

No. 53

September, 1960



ONTARIO

**FISH AND WILDLIFE MANAGEMENT
REPORT**

PROVINCE OF ONTARIO

DEPARTMENT OF LANDS AND FORESTS

Division of Fish and Wildlife

**(These Reports Are for Intra-Departmental Information
and Not For Publication)**

**Hon. J. W. Spooner
Minister**

**F. A. MacDougall
Deputy Minister**

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No. 53 September, 1960

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(THESE REPORTS ARE FOR INTRA-DEPARTMENTAL
INFORMATION AND NOT FOR PUBLICATION)

REPORT ON THE ILLEGAL HUNTING OF RETURNING
MIGRATORY WATERFOWL IN THE 1000 ISLANDS AREA
OF THE ST. LAWRENCE RIVER

by
R. Lorne Irvine
Conservation Officer
Ivy Lea, R. R. #1, Lansdowne, Ontario.

Abstract

Large scale illegal waterfowl hunting is known to take place in the St. Lawrence River area near Gananoque each year. In April of 1960, Department personnel worked in cooperation with R.C.M.P., New York State Game Protectors, and United States Department of the Interior (Fish and Wildlife Service) game agents to apprehend and convict two violators. Ducks seized included 86 Scaup, six Goldeneyes and one American Merganser. These ducks were found abandoned, along with two shotguns, 14 decoys, one rain cape, ammunition, two bottles of aspirin tablets and a bottle of prescription tablets bearing the name Freda O'Brien. The latter led to initial identification of one violator. Fresh blood in his boat was compared with that of the ducks seized. Serial numbers on the guns seized were used to check ownership at the Canadian Customs office at the One Thousand Islands bridge and found to correspond to the names of the two accused. Civil settlements were made in New York State for \$1,250 each. They forfeited \$200 bail bond for failing to appear in Ontario and paid \$693 on charges of illegal entry laid by the U. S. Customs and Immigration Department. Indications are that the ducks were shot for purchase by two U. S. clubs.

Introduction

Each spring, during the past few years, as the St. Lawrence River first starts to open up, a group of hunters from the Alexandria Bay, N. Y., area have been hunting ducks on a large scale. This operation is performed when a few holes first open up near islands in the middle of the River and it is still frozen, but unsafe, all along the shores. They have been using air propeller driven craft that operate equally well on ice or water. As a result it has been almost impossible, particularly from this side, to apprehend these hunters. In the fall of 1958 a meeting was held in my home in Gananoque of the following: John H. Buckalew, Game Agent of the U. S. Dept. of the Interior of Walcott, N. Y., David S. Dupee, Game Agent of the U. S. Dept. of the Interior of Essex Junction, Vermont, John Corbine, Senior Game Protector of the New York State Conservation Dept., of Watertown, N. Y., Paul Thiebeau, Game Protector of the New York State Conservation

Dept., W. A. G. Thurston, District Forester, D. O. Sylvester, Senior Conservation Officer, and the writer of the Ontario Department of Lands and Forests. Tentative plans were drafted to attempt to apprehend these violators during the spring of 1959. Contact was also made with the Brockville detachment of the R.C.M.P. and they were advised of our plans.

On April 10, 1959, the U. S. Department of the Interior sent up three Game Agents, two radio equipped cars and a float plane. Together with New York State Game Protector Paul Thiebeau we patrolled the St. Lawrence River for approximately ten days without success. It is believed that the operation was not started soon enough and we missed the hunters by two or three days. We planned to meet earlier for next spring.

On March 29, 1960, Conservation Officer C. E. Blackman and I met with Constable David McCormick, of the R.C.M.P., and John H. Buckalew, Game Agent of the U. S. Department of the Interior at the Canadian Customs Office on the 1000 Islands Bridge, Lansdowne, Ontario and discussed plans for this spring. Agent Buckalew advised that a plane would not be available this year as both of their planes were grounded for repairs.

Equipment and Men

- two unmarked cars equipped with two-way mobile radio sets.
- one "handy talkie" two-way portable radio.
- Game Agent John H. Buckalew, Dept. of Interior.
- Game Agent David S. Dupee, Dept. of Interior.
- Game Protector Paul Thiebeau, N. Y. Conservation Dept.
- Conservation Officer R. L. Irvine, Ont. Lands & Forests.

Method and Operation

Our plan was that Buckalew and I would patrol the Canadian side of the River and Dupee would patrol the U. S. side of the River. Thiebeau was to stay at home with his vehicle, so that if the hunters checked they would believe him to be off duty. Dupee was to telephone him as soon as any hunting commenced. Also to avoid detection Dupee would take up temporary residence at Watertown rather than Clayton, as the Agents did last year, and Buckalew would cross over to Canada at Ogdensburg and Prescott so as not to be seen near the Alexandria Bay and Clayton areas that he would have to pass through in order to cross the 1000 Islands Bridges.

Commencing late in March I patrolled along the St. Lawrence River watching for the ice to start breaking up and for the ducks to start returning. On April 1, 1960, the Canadian ice breaker cleared a channel from Prescott to Kingston and the River was open from Prescott to Brockville. On April 2 I telephoned Agent Buckalew and recommended that they come up by Monday April 4, as holes were opening up in the usual shooting area. He advised that they would be up late in the afternoon of the 4th.

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On April 5th, Agent Buckalew and I commenced patrolling the Canadian side of the River at 5:30 a.m. We took up a position on a high point overlooking Brown's Bay at about 6 a.m. The weather over the River at that time was foggy. At approximately 7 a.m. a number of shots were heard from the River, in the vicinity of the Amateur Islands group off Brown's Bay. Radio contact with Agent Dupee on the U. S. side revealed that he heard shooting from the same area. He then telephoned Protector Thiebeau and arranged for Agent Buckalew and me to meet him on the U. S. side of the 1000 Islands Bridge. We then crossed into the U. S. and picked him up and proceeded down the River to meet with Agent Dupee. At approximately 8:00 a.m. the River fog began to lift and we observed two men shooting from Robinson Island, which is on the Canadian side of the River.

These men were kept under observation until approximately 2:00 p.m., at which time they picked up their decoys and headed toward Alexandria Bay, N. Y. They had only gone a short distance when it appeared that they had motor trouble as they commenced to row their boat. They continued rowing it to Dark Island, where they picked up another motor and continued on up the River toward Alexandria Bay. Agent Buckalew, Protector Thiebeau and I proceeded to the vicinity of Alexandria Bay and took up different positions as we did not know where the hunters might land. When their boat had passed from his vision Agent Dupee also proceeded to Alexandria Bay. By this time the boat was now in sight of us near Alexandria Bay.

As the boat approached to within approximately a half mile from Alexandria Bay it turned in toward the New York shore. As it went in behind a point of land we immediately attempted to intercept the landing. However as there are several points along the shore (and not all available by roads) we missed them at the actual point of landing and they dumped their equipment and ducks ashore. When we located this equipment the hunters had continued on to Alexandria Bay. At the point of landing we found 93 ducks (86 Scaup, six Goldeneyes and one American Merganser), two Winchester 12 gauge pump shotguns, 14 decoys, one rain cape, a metal tool box containing a number of live shotgun shells, and a canvas bag containing a number of live shotgun shells, a duck call, two bottles of aspirin tablets and a bottle of prescription tablets with the name of Freda O'Brien, the wife of one of the suspected violators typed on it. All of these items were seized and we returned to Alexandria Bay.

We then went to the home of Gordon Charles O'Brien, one of the suspects, and questioned his activities during the day. He gave alibis that did not stand up under investigation. We went to his Marina and checked his boat and found fresh blood in it and two motors attached to it. Samples of this blood were taken and later sent to the F.B.I., in Washington for analysis along with samples taken from the ducks. Agent Buckalew and I then returned to Canada.

On April 6th, Agent Buckalew and I went to Brockville and advised the R.C.M.P. of the events of the previous day. We then went to the Canadian Customs office on the 1000 Islands Bridge and checked

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gun registrations by U. S. hunters crossing into Canada last fall. One of the guns seized was found to be registered to Gordon Charles O'Brien, of Alexandria Bay, N. Y. We then proceeded to Clayton and met with Agent Dupee and Protector Thiebeau, who had gone to Robinson Island and picked up several freshly fired 12 gauge shotgun shells and two freshly opened shotgun shell cartons. They had also gone to Dark Island and questioned two men as to the identity of the two men who had stopped there on April 5th to pick up an outboard motor. In the evening I telephoned Officer C. D. Thompson of Westport, my immediate superior and advised him of the events that had taken place. I received telephone calls from both the Canadian Press and the Toronto Daily Star of Toronto. Information was given, excluding any names. Reports appeared in all of the local newspapers, radio stations and T.V. stations on both sides of the border as well as the Toronto Daily Star, The Toronto Globe and Mail and radio stations C.F.R.B. and C.B.L. of Toronto.

On April 8th, Officer Thompson and I met in Brockville and discussed the events with Mr. H. Atkinson, the Crown Attorney.

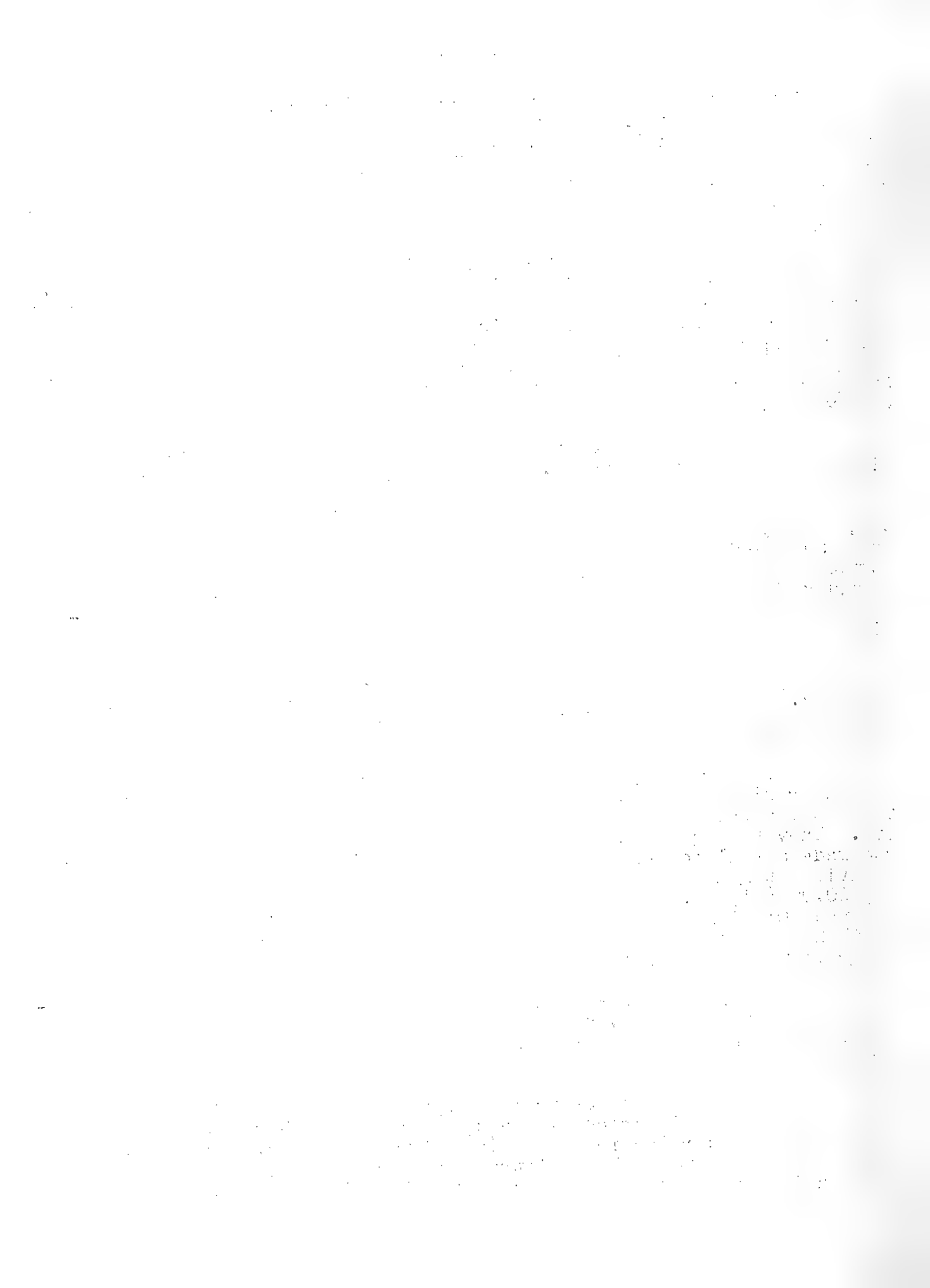
In the meantime I had heard that Cyriel Heath of Alexandria Bay, N. Y., was the other hunter with O'Brien so on April 10th I called Protector Thiebeau and arranged to meet him at the Canadian Customs office on the 1000 Islands Bridge and we checked the gun registrations and found that the other gun seized was registered to Heath. Thiebeau then telephoned Buckalew and gave him this information.

