | 1 | Sept. 25 |
| Anerican goldencje duck | - | 1 | - | - | 1 | Nov. 5 |
| TOTALS$* \quad \begin{array}{llll}\text { specinens with no designated } & 122 & 82 & 72 \\ \text { county } & \text { included }\end{array}$** $\begin{aligned} & \text { convictions registered }\end{aligned}$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  |


| Species | Nurber of Wing Specinens |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Un- } \\ \text { usable } \end{gathered}$ | $\frac{\text { Une }}{0^{\circ}}$ | ed | $\frac{\text { Adu }}{}$ | 1ts | 0 | $\frac{\text { Irma }}{9}$ | $\frac{\text { tures }}{\text { Total }}$ | 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 (baldp | te) 0 | 0 | 0 | 1 | 3 | 4 | 4 | 8 | 2.7:1 |
| Pintail | 0 | 6 | 6 | - | - | - | - | - | -- |

OPENING DAY OF THE WATERFONL SEASON SEPTEMBER 26, 1964, LAKE SITCOE DISTRICT

by<br>J. S. Dorland<br>Assistant Senior Conservation Officer

## Abstract

One thousand forcy-eight hunters were checked in fourteen of the numerous duck hunting areas of the District on the opening day, (escluding Dufferin County). This array 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 waterfow1 areas was obtained this year. With the help of the R.J.M.P. in boats and cars, sixteen conservation officers and biologists covered such prominent waterfowl areas as Matchedash Bay, Kolland Marsh, Cook's Bay, Minesing Swamp, Lake Dalrymple, Little Mud Lake, Dufin 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, frow the previous year. Of the total number of birds reported shot 14.3 per cent were reported not retrieved by sone hunters, however, 11 per cent of these cripples were retrieved by other hunters. See Chart 非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 75 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 fenales. 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,
being replaced by the green-winged in third, and the black in Fifth place. See Chart 非2. Although the wood duck shows an increase in the District figures, only a few were sound in the Matchedash 3ay area.

Scaup, however, show a considerable increase over the 1563 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 非 under Remainder (10 areas).

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

## Corments

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 auch 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 humting 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.

CHART 非1
DUCK HUNTING STATISTICS OPENING DAY SEPTEMBER 26, 1964 LAKE SIMCOE DISTRICT

| Area | Hunters | Munter- <br> hours | Harvest | Bird <br> per <br> Hunter | Man-hours <br> pird <br> Bird |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Folland Marsh <br> Cook's Bay | 417 | 2141 | $20 \Omega$ | .50 | 10.2 |
| Matchedash <br> Bay | 211 | 1330 | 148 | .70 | 9.0 |
| Minesing <br> Swamp | 62 | 85 | 21 | .34 | 4.0 |
| Remainder <br> (10 areas) | 358 | 1153 | 319 | .89 | 3.6 |
| Totals | 1043 | 4709 | 697 | .66 | 6.7 |

Cont'd

| Area | Cripples |  |  |  | Hunters <br> using <br> Dogs | Average <br> Hours <br> Per Hunter |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Lost | $\%$ | Found | $\%$ |  |  |
| Holland Marsh <br> Cooi's Bay | 28 | 13.4 | 1 | .5 | 14 | 5.1 |
| Matchedash <br> Bay | 17 | 11.5 | 1 | .7 | 10 | 6.3 |
| Minesing <br> Swamp | 15 | 71.4 |  |  | 4 | 1.4 |
| Remainder <br> (10 areas) | 57 | 17.7 | 11 | 3.4 | 23 | 3.2 |
| Totals | 117 | 16.8 | 13 | 1.2 | 51 | 4.5 |



CH2TI非2
Species and Sex of Waterfowl Checked Lake Simcoe District - Sept. 26, 1964

| Spacies | Male | Feas 1e | Total | Per cent |
| :---: | :---: | :---: | :---: | :---: |
| Black | 31 | 47 | 78 | 11.2 |
| Mallard | 60 | 51 | 111 | 15.9 |
| Green-winged tosl | 65 | 64. | 129 | 18.5 |
| Blue-vinged teal | 108 | 74. | 182 | 26.1 |
| Wood duck | 63 | 66 | 129 | 18.5 |
| Pincail | 3 | 8 | 11 | 1.6 |
| Sceup | 16 | 21 | 37 | 5.3 |
| Redhead |  | 1 | 1 | . 2 |
| Anescen widgeon (Baldpate) | 2 | 6 | 8 | 1.1 |
| Shoveler |  | 1 | 1 | . 2 |
| Gadwa? 1 | 1 |  | 1 | . 2 |
| Merganseas | 4 | 5 | 9 | 1.3 |
| Total | 353 | 34.4 | 697 |  |