On April 12th, the guns, tool box, empty shells, shell cartons, medicine bottle and blood samples were turned over to Agent Samuel T. Miller for delivery to the F.B.I. laboratory in Washington for examination, where they were delivered on April 13, 1960.

On April 13, Agent Buckalew and Protector Thiebeau contacted the two residents of Dark Island and had them verify the identities of the two men who had stopped and picked up the outboard motor on April 5th. They then questioned Cyriel Dingman Heath of Alexandria Bay, who made a full confession of the hunting trip. They then offered them a Civil Settlement with the New York State Conservation Department of \$2,500.00 (\$1,250.00 each). Heath accepted this offer and agreed to see that O'Brien accepted and that both he and O'Brien were to appear on April 27th at the Watertown office of the New York State Conservation Department and make settlement.

On April 18th Protector Thiebeau telephoned and made arrangements to meet me in Clayton and then attend the settlement on April 27th. I telephoned Officer Thompson and arranged for him to also attend.

On April 25th, Officer Thompson and I again met with Crown Attorney Atkinson in Brockville and he drew up a charge of illegal duck hunting under Section 5 (1) (a) of the Migratory Birds Convention Act. We then went to the Magistrate's Court in Brockville and I laid informations against O'Brien and Heath with Miss M. Louch, J. P., as



advised by the Crown Attorney. Hearing was set for 10 a.m., May 6th, 1960 in Magistrate's Court, Brockville. The Crown Attorney also recommended that we accept a bail bond of \$200.00, plus \$2.50 court costs, each at the time of serving the summonses should they indicate that they wished to settle out of court and not appear.

On April 27th Officer Thompson and I went to the New York State Conservation Department office in Watertown, N. Y. and met with John Corbine, Paul Thiebeau, John Buckalew. We witnessed the signing of confessions by Heath and O'Brien and their payment of the American fines of \$1,250.00 each. Later I served them with our summonses and accepted a bail bond of \$200.00 plus \$2.50 court costs each as they each advised that they wished to settle out of court and would not appear on May 6th in the Magistrate's Court in Brockville.

On May 3rd, Mr. Archie R. Denner, Customs Agent in charge U. S. Treasury Department of Ogdensburg, N. Y. called at my home to secure information re the activities of O'Brien and Heath on April 5th, and he advised that his department intended laying charges of illegal entry or smuggling against the two men.

On May 6, 1960, I went to Magistrate's Court in Brockville and since neither O'Brien nor Heath appeared, I pleaded guilty on their behalf in accordance with bail bond forms 03491 and 03492 signed by Heath and O'Brien respectively on April 27th. After hearing my evidence, Magistrate Gordon H. Jermyn found them guilty and ordered their bail bonds forfeited. Later that day while advising the R.C.M.P. at their office in Brockville of events in the case, the Immigration Officer in charge of this area came in and upon looking up the Canada Immigration Act we found that under Section 5 (d) these two men are automatically barred from entering Canada for a period of five years. He advised that in view of this his Department would not deem it necessary to lay any charges against them.

On May 11th, Protector Paul Thiebeau telephoned me from Clayton, N. Y. and advised that on May 10th Heath and O'Brien had been convicted of illegal entry and that they had been fined a total of \$693.00 and that their aluminum boat and two Mercury outboard motors had been seized by the U. S. Customs and Immigration.

Conclusions

It is evident to the writer that it is necessary to have complete cooperation from all enforcement agencies on both sides of the border. We are indeed fortunate that such a situation exists. It is believed that from the favourable and complete press, radio and T.V. coverage received of the events and fines concerning this case that an end may have been put to the illegal hunting of returning waterfowl in this and other areas. However, plans for next spring have been discussed between the two U. S. Agencies and myself as there is a possibility that it may be attempted again. Information that I have received indicates that these ducks were shot for purchase by two U. S. Clubs in the vicinity of Watertown and Utica, N. Y. and that

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these clubs assisted financially in the payment of the fines.

Total Fines

New York State Conservation Department	\$2500.00
U. S. Customs and Immigration	693.00
Ontario Department Lands and Forests (incl. exchange)	421.70
	<u>\$3614.70</u>

In addition to the above fines these men lost an aluminum boat and two Mercury outboard motors.

Acknowledgments

In addition to the U. S. Game Agencies directly involved I wish to thank the Brockville detachment of the R.C.M.P. and Mr. John Conley and his Customs staff at Lansdowne, Ont., for their excellent cooperation. I also wish to thank all of the press, radio and T.V. stations for their excellent cooperation and coverage of events. The resulting publicity will certainly be a deterrent to anyone contemplating a similar violation.

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MIGRATORY WATERFOWL SURVEY -
HUNTERS' SUCCESS, 1959, LINDSAY DISTRICT

by
P. W. Swanson

Abstract

A waterfowl checking station was in operation on the opening day of the 1959 duck hunting season at Presqu'ile Provincial Park. Some 55 hunters bagged 85 ducks for a hunters' success of 1.55 ducks per hunter. This compared favourably with the 1958 season when 47 hunters secured 72 ducks for a hunters' success of 1.53 ducks per hunter. Tables showing a random overall seasonal success rate for the Kawartha Lakes area are also presented.

A migratory waterfowl checking station was operated at the entrance to Presqu'ile Provincial Park on opening day of the 1959 season. The purpose of this checking station was to check for game law infractions and to obtain data on hunters' success, species composition, age and sex ratios of the bag. This was a continuation of studies initiated during the 1958 season.

A total of 55 hunters were checked having a bag of 85 ducks, giving a hunter success of 1.55 ducks per hunter. This compares favourably with the 1958 season when 47 hunters bagged 72 ducks for a hunter success of 1.53 ducks per hunter.

To supplement this information several conservation officers recorded the kill of hunters encountered in the inland waters of their patrol areas. These data were also compiled on waterfowl checking station cards.

The following Tables I, II and V show the opening day results of the 1958 and 1959 season for Presqu'ile Park and of the 1959 season in part of Haliburton County. Tables III and IV show a random overall seasonal success rate for the Kawartha Lakes area.

Lake Ontario (Presqu'ile Park)

* Table I	Hunters' Success - 1.53 ducks	1958
* Table II	Hunters' Success - 1.55 ducks	1959

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Inland Waters (Random Sample)

* Table III	Hunters' Success - 1.54 ducks	1959
Table IV	Hunters' Success - 0.76 ducks	1959
Table V	Hunters' Success - 0.74 ducks	1959

* Based on these reports with the exception of Table III the duck season inland was not as productive as at Presqu'ile Park.

TABLE I - Opening Day - 1958 Season - Presqu'ile Park

Species	Males		Females		Total	% of Kill
	Adult	Juv.	Adult	Juv.		
Green-winged Teal	6	8	4	9	27	37.5
Black	10	4	4	2	20	27.8
Blue-winged Teal	3	2	4	2	11	15.3
Mallard	1	1	1	-	3	4.2
Wood	-	3	-	-	3	4.2
Widgeon	-	-	-	3	3	4.2
Lesser Scaup	-	-	-	2	2	2.8
Redhead	-	-	-	2	2	2.8
Greater Scaup	-	-	1	-	1	1.4
Total	20	18	14	20	72	100.2

Number Ducks bagged	72
Number hunters checked	47
Number ducks per hunter	1.53
Number man hours hunted	226
Number man hours hunted per duck	3.1
Number cripples lost	13
Number cripples recovered	nil
Number dogs used	1

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1922
The following is a list of the names of the persons who were present at the meeting held on the 15th day of June, 1922, at the residence of Mr. J. H. Smith, in the town of Smithville, in the county of Smith, State of North Carolina.

Name	Address
Mr. J. H. Smith	Smithville, N. C.
Mr. W. B. Jones	Smithville, N. C.
Mr. C. D. Brown	Smithville, N. C.
Mr. E. F. Green	Smithville, N. C.
Mr. G. H. White	Smithville, N. C.
Mr. I. J. Black	Smithville, N. C.
Mr. K. L. Gray	Smithville, N. C.
Mr. M. N. Blue	Smithville, N. C.
Mr. O. P. Red	Smithville, N. C.
Mr. Q. R. Purple	Smithville, N. C.
Mr. S. T. Yellow	Smithville, N. C.
Mr. U. V. Orange	Smithville, N. C.
Mr. W. X. Green	Smithville, N. C.
Mr. Y. Z. Blue	Smithville, N. C.

Witness my hand and seal this 15th day of June, 1922.

J. H. Smith, Secretary

TABLE II - Opening Day - 1959 Season - Presqu'ile Park

Species	Males		Females		Total	% of Kill
	Adult	Juv.	Adult	Juv.		
Blue-winged Teal	11	6	7	8	32	37.6
Black	13	7	6	2	28	32.9
Mallard	4	6	1	3	14	16.5
Green-winged Teal	3	1	3	1	8	9.4
Wood	3	-	-	-	3	3.5
Total	34	20	17	14	85	99.9

Number ducks bagged	85
Number hunters checked	55
Number ducks per hunter	1.55
Number man hours hunted	292
Number man hours hunted per duck	3.4
Number cripples lost	22
Number cripples recovered	2
Number dogs used	3

TABLE III - Random Sample of Hunters' Success September 19 to October 17, 1959, Townships of Harvey, Verulam, Galway and Emily.

Species	Males		Females		Total	% of Kill
	Adult	Juv.	Adult	Juv.		
Black	7	20	1	4	32	30.5
Wood	4	14	1	3	22	21.0
Blue-winged Teal	11	11	-	-	22	21.0
Mallard	8	11	-	-	19	18.1
Lesser Scaup	4	-	-	-	4	3.8
Pintail	-	3	-	-	3	2.9
Ring Neck	2	-	-	-	2	1.9
W. W. Scoter	1	-	-	-	1	1.0
Total	37	59	2	7	105	100.2

No. ducks bagged	105
Number hunters checked	68
Number ducks per hunter	1.54
Number man hours hunted	2.61
Number man hours per duck	2.5
Number cripples recovered	1
Number cripples lost	25
Number dogs used	10

THE STATE OF TEXAS, COUNTY OF DALLAS.

Know all men by these presents, that I, the undersigned, for and in behalf of the State of Texas, do hereby certify that the following is a true and correct copy of the original as the same appears on the records of the State of Texas:

IN WITNESS WHEREOF, I have hereunto set my hand and the seal of the State of Texas, at the City of Austin, this 1st day of January, 1901.

1901

STATE OF TEXAS

1901

THE STATE OF TEXAS, COUNTY OF DALLAS.

Know all men by these presents, that I, the undersigned, for and in behalf of the State of Texas, do hereby certify that the following is a true and correct copy of the original as the same appears on the records of the State of Texas:

1901

THE STATE OF TEXAS, COUNTY OF DALLAS.

Know all men by these presents, that I, the undersigned, for and in behalf of the State of Texas, do hereby certify that the following is a true and correct copy of the original as the same appears on the records of the State of Texas:

1901

Know all men by these presents, that I, the undersigned, for and in behalf of the State of Texas, do hereby certify that the following is a true and correct copy of the original as the same appears on the records of the State of Texas:

Know all men by these presents, that I, the undersigned, for and in behalf of the State of Texas, do hereby certify that the following is a true and correct copy of the original as the same appears on the records of the State of Texas:

THE STATE OF TEXAS, COUNTY OF DALLAS.

Know all men by these presents, that I, the undersigned, for and in behalf of the State of Texas, do hereby certify that the following is a true and correct copy of the original as the same appears on the records of the State of Texas:

TABLE IV - Random Sample of Hunters' Success September 19 to October 3, 1959, Townships of Mariposa, Emily and Fenelon.

Species	Males		Females		Total	% of Kill
	Adult	Juv.	Adult	Juv.		
Mallard	9	1	3	-	13	44.8
Black	7	1	1	2	11	37.9
Green-winged Teal	1	1	1	-	3	10.3
Wood	-	1	-	-	1	3.4
Blue-winged Teal	1	-	-	-	1	3.4
Total	18	4	5	2	29	99.8

Number ducks bagged	29
Number hunters checked	38
Number ducks per hunter	0.76
Number man hours hunted	178
Number man hours per duck	6.1
Number cripples recovered	nil
Number cripples lost	49
Number dogs used	4

TABLE V - Random Sample of Hunters' Success Opening Day of Season 1959, Townships of Dysart, Guilford and Dudley.

Species	Males		Females		Total	% of Kill
	Adult	Juv.	Adult	Juv.		
Black	5	9	1	4	19	61.3
Green-winged Teal	-	3	1	4	8	25.8
Mallard	1	-	-	1	2	6.4
Wood	-	2	-	-	2	6.4
Total	6	14	2	9	31	99.9

Number ducks bagged	31
Number hunters checked	42
Number ducks per hunter	0.74
Number man hours hunted	109.5
Number man hours hunted per duck	3.5
Number cripples lost	8
Number cripples recovered	nil
Number dogs used	2 (Labs)

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

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

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

4. The second part of the document outlines the procedures for handling disputes and resolving conflicts.

5. It is important to establish clear communication channels and to resolve issues promptly and fairly.

6. The third part of the document provides information on the various services and products offered by the organization.

7. These services are designed to meet the needs of our customers and to provide them with the highest quality of service.

8. We are committed to continuous improvement and to providing excellent customer service at all times.

9. The fourth part of the document contains information on the company's financial performance and its future prospects.

10. We are confident that our strong financial position and our commitment to innovation will ensure our long-term success.

11. Finally, we would like to express our appreciation to our employees, customers, and partners for their support and loyalty.

12. We look forward to continuing to work together to achieve our common goals and to creating a bright future for all of us.

Acknowledgment

The valuable assistance and co-operation of the following personnel is gratefully acknowledged. P. J. Kennedy, Park Superintendent, Presqu'ile, Conservation Officers R. C. McCulloch, J. Bradshaw, R. D. Dyke, J. H. Scott and R. M. Simpson.

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COTTONTAIL SPRING CENSUS,
LAKE HURON DISTRICT, 1960

by
R. E. Mason

Abstract

A roadside census was conducted in Lake Huron District to obtain indices of relative abundance of the spring cottontail population. Methods and timing of the census are discussed. Because of the extremely heavy snowfall in March the length of the census had to be curtailed somewhat but in a total of 42 transects representing 210 miles, 17 cottontails were observed. The density index of the breeding population of cottontails was 0.40 ± 0.16 (cottontails per five mile transect). Certain advantages to be derived from changing the spring early morning census to that of a night spot-light census are pointed out. It is concluded that if early morning spring counts are to be retained, at least 165 transects would be required to adequately census the cottontail population.

Contributing Personnel

R. R. Bellinger, H. J. Gingrich, C. F. Liddle, F. H. Merner, C. A. Wolfe, H. W. Clark, C. V. Horton, G. C. Matthews, R. M. Reid.

Introduction

Indices of relative abundance of spring cottontail populations is considered desirable to further understand the population dynamics of the species. In combination with the July census of reproductive success, relationships to hunting success, meteorological effects, and relative reproduction may be documented on a long term basis. Collection of reliable population information is also a prerequisite in obtaining support for positive management programs.

Methods

Roadside counts were chosen for the census as information could be gathered over the major cottontail range with less expenditure at man power than could be used in any of the several marking techniques applicable to more limited areas. Also roadside counts produce a reliable index to population density, as revealed in relative hunting success, and measurements of absolute cottontail densities are not required for our purposes (Wight 1959).

1. The first part of the document is a list of names.

2. The second part is a list of dates.

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4. The following table shows the results of the survey.

5. The data indicates a significant increase in the number of respondents.

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16. The following table shows the results of the survey.

17. The data indicates a significant increase in the number of respondents.

Early morning counts were chosen over evening counts mainly because of results obtained by Newman (1959), and because of the success of district early morning counts in July 1959.* Newman reported 70% of all rabbits seen during comparable early morning and evening counts were seen in the former, based on 520 observations made from January through March. Daily and seasonal timing of the counts were chosen to agree as closely as possible with the factors listed by Newman. These factors are:

- (1) Starting time one hour before sunrise.
- (2) Census scheduled for late February or early March.
- (3) Snow cover present, although this factor has less positive effect on morning than on evening counts.
- (4) Light frost present.
- (5) Winds under 10 m.p.h.
- (6) Heavy and or light fog during the counts, or rain preceding the counts increased number of rabbits seen. This factor was quite variable during the district census, as conditions varied from clear through overcast, fog, and rain, to snow.

Cloud cover and barometric pressure was not found by Newman to significantly affect roadside counts, although a negative association is expected in the latter case.

In addition to the above factors, observations were recorded in five mile transects to assist in statistical analysis. Routes were pre chosen by officers to cover a minimum of three transects per morning through cottontail habitat. Cottontail habitat was not defined, this being left to the officer and his knowledge of his patrol area. Individual transects were not necessarily continuous. Speeds driven were variable depending on road conditions but probably averaged 15-20 m.p.h. Routes were selected to cover as much of the patrol area as possible.

Results

A total of 42 transects were driven representing 210 miles. Seventeen cottontails were observed or 0.40 cottontails per transect. Other observations recorded by officers were as follows:

1 swan, 60 geese, 103 ducks (blacks, mallards, buffleheads, mergansers, wood ducks), 2 deer, 13 European hare, 5 Raccoons, 26 mourning doves, 2 pheasants, 1 muskrat, 1 snowshoe hare.

* See Mason, R. E. Census for cottontail rabbits, Lake Huron District, 1958-59, Fish and Wildlife Management Report No. 49, November 1, 1959.

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TABLE I - Cottontail Observations Per Transect

<u>Incidence of Observation</u>	<u>Number of Transects</u>
0	31
1	7
2	2
3	2

Because of extremely heavy snowfall during the first half of March, original timing of the census had to be postponed as road-side snowbanks restricted observation. Once commenced, the census was cancelled after two mornings of observation, although some officers completed three mornings. The cancellation resulted from extreme flooding, poor road conditions, and lack of positive observations.

TABLE II - Cottontail Observations According to Weather Factors.

<u>Weather Factor</u>	<u>Number Transects</u>	<u>Number Observations</u>	<u>Observations Per Transect</u>
Clear	21	7	0.33
Fog through rain	12	5	0.42
Snowing	9	5	0.56

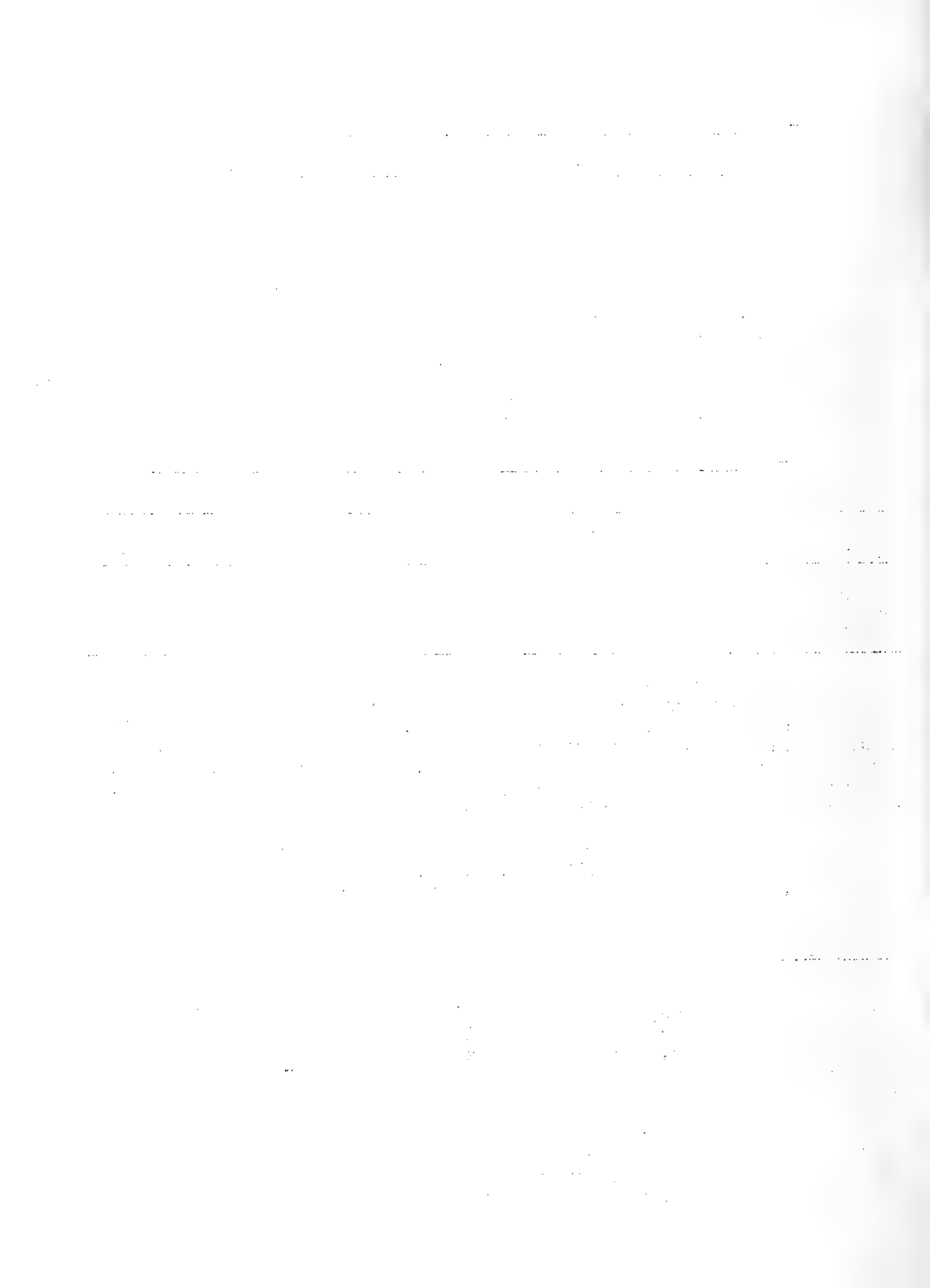
In this table, clear, refers to a lack of precipitation, although the sky may or may not have been overcast. Despite the small sample, it is interesting to note the general agreement with Newman's findings. At least partial snow cover was present on 27 transects, reporting 12 observations (0.44 per transect). Ground was recorded as bare on 15 transects, reporting five observations (0.33 per transects). Here again the data agree with Newman.

Temperatures recorded during the survey ranged from 25 to 38°F with a mean of 29.7°F. Wind velocity estimates ranged from 0 to 20 m.p.h. with only three transects reporting winds over 10 m.p.h.

Discussion

Despite the few positive observations and contrary to earlier expectations, the survey, which was terminated before having been completed as scheduled, was fairly successful when considered on a district basis. With the variation encountered in the census the true value of the mean (per transect) is 0.40 ± 0.16 at the 80% confidence level.

Using the same confidence level, the variation encountered in this census would indicate that 165 plots or 825 miles are required to adequately census the cottontail population. Assuming eight men are used on the survey, and three transects or 15 miles are covered



per morning, a total of seven mornings per man would be required. Had the original operational plan not been modified because of adverse weather and road conditions and premature conclusions on the success of the survey, this condition would have been met. However changing the technique may improve on those conditions which resulted in the cancellation of the census before its completion.

Lord (1959) reports more observations from night counts of cottontails than from early morning counts except during May through to August inclusive. Morning counts too are limited because of decreased cottontail activity with increasing light conditions. This limits the area which can be covered in any one morning, but would not apply to night censusing.