CHART 非3
Species Harvested September 26, 1964

| Area | Black <br> Duck | Mallard | G.W. <br> Teal | B.W. <br> Teal | Wood Duck | Pintail | Scaup |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kolland Marsh | 24 | 34 | 47 | 52 | 26 | 5 | 9 |
| Matchedash Bay | 29 | 29 | 39 | 35 | 5 | 4 | 4 |
| Minesing Swamp | 1 | 4 | 4 | 1 | 11 |  |  |
| $\begin{aligned} & \text { Renainder } \\ & 10 \text { Areas } \end{aligned}$ | 24 | 4.4 | 39 | 94 | 87 | 2 | 24 |
|  | 78 | 111 | 129 | 182 | 129 | 11 | 37 |

Cont'd

| Area | Redhead | Gadwall | Shoveler | Am. Widgeon <br> (Baldpate) | Mergansers |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |

# THE PRESENT STATUS OF SSARP-TAILED GROUSE IN THE KENORA DISTRICT - 1963 

by
R. W. McGillivray Conservation Officer

## Abstract


#### Abstract

A survey to locate coveys and dancing grounds of sharp-tailed grouse carried out in the Kenora District between January 1, 1953 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 206 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 tine. 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 eighe 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 1:62. 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.

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 Pedioecetes phasianellus campestris.

Work on the survey comenced 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, IS64.

## 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 nuskeg 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 Tomship.

Feelinj that this method had possibilities, another flight was made on September 16. Flying over established locations of sharp-tail coryeys, it was planned to catch the birds in open areas, flush ther, 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 Elushed, it was noted that the coveys held tight until the helicopter was directly over them. In the other instance, the covey Elushed 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, 1=63 to the end of January, 1:64. This is an increase of 204 birds over the 81 observed in 1562 . 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 $0:$ 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 Erom 1 to 40 (approx.) birds, with the average covey size being 2.2 birds per covey.

There is a possibilicy 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 | Location |  |  | 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. |  |
| *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. | $\begin{aligned} & \text { Brood } 1+11 \\ & \text { Brood } 1+8 \end{aligned}$ |
| 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. |  |
| ***Dec. | N $1 / 2$ | Lot 3 - Con. II | Wabigoon Twp. | 16 |
| Dec. | Dryden | Paper Co. Rd. Camp 非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. Con. 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.

1. 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.

## 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 01sen (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 <br> Index | Location |  |
| :---: | :---: | :---: |
| A | N I/2 Lot 2 - Con. II - Wabigoon Twp. | No. Birds <br> Observed |
| B | S 1/2 Lot 1 - Con. II - Mutrie Twp. | 9 |
| C | N I/2 Lot 4 - Con. I - Sanford Twp. | 4 |
| D | N I/2 Lot 12- Con. V - Aubrey Twp. | 5 |
| E | S 1/2 Lot 12- Con. I - Wainwright Twp. | 42 |
| F | S 1/2 Lot 8 - Con. III- Van Horne Twp. | 4 |
| G | $\mathbb{N} 1 / 2$ Lot 21- Con. IK - Zealand Twp. | 14 |
| H | N 1/2 Lot 4 - Con. I - Britton Twp. | 15 |
| * | S I/2 Lot 1-Con. V - Sanford Twp. |  |
| * | S I/2 Lot 8-Con. IV - Melgund Twp. |  |

* Dancing Grounds located by C1sen (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 Apsil 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.

During visits to dancing grounds " $B^{10}$, " $D^{10}$ and "GG" 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:

$$
\text { B - } 3: 1 ; \quad \text { D }-9: 3(3: 1) ; \quad G-10: 4(2.5: 1)
$$

## 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 sping 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. Acult Males - 3
No. Adult Females - 1
No. Juvenile Males - 1
No. Juvenile Females - 0

Hunting pressure is considered to be light and may be attributed to the following reasons:
(1) Few local sporesmen 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 co 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 obatined by "plinking" at them from some distance with a .22 calibre rifle.

Prairie Chickens (Pinnated Grouse)
During conversations wich some of the older residents of the area, some confusion was encountered with the use of the term "prairie chicken".

The Prairie Chicken oz Pinnated Grouse Tympanuchus cupido 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 Prorinces 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 bozcars 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 01sen (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.

## 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 cvident that the Euture 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:

1. 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 ro District Forester, G. F. Coyne for providing the four specimens sent to Maple.

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 MINDEMCYA CREEL CENSUS, 1961, 1962, 1963

> Fy A. Zimmeman, 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)

1963 Data - The census period was fror June 4 to October 24 and 131 of the potential 146 days were fiched. 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 (Stizostedion vitreum) with yellow perch (Perca flavescens) 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 (Coregonus clupeaformis) 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 (Micropterus dolomieui) the northern pike (Esox lucius) and the rock bass (Arabloplites rupestris).