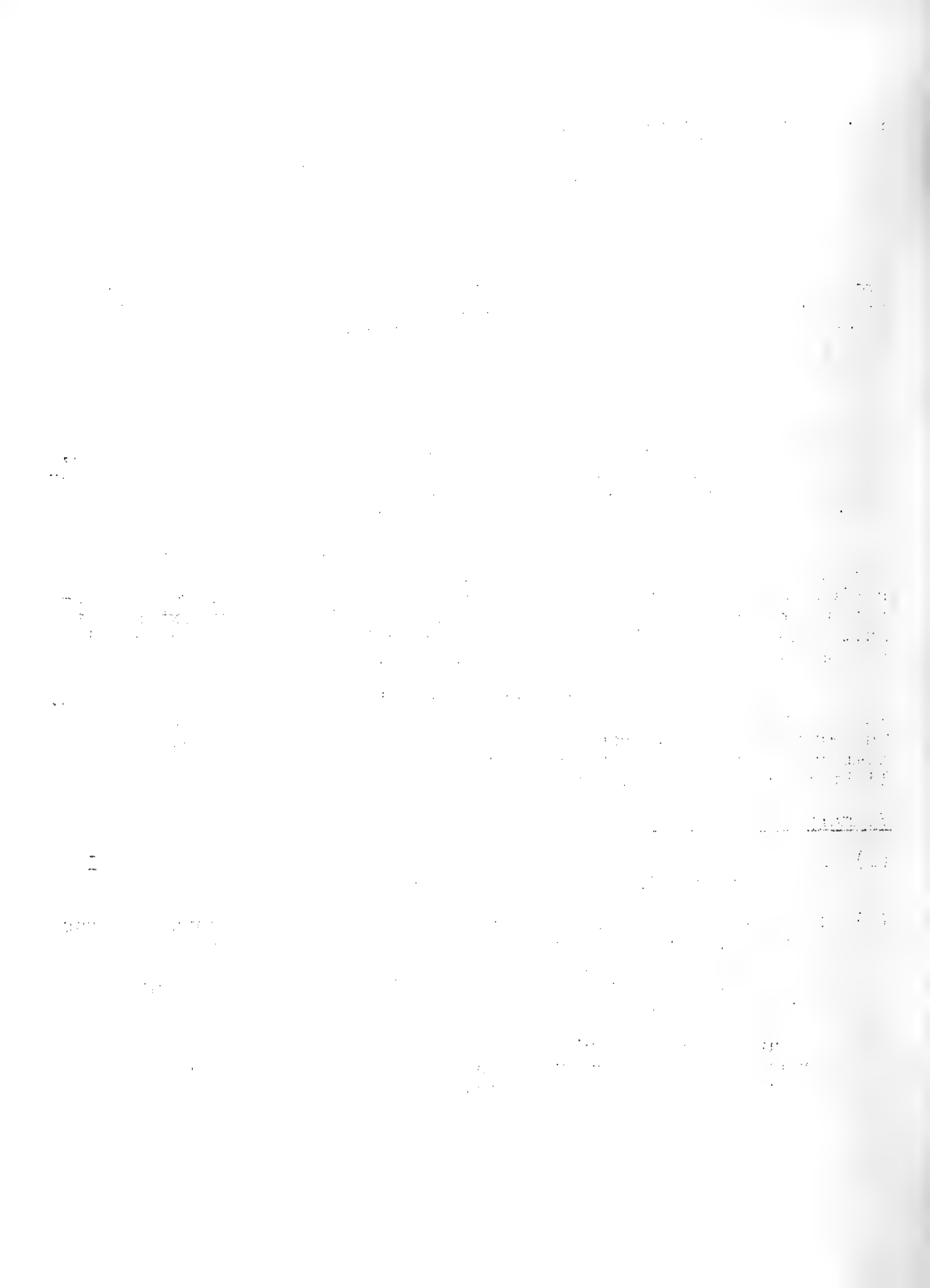
The apparent discrepancy between Lord's results and those of Newman may be explained because of differential timing. Lord's observation period did not start until at least one hour after dark, and headlights were used in conjunction with a spotlight for observations. Newman's counts commenced one-half hour before sunset, at which time few cottontails could be considered active.

Night counts would have the added advantage in that the timing seasonally would not have to be so precise, and the census period could be delayed until possible flooding and poor road conditions were not a hazard, provided that the delay did not extend into May. The meteorological conditions according to Newman should still be considered in timing the census period.

The use of a spotlight may require employing two men crews. This is a disadvantage when considering the time required to census the area, but could probably be compensated for by increasing the number of transects to be covered in a single night, since increasing light conditions would not be limiting.

Summary and Conclusions

- (1) Density index of breeding population of cottontails is 0.40 ± 0.16 (cottontails per five mile transect).
- (2) It is suggested that the spring early morning cottontail census in this district be changed to a night spot-light census. In scheduling the census consideration should be given to the meteorological and other considerations used in the early morning counts.
- (3) If early morning spring counts are to be retained, at least 165 transects will be required to adequately census the population, based on variation encountered in this survey.



References

Geis, Aelred D., 1955. Effect of Trap Response On Cottontail Census. Jour. Wildl. Mgt. 19 (4).

Lord, Rexford D., Jr., 1959. A Method For Measuring Mortality of Cottontail Rabbits In Winter. Jour. Wildl. Mgt. 23 (2).

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Newman, Duane E., 1959. Factors Influencing the Winter Roadside Count of Cottontails. Jour. Wildl. Mgt. 23 (3).

Peterle, Tony J., and Lee Eberhardt, 1959. Is the Lincoln Index Reliable for Cottontail Censusing. Mich. Dept. Cons., Fed. Pro. W-40-R, W-96-R.

Wight, Howard, 1959. Eleven Years of Rabbit - Population Data In Missouri. Jour. Wildl. Mgt., 23 (1).

Appendix

Number of Observations

Frequency

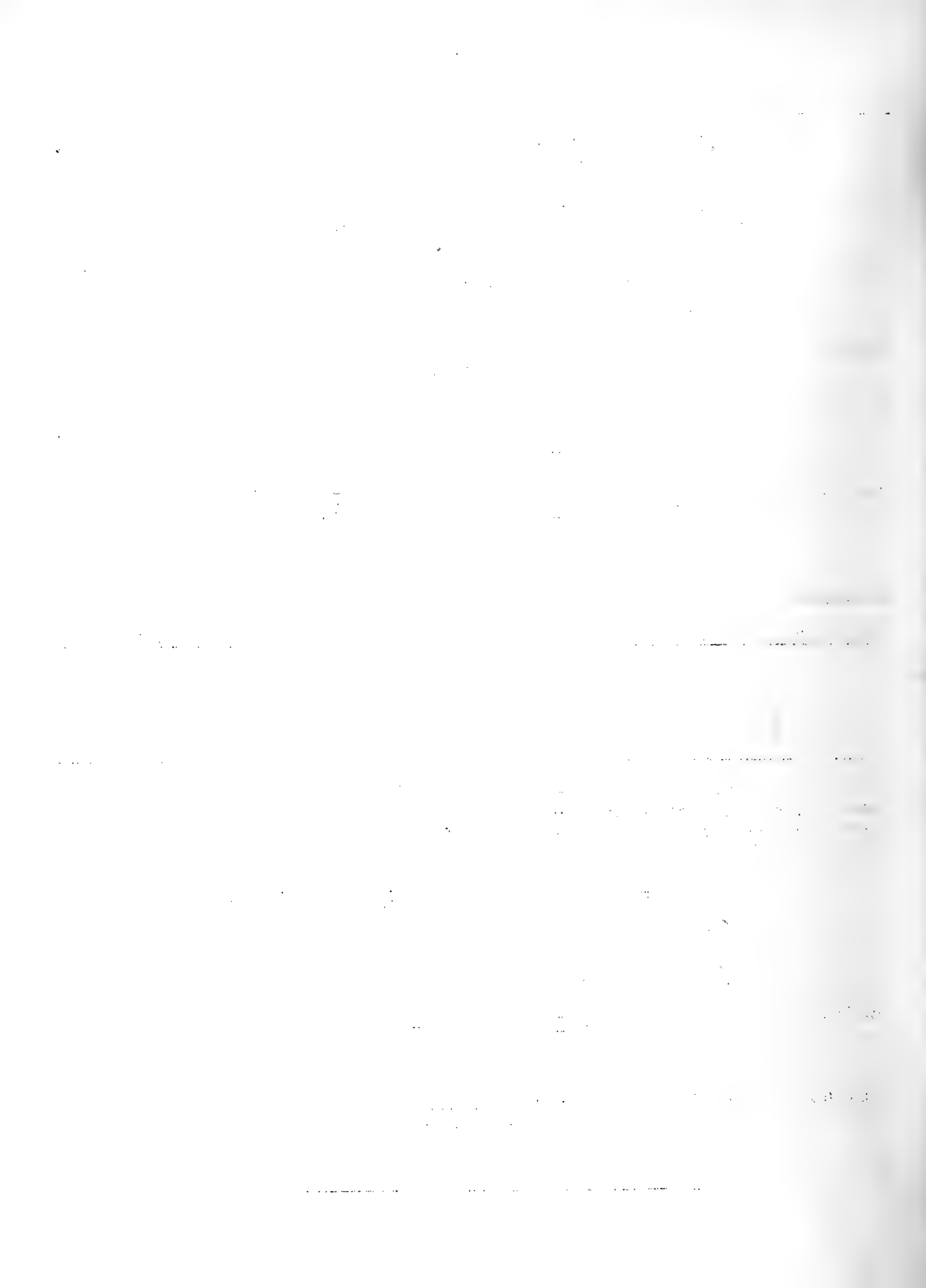
0	31
1	7
2	2
3	2

Total number transects - 42 (210 miles)
 Total number observations - 17
 Mean per transect - 0.404 ± 0.16
 Mean per mile - 0.081

$$\begin{aligned} \sum x &= 17 & (\sum x)^2/n &= 6.88 \\ \sum x^2 &= 33 & s &= 0.798 \\ \sum x/n &= 0.40 \end{aligned}$$

confidence limits $\bar{x} \pm t.2 \times \frac{s}{\sqrt{n}}$

estimate sample size $N = \frac{(t.2)^2 \times s^2}{(0.2 \times \bar{x})^2}$



AERIAL BEAVER (Castor canadensis)
SURVEY IN GERALDTON DISTRICT IN 1959

by
J. Goddard

Abstract

The purpose of this survey was to make an aerial count of beaver houses in Geraldton District. As a result of two transects flown on October 28-29, the number of active beaver colonies in 1959 appeared to have leveled off and were approximately the same as in 1958. A series of forms showing the various timber types are presented. A four year comparison of living beaver colonies showed a steady increase from 1956 to 1958. Recommendations are offered for future surveys.

Purpose

To provide figures and results on the 1959 Aerial Beaver House Count and to compare results obtained in 1959 with those obtained in previous years.

Date surveyed

October 28-29, 1959.

Flight Crew

C. J. Kirk - Pilot
W. L. MacKinnon - Timber recorder
John Gow - Left observer
John Macfie)
John Goddard) - Right observers

Two transects were flown on the aerial beaver survey in 1959. One was flown over the northern course, the course that was established in 1958 and results were compared for the two years. As in previous years, John Gow was observer on the left side, with John Goddard on the right. The other transect was flown over the established southern route which consists of six laps and the results obtained here were compared with previous years. On the southern route John Gow was observing the right side and John Macfie on the left. In previous years Gow had been observing the left side. However, due to certain weather conditions, etc., the south transect was flown in the reverse direction as flown to previous years. Actually, therefore, Gow was observing the same side as he had done in previous years. In order to avoid confusion Gow is classified as left observer as in previous years.

Timber types were recorded as in previous years and are shown on the forms that appear at the back of this report. Results of the 1959 survey are shown on the forms provided and compared with those obtained for previous years in Table I.

Conclusions

(a) Southern Route

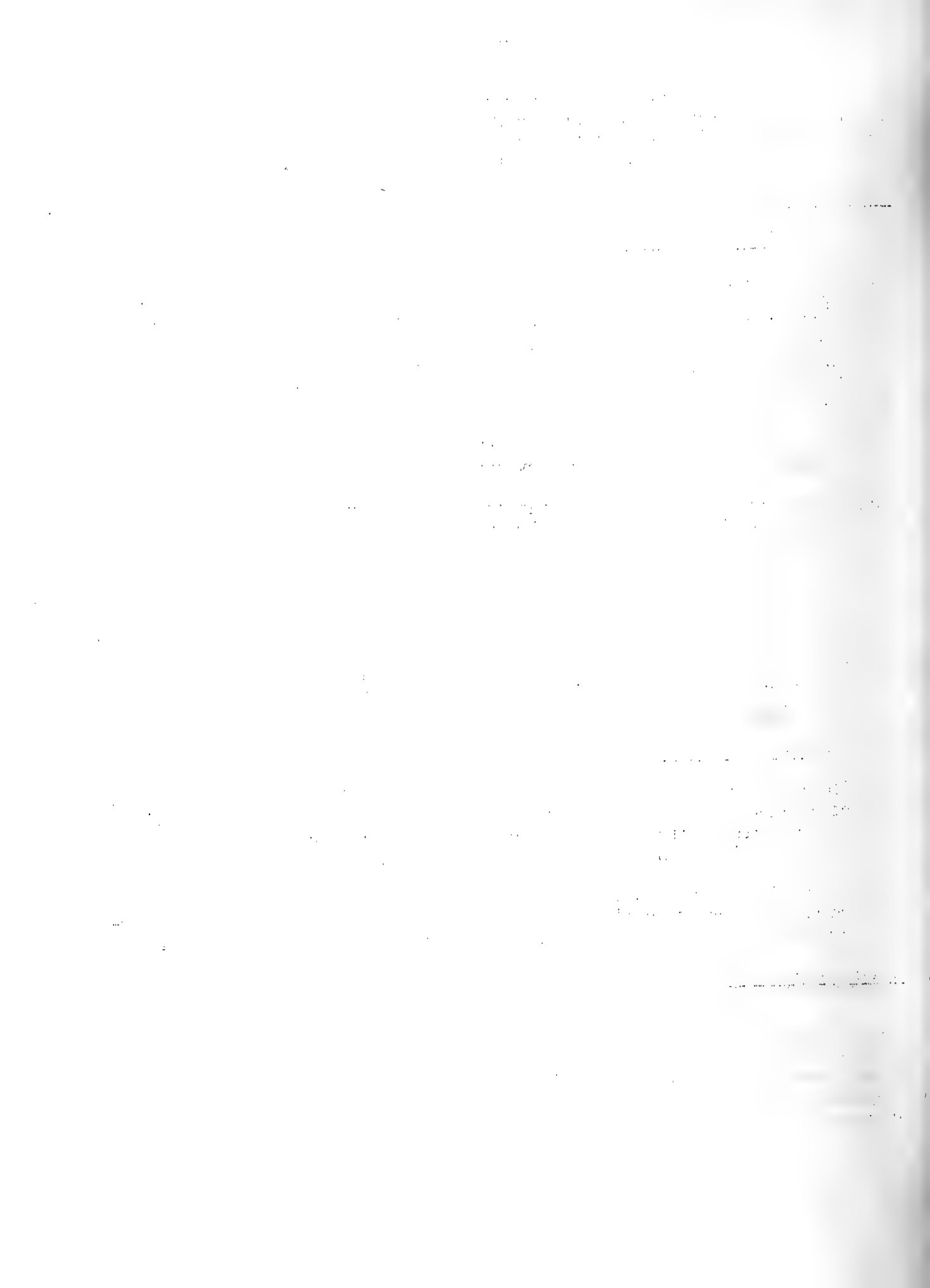
1. From results obtained on the right side of the aircraft, there appears to have been a steady increase in the number of living beaver colonies from 1956-1958. In 1959 the number of living colonies appears to have levelled off, 1959 results being approximately the same as those for 1958. A very similar result is obtained from the left side of the transect line, a very slight increase being apparent in 1959.
2. The interpretation of the word "water" seems to be fairly consistent among all observers.
3. There continues to be about twice as many living colonies recorded on the left side of the aircraft as for the right. This is believed to be due to:
 - A. the interpretation of different terms shown on the form.
 - B. Optimism or pessimism on the part of one or all observers.
 - C. The necessity of making a snap decision for the different terms used under what might be considered an active beaver colony.

(b) Northern Route

1. There does not appear to be any increase in the number of living colonies of 1958 and those seen in 1959 from results obtained on the right side of the aircraft. There appears to be a definite increase on the left, however.
2. There is a tremendous difference in the interpretation of the word "water" over the two years on the right side of the aircraft. The left side provides fairly consistent results.

Recommendations

Due to the extreme variation among observers as to the interpretation of different kinds of living colonies, it is suggested that if the census is planned for next year that a single crew conduct the Provincial Census, if this is at all possible, or possibly fewer crews on a regional basis is an attempt to provide more consistent results and narrow the range of interpretation of terms.



Due to an unusual early freeze-up this year, the survey (unavoidably) was conducted when some of the waterways of the transect were already covered with ice. It is quite feasible, therefore, that many food piles or other signs of beaver presence, were missed in the survey. If this is the case, then possibly the beaver population has continued to increase, but it is feasible that the population has actually levelled off, which is apparent from the figures in Table I, at least on the right side of the aircraft, both on the northern and southern routes.

Note: A map showing locations of the northern and southern transects in Geraldton District accompanied this report.

TABLE I - Aerial Beaver House Count In Geraldton District -
Table To Show Comparisons of Total Living Beaver
Colonies In 1956, 1957, 1958 and 1959.

A. Southern Route

Year	Side of Count	Flight	Lap Number						Total	Average	
			1	2	3	4	5	6			
1956	Right	1st	2	6	6	3	0	2	19	}	16
		2nd	0	3	7	0	2	1	13		
1957	Right	1st	6	6	9	4	4	2	31	}	31
1958	Right	1st	13	8	13	10	10	3	57		
1959	Right	2nd	13	12	10	3	6	6	50	}	53.5
		1st	9	13	14	5	5	2	48		
1957	Right (Water)	1st	35	17	46	46	45	16	205	}	228
1958	Right (Water)	1st	40	23	49	48	48	23	231		
1959	Right (Water)	2nd	42	37	59	45	43	26	252	}	
		1st	32	25	46	41	36	26	206		
1956	Left	1st	7	4	13	8	1	2	35	}	34
		2nd	4	6	4	9	6	4	33		
1957	Left	1st	2	6	13	2	1	2	26	}	26
1958	Left	1st	11	18	26	17	24	10	106		
1959	Left	2nd	14	17	25	17	20	5	98	}	102
		1st	26	21	36	20	5	8	116		
1957	Left (Water)	1st	32	23	49	36	32	9	181	}	193
1958	Left (Water)	1st	27	26	47	40	50	25	215		
1959	Left (Water)	2nd	34	25	52	36	43	15	205	}	
		1st	44	32	50	35	41	22	224		

B. Northern Route

1958	Right	1st	8	2	5	14	14	-	43	43
1959	Right	1st	7	8	7	6	16	-	44	44
1958	Left	1st	8	5	5	11	21	-	50	50
1959	Left	1st	13	7	7	16	28	-	71	71
1958	Right (Water)	1st	27	16	17	37	65	-	162	162
1959	Right (Water)	1st	19	8	13	14	36	-	90	90
1958	Left (Water)		24	16	15	25	56	-	136	136
1959	Left (Water)		26	17	15	28	57	-	143	143

Note: Transect line #6 was surveyed on October 28, 1959 with John Goddard, as observer. Transect line #'s 1-5 were surveyed on October 29, 1959, with John Macfie as observer.

AERIAL CENSUS OF ACTIVE BEAVER COLONIES

DISTRICT Geraldton-South DATE October 28-29, 1959

TIME 10:50 A.M. - 1:10 P.M.

SIDE OF PLANE Right OBSERVER John Macfie and John Goddard

WEATHER (Wind, Haze, etc.) Transect #6 surveyed in sunny and clear weather. Transects 1-5 surveyed in overcast weather.

<u>Transect (Forest Type)</u>	<u>Active Lodge With Food Pile</u>	<u>Active Lodge Alone</u>	<u>Food Pile Alone</u>	<u>Active Pond</u>	<u>Water</u>
1. Mixedwood S _b predominant with some cutover	5	1	1	2	32
2. Mixedwood with large areas of cutover	4	3	1	5	25
3. Mixedwood S _b , P _j , P _o	3	1	1	9	46
4. Mixedwood S _b and P _j some cutover	2	-	1	2	41
5. Predominantly Mixedwood some solid areas of S _b	1	1	-	3	36
6. Mostly S _b and P _j , some mixed and cutover	1	-	-	1	26

Note: Transect line #6 was surveyed on October 28, 1959.
 The remaining five transects were surveyed on October 29, 1959.

AERIAL CENSUS OF ACTIVE BEAVER COLONIES

DISTRICT Geraldton-South

DATE October 28-29, 1959

TIME 10:50 A.M. - 1:10 P.M.

SIDE OF PLANE Left

OBSERVER John Gow

WEATHER (Wind, Haze, etc.) Transect #6 surveyed in sunny and clear weather. Transects 1-5 surveyed in overcast weather.

<u>Transect (Forest Types)</u>	<u>Active Lodge with Food Pile</u>	<u>Active Lodge Alone</u>	<u>Food Pile Alone</u>	<u>Active Pond</u>	<u>Water</u>
1. Mixedwood S _b predominant with some cutover	10	-	2	14	44
2. Mixedwood with large areas of cutover	8	1	-	12	32
3. Mixedwood S _b , P _j , P _o	19	3	-	14	50
4. Mixedwood S _b and P _j some cutover	10	-	-	10	35
5. Predominantly mixedwood some solid areas of S _b	-	-	-	5	41
6. Mostly S _b and P _j . Some mixed & cut- over	3	-	-	5	22

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

2. It is essential to ensure that all data is entered correctly and consistently.

3. Regular audits should be conducted to verify the accuracy of the information.

4. The second part of the document outlines the procedures for handling discrepancies.

5. Any errors identified should be reported immediately to the appropriate authority.

6. It is also important to maintain confidentiality of all sensitive information.

7. The final section provides a summary of the key points discussed.

8. This document is intended to serve as a guide for all staff members.

9. Please refer to the attached schedule for further details.

10. Your cooperation in following these guidelines is appreciated.

11. The document is effective from the date of its issuance.

12. For any queries, please contact the relevant department.

13. The document is subject to periodic review and updates.

14. It is the responsibility of all staff to adhere to these policies.

15. The document is available in both English and Spanish.

16. The document is signed by the Director of the Office.

17. The document is dated 15th October 2023.

18. The document is valid for a period of 12 months.

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AERIAL CENSUS OF ACTIVE BEAVER COLONIES

DISTRICT Geraldton-North

DATE October 28, 1959

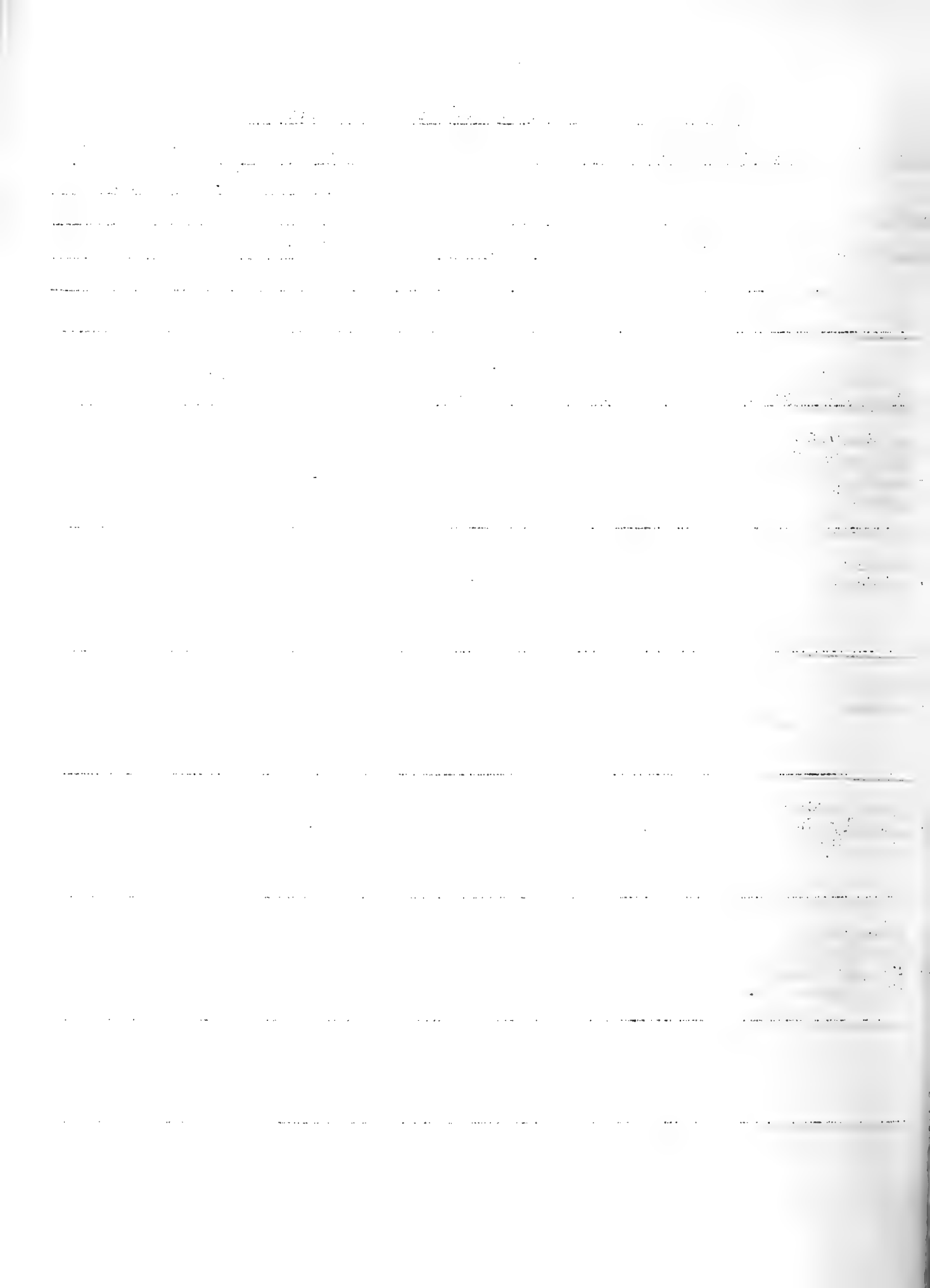
TIME 11:45 A.M. - 2:24 P.M.