Tables I, 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.

36

8
$!$
$\therefore \because \cdots \quad \therefore \quad \because$



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. Becween 62 and 65 per cent of the walleye were taken in the first six weeks (June $16-\mathrm{July} 31$ ) 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 Mindenoya 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. ${ }^{10}$

The wnitefish 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 Minderoya perch and walleye they are not being utilized.
2. "In 1961 and $1: 62$, the recorded harvest of walleye is considerably greater than the coresponding harvest of perch. Is this the result of angler selectivity? What is actually being caught? Do anglers tend to keep nore perch when walleyes are hard to catch? Are many small perch caught at any time and are they generally released? Is the anglers "cake" in this combined fishery a true in dication of the availability of these species to fisher men?" During the three years, IVI, 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 oo those that corae 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 or 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 Cctober and fishemen 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 $1 . C 2$ 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 swaller 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

| Period | 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 | j | 60 | 18 | 10 | 22 | 40 |
| 16-30 | 24 | 454 | 10 | 20 | 64 | 107 |
| Oct. 1-15 | 43 | 551 |  | 227 | 186 | 29 |
| 16-24 | 4 | 14.2 | 2 |  | 35 |  |
| Total: | 108 | 1417 | 39 | 346 | 1917 | 234 |
| Per cent of Total Catch | 2.66 | 34.8 | . 96 | 8.52 | 47.21 | 5.76 |

TABLE 11
1963 Total Catch Data

| Period | Total Fish | Hours | Anglers |  |
| :--- | ---: | :---: | :---: | :---: |
| June | $1-15$ | 450 | 710 | 186 |
| July | $16-30$ | 548 | 639 | 157 |
|  | $16-31$ | 324 | 490 | 137 |
| Aug. | $1-15$ | 279 | 493 | 126 |
|  | $16-31$ | 152 | 428 | 127 |
| Sept. | $1-15$ | 241 | 476 | 128 |
|  | $16-30$ | 159 | 347 | 85 |
| Oct. | $1-15$ | 1036 | 695 | 133 |
|  | $16-24$ | 183 | 854 | 176 |
| Total: | 4061 | 5228 | 23 |  |

TABLE 111
1963 Catch Per Unit Effort (C.U.E.)

| Period | Fish /100 <br> Rod-Hlours | $\text { Perch } / 100$ Rod-Hours | $\begin{aligned} & \text { Walleye } / 100 \\ & \text { Rod-Hours } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| 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 |
| 16-31 | 50.6 |  | 38.7 |
| Sept. 1-15 | 45.8 | 17.3 | 6.3 |
| 16-30 | 99.1 | 56.8 | 9.2 |
| Cct. 1-15 | 121.3 | 64.5 | 21.8 |
| 16-24 | 190.6 | 14.7 .9 | 36.5 |
| Season | 77.7 |  |  |

TABLE 1V
Comparative Catch Data, Lake Mindemoya 1961, 1962, 1963

| Year | Bass | Pexch | Pike | Rock Bass | Walleye | Whitefish |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 1961 | 108 | 912 | 61 | 220 | 2010 | 211 |
| 1962 | 138 | 1746 | 83 | 132 | 2433 | 150 |
| 1363 | 108 | 1417 | 39 | 346 | 1917 | 234 |
| Total | 354 | 4075 | 183 | 698 | 6360 | 595 |

Continued:

| Year | Total Fish | Hours | Anglers |
| :--- | :---: | :---: | :---: |
| 1961 | 3522 | 5316 | 1518 |
| 1962 | 4682 | 6225 | 1596 |
| 1963 | 4061 | 5228 | 1278 |
| Total | 12265 | 16773 | 4392 |



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 | Anglers |  |  |
| 1961 |  | 28.7 |  | 31.7 | 34.6 |  |  |
| 1962 |  | 38.2 |  | 37.1 | 36.3 |  |  |
| 1963 |  | 33.1 |  | 31.2 | 29.1 |  |  |
| fetal |  | 100\% |  | 100\% | 100\% |  |  |

TABLE VI
Comparative C.U.E. Data

| Year | Fish/100 Roci-Frrs. | Perch/100 Rod-Hrs. | Walleye/100 Rod-Hrs. |
| :---: | :---: | :---: | :---: |
| 1561 | 66.3 | 17.2 | 37.8 |
| 1562 | 75.2 | 28.0 | 39.1 |
| 1963 | 77.7 | 27.1 | 36.7 |

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

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

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