SIDE OF PLANE Right

OBSERVER John Goddard

WEATHER (Wind, Haze, etc.) Ceiling and visibility unlimited.
Light wind.

<u>Transect (Forest Type)</u>	<u>Active Lodge With Food Pile</u>	<u>Active Lodge Alone</u>	<u>Food Pile Alone</u>	<u>Active Pond</u>	<u>Water</u>
1. Mixedwood 75% coniferous Mainly S _b Some P _j	3	2	-	2	19
2. Treed muskeg	6	-	-	2	8
3. Treed muskeg	1	3	-	3	13
4. Coniferous mainly S _b some P _j	4	1	-	1	14
5. Mixedwood mainly S _b & P _j with some P _o & cutover.	3	1	2	10	36



AERIAL CENSUS OF ACTIVE BEAVER COLONIES

DISTRICT Geraldton-North

DATE October 28, 1959

TIME 11:45 A.M. - 2:24 P.M.

SIDE OF PLANE Left

OBSERVER John Gow

WEATHER (Wind, Haze, etc.) Ceiling and visibility unlimited.

Light wind.

Transect (Forest Type)	Active Lodge With Food Pile	Active Lodge Alone	Food Pile Alone	Active Pond	Water
1. Mixedwood 75% coniferous mainly Sb some Pj	6	1	-	6	26
2. Treed muskeg	3	-	2	2	17
3. Treed muskeg	3	1	-	3	15
4. Coniferous mainly Sb some Pj	8	3	-	5	28
5. Mixedwood mainly Sb and Pj with some Po & cutover	11	-	1	16	57

LIVE BEAVER TRAPPING PROJECT
PARRY SOUND DISTRICT, JULY 17 TO SEPTEMBER 11, 1959

by
M. G. Loucks

Abstract

Some 83 nuisance beavers were trapped from the C.N.R. right of way and other nuisance areas along Highway 69. Of these 58 were sexed and aged as follows: 20 adult males; 19 adult females and 19 kits. After being ear tagged and tattooed these animals were airlifted and released in lakes located 24 to 48 miles south of Big Trout Lake in Patricia District. Trapping and tagging methods and costs of the operation are discussed.

This project was commenced on July 17th along the C.N.R. right of way, starting at Key Junction. This was one of the more hazardous locations where the beaver were damming culverts and flooding the track. All traps were lifted on September 11/59 at which time a total of 83 beaver had been taken from the nuisance areas along this right of way from Key Junction to Parry Sound with a limited number coming from nuisance areas along Hwy. 69. Of the 83 beaver trapped 58 were aged. After several attempts at sexing kits, with no success, we abandoned them on the advice of Rod Standfield, Biologist, Laple and only sexed adult animals.

The following shows the number of animals tagged, sexed and aged during this operation.

<u>Male Adult</u>	<u>Female Adult</u>	<u>Kits</u>
20	19	19

The remaining 25 beaver trapped either escaped or died before they could be tagged and sexed. Of these 25, eight were late kits.

The animals were released in lakes located 24 to 48 miles south of Big Trout Lake in the Patricia's. These lakes were designated by numbers 59-15, 59-16, 59-17, 59-18, 59-19, 59-20, 59-21.

The following shows the number of beaver tagged, released and location of release:

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<u>Releasing Date</u>	<u>Lake</u>	<u>No. of Animals</u>	<u>Adults</u>	<u>Sex</u>	<u>Kit</u>
Aug. 9th, 1959	59-19	17	8 7	Male Female	2
Aug. 22, 1959	59-16	15	5 6	Male Female	4
Sept. 13, 1959	59-20	17	* 7 6	Male Female	6

* One adult male and one adult unknown escaped at Parry Sound after being tagged.

The animals were transported from trap to truck, boat, or track motor car, by coarse, meshed, large jute bags. Thence they were transferred into mink holding pens approximately 20" x 20" x 40", screened on four sides with boxed ends. These pens were also used when transporting the beaver in the aircraft to the point of release. Jute bags were also used when necessary to conserve aircraft space.

Tags were placed in both ears of these animals with the exception of four animals whose ears were torn when attempting to affix the second tag. All animals were tattooed with a letter and number on the loose skin high on the muscle on the hind leg. This was accomplished by putting the beaver in a bag head first, and holding one hind leg and the tail. The fur was then clipped close with a pair of sharp, round-end scissors. The need cannot be overemphasized of using round end scissors since we suffered an accident by using the sharp pointed ones, there will be less danger to man and beast. The clipped portion of skin was then pulled taut and the tattoo affixed. This operation can best be done by three men, one holding the forepart of the animal, one the hind leg and tail, the third doing the clipping and tattooing.

All animals arrived at their destination in a healthy condition. A few animals developed air sickness but recuperated when given a short "bath" in a lake approximately half way to point of release. This usually happened in very hot weather.

The standard Bailey beaver live-trap was used for the project.

Some attempts were made to drain ponds and retrieve the beaver with dip nets. This operation netted us six beaver, but did not prove economical since it required too much man power (at least four men) to catch the beaver escaping from the pond.

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A total of 34 animals were lost during this operation. Twenty-one escaped from holding pens and 13 died. Seven of the 13 that died were late kits. Three were drowned in traps and three adults died, possibly due to trap injuries or fighting. Of the 21 animals that escaped 12 worked their way out through holes made by failure of the wire lacing holding the mesh together. This wire rusts under water and breaks quite easily after a couple of weeks immersion. Six were lost due to carelessness in handling and under-estimating a beaver's strength and agility in climbing.

There was a total of 183 man-days spent on this project including the men's time accompanying the animals to the point of release by aircraft.

A total of eight trap-nights was required to catch each animal.

Other than beaver there were five muskrats and one turtle taken in these traps.

The total cost of the operation was \$725.63, used as follows:

Salaries for men @ .75¢ per hour	\$330.75
Travel, mileage, meals etc.	\$266.64
Maintenance, Groceries, wire, scissors, etc.	<u>\$128.24</u>
TOTAL	\$725.63

Cost per animal trapped	8.74
Cost per animal released	14.81

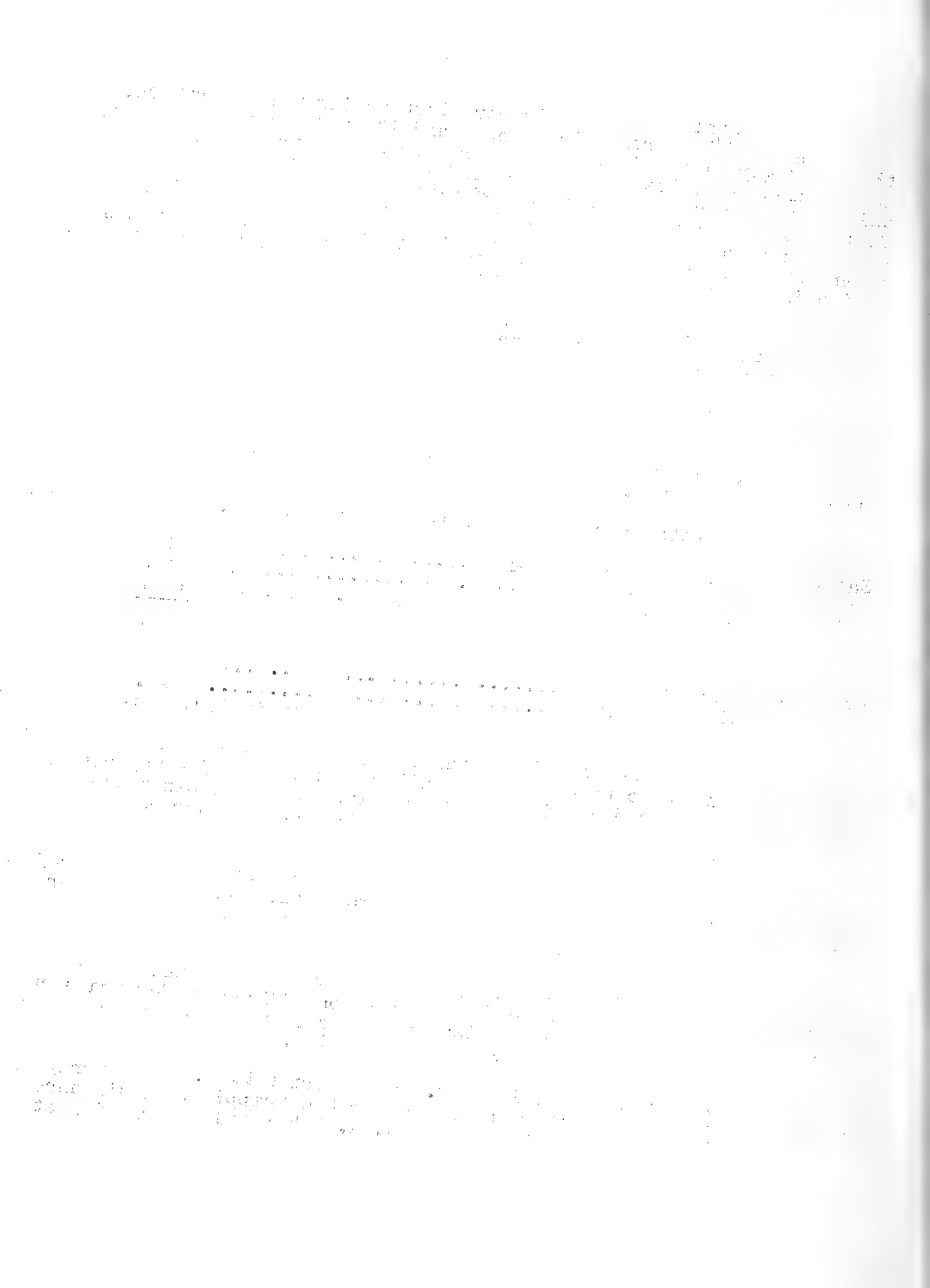
(not including air transport)

We had the use of a total of 14 live beaver traps to do this trapping, but at no time were they all set at once. The majority of these traps were old and in need of repair. At least ten beaver escaped from these traps after being caught, due to poor conditions of the traps.

Several extra men were employed occasionally on this project, all white trappers. They were hired periodically when our men were moved to a remote location with only means of transportation being train and track motor-car.

We believe that this operation could be carried on more economically by giving several Conservation Officers a few traps and pens with which to take the nuisance beaver in their own patrol areas. Large holding pens would be located centrally.

Conservation Officers W. Watts, Britt P. O., and Murray Rusk, Parry Sound, were mainly responsible for the trapping. Assistance was also given by our Boat Captain, J. A. Dube and the ranging staff.



The following shows the final results in table form:

Released Aug. 9th, 1959				Released Aug. 22, 1959				Released Sept. 13, 1959			
Lake 59-19				Lake 59-16				Lake 59-20			
Age	Sex	Tattoo	Ear Tags	Age	Sex	Tattoo	Ear Tags	Age	Sex	Tattoo	Ear Tags
Ad.	F	W-1	1-1	Kit	-	W-19	36-37	Ad.	F	0-38	67
Ad.	M	W-2	2-4	Kit	-	W-20	38-39	Ad.	M	0-39	71-72 (26 lb.)
Kit	-	W-3	3-5	Kit	-	W-21	40-41	Ad.	F	0-41	73-74 (30 lb.)
Ad.	F	W-4	6-7	Ad.	F	W-23	42-43	Ad.	F	0-42	75-76 (45 lb.)
Ad.	M	W-5	8-9	(34 lb.)	M	W-24	44-45	Ad.	M	0-43	77 (30 lb.)
Ad.	F	W-6	10-11	Ad.	M	W-25	46-47	Ad.	F	0-45	79-80 (41 lb.)
Ad.	F	W-7	12-13	Ad.	M	W-26	48-49	Kit	-	0-46	81-82 (9 lb.)
Ad.	M	W-8	14-16	Kit	-	W-27	50	-	F	0-47	83-84
Kit	-	W-9	18-19	Kit	-	W-28	51-52	Ad.	M	0-48	85-86
Ad.	F	W-10	20-21	Ad.	F	W-29	53-54	-	-	0-49	87-88 (8 lb.)
Ad.	M	W-12	22-23	Ad.	F	W-30	55-56	Ad.	F	0-51	89-90 (24 lb.)
Ad.	M	W-13	24-25	Kit	-	W-31	57-58	Ad.	F	0-52	91-92 (34 lb.)
Ad.	F	W-14	26-27	Ad.	M	W-32	59-60	-	-	0-53	93-94 (35 lb.)
Ad.	M	W-15	28-29	Ad.	F	W-34	61-62	Ad.	M	0-54	95-96 (39 lb.)
Ad.	F	W-16	30-31	Ad.	F	W-35	63-64	Kit	-	0-56	97-98 (9 lb.)
Ad.	M	W-17	32-33	Ad.	M	W-36	65-66	Kit	-	0-57	99-100
Ad.	M	W-18	34-35	Ad.	F	W-37	68	Kit	-	0-58	101-102
-	-	-	-	-	-	-	-	Kit	-	0-59	102-103
-	-	-	-	-	-	-	-	Ad.	-	0-61	105-106

All ear tags prefixed with letter "T"

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

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of appropriate statistical techniques to interpret the results.

3. The third part of the document focuses on the role of management in overseeing the data collection and analysis process. It stresses that management should ensure that the data is reliable and that the analysis is conducted in a fair and unbiased manner.

4. The fourth part of the document discusses the importance of communication in the data analysis process. It notes that clear and concise communication is essential for ensuring that the results of the analysis are understood and acted upon by all relevant stakeholders.

5. The fifth part of the document concludes by summarizing the key findings of the analysis and providing recommendations for future actions. It emphasizes that the data analysis process is an ongoing one and that regular monitoring and evaluation are necessary to ensure continued success.

RABBIT, HARE AND FOX HARVEST,
LAKE HURON DISTRICT, 1959-60

by
R. E. Mason

Abstract

Conservation Officers collected hunter bag information from hunters in the field during the period from mid-October, 1959 to February 29, 1960. In the 30 regulated townships this information was supplemented with a hunter mail bag survey in which information was solicited from 10% of regulated township licence purchasers. Of the four species considered, European hare comprised 47% of the total bag, cottontails 42%, snowshoe hare 9% and red fox 1%. The low harvest of red fox is presumably due to the recent rabies epizootic. The average hunter success for the four species during the 1959-1960 hunting season was 0.16 animals per man-hour. In Waterloo County cottontail hunting showed an improvement over the 1958-1959 season with 24% more cottontails shot per man-hour of hunting.

Introduction

Cottontails, European hare, varying hare, and red fox are considered in this report. The period covered in the report is from mid October 1959, to February 29, 1960, which dates include the regulated township season on rabbits and foxes.

Procedure

Conservation Officers collected hunter bag information during personal contact with hunters in the field, and recorded the data on standard district forms. In the thirty regulated townships, this information was supplemented with a hunter mail bag survey, in which information was solicited from 10% of regulated township licence purchasers.

The district forms used to record the information include several species of upland game. This makes the separation of hunting effort per species impossible. For the purpose of this report, it is presumed that a hunter will shoot most species of game indiscriminately when in season, and therefore all hunters reporting during the period of the report are considered potential hunters of the four species concerned.

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Comparison of the average hunter success between townships on this assumption introduces no biases when the four species are considered together. Such a comparison is made to indicate the relative distribution of hunting success over the district, regardless of species.

Considering rabbits, hares, and foxes separately to obtain relative hunting success on this assumption however does result in biased estimates as these species are not generally distributed north to south over the district. The bias has the affect of disproportionately lowering the average hunter success figure for any one species. This can be somewhat compensated for by setting wide limits for the average success figure. It should be realized however, that above average hunting will probably be prevalent in the animal's range, and that this is most likely due to the biased estimate of the average success figure.

This does not affect the use of the data for comparison of relative hunting success either between townships or between years as long as the data are handled in the same manner. The danger lies in using the hunting success figure individually for rabbits, hares, or foxes as an absolute number.

Separation of the data according to distribution of the species might overcome this difficulty, however huntable populations of either cottontails or snowshoe hare occur in isolated areas outside their normal range. Exclusion of information from these areas is considered not desirable as it would not indicate the entire relative distribution of hunting success for the district.

Results

Average hunting success, for the four species is presented in Table I.

TABLE I - Hunting Success

	<u>Mail Bag Survey</u>	<u>Officers' Reports</u>	<u>Totals</u>
Total Hunters	361	1,569	1,930
Total Man-hours	1,926	6,505	8,431
Total Game Bagged	173	1,139	1,312
Success Per Man-hour	0.09	0.17	0.16

As can be seen from the above table, the mail bag survey data lowered the overall hunting success figure. This may be due to biases in this type of survey, or may be due to the fact hunters were reporting a whole day's hunt. The data collected by officers usually represent part of a day's hunt as the party is contacted while hunting. This is evidenced by the 5.3 hours per man according to the mail bag survey, and the 4.2 hours per man according to officer's reports.

Considering individual townships, inclusion of the mail bag survey had the effect of raising the average hunter success in nine townships, and lowering it in eight. One township remained the same. In the broad classification of hunter success used on the accompanying maps, only three townships were significantly affected. Wilmot township was lowered from above average to average, Blenheim lowered from above average to below average, and Puslinch raised from below average to average. In these cases, the inclusion of the mail bag data substantially increased the numbers of hunters surveyed. Because of this, and because the data did not have the effect of disproportionately raising or lowering the average hunting success per township, the mail bag survey data are included.

TABLE II - Species Composition of Bag

<u>Species</u>	<u>Number</u>	<u>Percent</u>
European Hare	620	47
Cottontail	558	42
Snowshoe Hare	122	9
Red Fox	12	1
<u>TOTALS</u>	<u>1,312</u>	<u>99</u>

It is interesting to note the importance of European hare. The low harvest of foxes is presumed due to the 1958-59 rabies epizootic.

The relative hunting success for the four species together and separately is presented for the district on the following maps.* Townships are classified as average or above or below average. The limits for the 'average' classification are indicated on the map, and have been arbitrarily selected to range around the following means:

mean total game per hunter-hour	0.16
mean cottontails per hunter-hour	0.07
mean European hare per hunter-hour	0.07
mean snowshoe hare per hunter-hour	0.014

Means for each species are calculated using total hunters and total hours applied to each species. Comparative data for previous years are not available. Below average townships include townships where the species were not represented in the data. Comparisons of absolute values used are presented for each township in the appendix.

Hunting success figures are not presented for red fox because of the comparatively few shot. Townships in which foxes were shot are indicated on the map.

* A series of five maps accompanied the original report now on file in the Fish and Wildlife Library, Maple.

Comparative figures for cottontail harvest are available for three years from Waterloo County. This information was collected by the local Conservation Officer for a project report. Select local cottontail hunters were asked to submit results of their hunting annually over the three year period. These data are especially suited to evaluating relative cottontail success from year to year as the same men were reporting each year, hunting was done in the same area each year, and effort, techniques, and recording have been relatively constant over that time.

Results are presented in Table III.

TABLE III - Hunting Success Waterloo County

<u>Hunting Season</u>	<u>Number Hunters</u>	<u>Number Hours</u>	<u>Number Cottontails</u>	<u>Cottontails Per Man-hour</u>
1957-58	45	2,630	1,589	0.60
1958-59	46	1,287	1,930	0.67
1959-60	44	1,651	1,983	0.83

From table III, it would appear that cottontail hunting has improved by 0.16 cottontails per man-hour over 1958-59, and improved by 0.23 cottontails per man-hour over 1957-58. Expressing these differences as percentages of the ratio for the appropriate year, the percentages are + 24% and + 38% respectively.

It is interesting to note comparative red fox harvests for Waterloo County since 1958. This information is available because of the bounty paid on foxes by the county. Prize money is awarded on a bi-annual basis to the person shooting the most foxes. The local officer is responsible for tallying the records which he submits to the county. Since many hunters collaborate, registering as a single hunter, hunting success can not be calculated. Harvest per unit area is however available.

In 1958, 785 foxes were harvested from 257,939 acres, or 0.33 foxes per 100 acres. In 1959, 154 foxes were harvested from 257,939 acres, or 0.02 foxes per 100 acres.

It is not intended to intimate that the increase in cottontail hunting success is due to the decrease in fox populations as any such correlation would be apparent only after the analysis of much more data taking into account other possible variables, such as cottontail reproductive success related to meteorological conditions over the three year period.

Sex ratio information was also collected, but has not been included in this report because of general confusion in the identification of the male penis and female clitoris.

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Summary and Conclusions

- (1) Of the four species considered, European hare comprised 47% of the total bag, cottontails 42%, snowshoe hare 9%, and red fox 1%. The low harvest of red fox is presumably due to the recent rabies epizootic.
- (2) The average hunter success for the four species during the 1959-1960 hunting season was 0.16 animals per man-hour.
- (3) On the basis of information collected from Waterloo County, cottontail hunting has improved over the 1958-1959 season, with 24% more cottontails shot per man-hour of hunting.
- (4) Distribution of relative hunting success is indicated on attached maps of the district.

References

Merner, F. H. The status of the Cottontail as a Game Species in Waterloo County, 1959-1960, unpubl.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This not only helps in tracking expenses but also ensures compliance with tax regulations. The second part of the document provides a detailed breakdown of the company's revenue for the quarter. It shows that sales have increased by 15% compared to the previous quarter, primarily due to the launch of a new product line. The third part of the document outlines the company's financial goals for the next six months. It includes a budget for marketing and research and development, as well as a target for profit margins. The final part of the document is a summary of the key findings and recommendations. It suggests that the company should continue to invest in research and development to stay competitive in the market. It also recommends that the company should focus on improving its operational efficiency to reduce costs and increase profitability.

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<u>Halton County</u>										
<u>Esquesing #</u>		11	41	3.7	7	0.17	0.17	0.0	0.0	0.0
<u>Huron County</u>										
<u>Hay #</u>		12	62	5.2	3	0.05	0.05	0.0	0.0	0.0
<u>Howick</u>		11	16	1.5	14	0.87	0.12	0.73	0.0	0.0
<u>Stanley</u>		7	18	2.7	0.0	0.0	0.0	0.0	0.0	0.0
<u>Stephen #</u>		22	96	4.4	4	0.04	0.03	0.01	0.0	0.0
<u>Tuckersmith</u>		3	12	4.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>Usborne</u>		24	99	4.1	15	0.15	0.01	0.14	0.0	0.0
<u>Oxford County</u>										
<u>Blenheim #</u>		64	380	5.9	26	0.07	0.04	0.02	0.0	0.0
<u>Blandford #</u>		20	93	4.6	10	0.11	0.04	0.06	0.0	0.0
<u>Dereham #</u>		18	58	3.2	17	0.30	0.17	0.12	0.0	0.0
<u>Nissouri E. #</u>		11	56	5.1	1	0.02	0.0	0.02	0.0	0.0
<u>Norwich N. #</u>		27	116	4.3	8	0.07	0.04	0.03	0.0	0.0
<u>Norwich S. #</u>		8	39	4.9	8	0.20	0.15	0.05	0.0	0.0
<u>Oxford E.</u>		10	49	4.9	8	0.16	0.16	0.0	0.0	0.0
<u>Oxford N.</u>		4	4	1.0	2	0.50	0.50	0.0	0.0	0.0
<u>Oxford W.</u>		7	14	2.0	2	0.15	0.15	0.0	0.0	0.0
<u>Zorro E. #</u>		39	186	4.8	29	0.16	0.15	0.01	0.0	0.0
<u>Zorra W. #</u>		48	282	5.9	20	0.07	0.05	0.02	0.0	0.0
<u>Perth County</u>										
<u>Blanshard</u>		106	686	6.5	176	0.25	0.08	0.17	0.0	0.0
<u>Downie</u>		54	303	5.6	78	0.25	0.17	0.09	0.0	0.0
<u>Easthope N.</u>		?	?	?	40	?	?	?	?	?
<u>Easthope S.</u>		19	114	6.0	30	0.27	0.12	0.13	0.0	1
<u>Ellice</u>		6	40	6.7	64	1.6	0.77	0.60	0.20	0.0
<u>Elma</u>		20	132	6.6	31	0.24	0.10	0.14	0.0	0.0
<u>Fullarton</u>		49	334	6.8	87	0.25	0.13	0.13	0.0	2
<u>Hibbert</u>		28	188	6.7	47	0.25	0.08	0.18	0.0	0.0
<u>Logan</u>		?	?	?	14	?	?	?	?	?
<u>Wallace</u>		6	39	6.5	14	0.35	0.20	0.14	0.0	1

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<u>Waterloo County</u>										
Dumfries N. #**		2	13	6.5	2	0.15	0.15	0.0	0.0	0.0
Waterloo	13	13	33	2.5	10	0.31	0.15	0.15	0.0	0.0
Wilnot #	43	205	205	4.8	31	0.15	0.09	0.06	0.0	0.0
Wellesley	67	344	344	5.1	43	0.12	0.06	0.07	0.0	0.0
Woolwich	37	175	175	4.7	33	0.19	0.10	0.09	0.0	0.0
<u>Wellington County</u>										
Eramosa	50	141	141	2.8	26	0.18	0.01	0.05	0.12	1
Erin	35	87	87	2.5	15	0.16	0.05	0.02	0.09	1
Garafraxa W.	48	141	141	2.9	10	0.07	0.0	0.04	0.02	2
Guelph	30	90	90	3.0	13	0.13	0.03	0.08	0.02	1
Maryborough	37	198	198	5.4	37	0.18	0.02	0.17	0.0	0.0
Nichol	27	81	81	3.0	9	0.10	0.01	0.07	0.02	0.0
Peel	45	233	233	5.2	25	0.11	0.02	0.07	0.0	0.0
Pilkington	29	90	90	3.1	10	0.10	0.02	0.06	0.02	1
Puslinch	40	190	190	4.8	30	0.16	0.10	0.03	0.0	2
<u>Wentworth County</u>										
Ancaster #	102	362	362	3.6	10	0.03	0.02	0.01	0.0	0.0
Beverly	117	518	518	4.4	18	0.04	0.03	0.01	0.0	0.0
Binbrook	88	209	209	2.4	1	0.01	0.01	0.0	0.0	0.0
Flamboro E.	48	150	150	3.1	18	0.12	0.12	0.0	0.0	0.0
Flamboro W.	55	147	147	2.7	8	0.05	0.05	0.0	0.0	0.0
Glanford	59	230	230	3.9	6	0.03	0.01	0.01	0.0	0.0
Saltfleet	44	177	177	4.0	6	0.03	0.03	0.0	0.0	0.0
TOTALS	1,930	8,431	8,431	4.4	1,312	0.16	0.07	0.07	0.014	9

SIMPLE METHOD FOR REMOVAL OF INCISORS FROM MOOSE MANDIBLES

by
J. E. Culliton

Abstract

A simple method for removing incisors from moose jaws is described. This method eliminates the prolonged process of boiling the jaws in order to obtain incisors for aging purposes.

This procedure used in the Gogama District during the extraction of incisors from moose mandibles for aging purposes proved very adequate and speedy.

Equipment Required

Stationary vice, hammer, $\frac{1}{2}$ " cold chisel, steel knife approximately 12" long, $\frac{3}{32}$ " thick and 1 - $1\frac{1}{2}$ " broad (such as a sharpened mill bandsaw blade) small knife, draw knife or bone scraper such as used in taxidermy work.

Procedure

Set moose jaw in vice with the incisors up and in working position. With the cold chisel and hammer knock the number two incisor on either side out. This affords working space to get at the number one (centre two) incisors. Set the knife edge into the jaw between the number one incisor and the number two root on the left and using the hammer tap the knife edge between the tooth roots until it is well into the jaw. Repeat this procedure on the other side of the jaw. This will give a "V" shaped cut.

Next place the knife edge between the two number one incisors using care so that the teeth remain intact. Gently tap the knife edge between the roots of the two number one teeth until the centre cut reaches the outside cuts in the jawbone.

When the preceding three incisions are completed it is a simple matter to force the two number one teeth out using the fingers. Once the teeth have been forced out, in the rough state, the jaw is removed from the vice and the teeth inserted for scraping with a small knife or drawknife.

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

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support informed decision-making.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and reporting, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data collection and analysis. It identifies common issues such as data quality, privacy concerns, and integration of disparate data sources, and offers strategies to overcome these challenges.

5. The fifth part of the document provides a detailed overview of the data collection and analysis process. It describes the steps from data identification to final reporting, ensuring that all relevant information is captured and analyzed thoroughly.

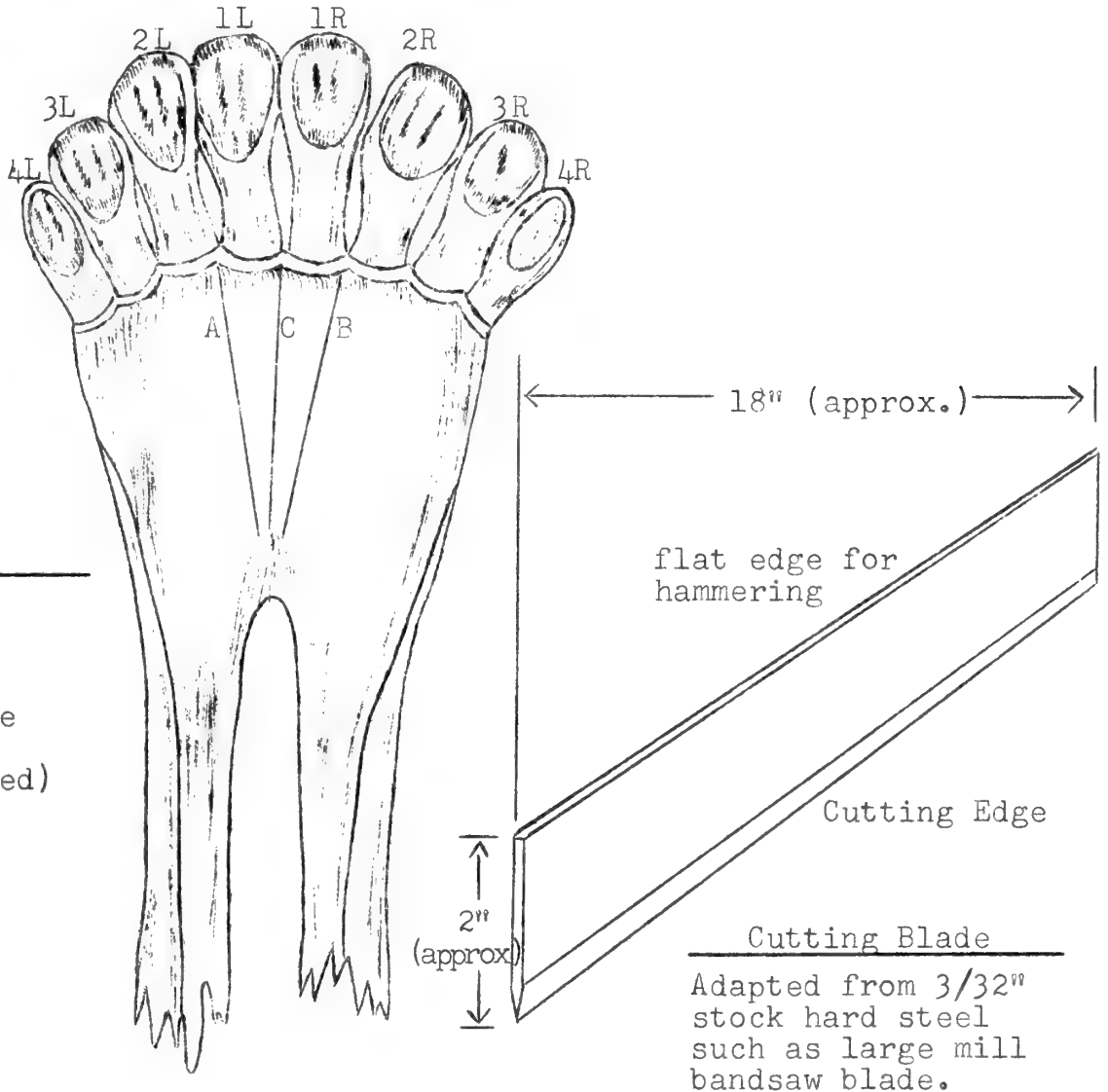
6. The sixth part of the document discusses the importance of data security and privacy. It outlines best practices for protecting sensitive information and ensuring compliance with relevant regulations and standards.

7. The seventh part of the document explores the role of data in strategic planning and decision-making. It illustrates how data-driven insights can help organizations identify opportunities, assess risks, and make more effective strategic choices.

8. The eighth part of the document provides a summary of the key findings and conclusions. It reiterates the importance of a robust data collection and analysis framework for achieving organizational success and sustainable growth.

9. The final part of the document offers recommendations for future research and implementation. It suggests areas for further exploration and provides practical advice for organizations looking to optimize their data management practices.

Method of Removal of Incisors From Moose Jaws



Equipment Required

- Bench Vise
- Hammer
- Cold Chisel
- Cleaning Knife
- Cutting Blade (illustrated)

Method

- (1) Lower portion of jaw held fast in bench vise.
- (2) Nos. 2L and 2R are broken off at gum line with hammer and cold chisel.
- (3) When 2L and 2R are removed, use cutting blade and hammer to produce cuts A, B & C in that order. Take care that the No. 1 incisors are not damaged during cutting.
- (4) When cuts A, B & C are complete, both No. 1 incisors can be removed with finger pressure, or if still tight a gentle hammer tap will remove them. Take care again that the No. 1 incisors are not damaged.
- (5) When both No. 1 incisors have been removed, they can be cleaned free of clinging meat and bone with a knife or similar object.

Dear Mr. [Name],
I am writing to you regarding the [Project Name] which is currently in progress. The project is aimed at [Project Description] and we are currently in the [Phase] stage. We have received your input and we are taking it into consideration. We are currently [Action] and we will be [Action] in the near future. We are currently [Action] and we will be [Action] in the near future. We are currently [Action] and we will be [Action] in the near future.

Yours faithfully,
[Name]
[Title]
[Company Name]

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KENORA DISTRICT MOOSE OBSERVATIONS, 1959-1960

by
M. Linklater

Abstract

A special study plot was set up during the winter of 1959-60 to try and determine how varying weather conditions affect our moose counts. The plot chosen for the study was one selected from the master map of the 1958-59 moose inventory. It is identified by the co-ordinate number J2-17 and is situated 55 air miles southeast of Kenora. The plot encompasses an area of 25 square miles.

During the period from January 5/60 up to March 22/60, the plot was censused from aircraft on ten occasions. Counts varied from seven on March 22nd to 29 on two occasions; the overall total recorded was 178 for an average of 17.8 moose each time the plot was covered.

Reciprocal flights were arranged by crews from the Fort Frances and Kenora Districts to cover a plot in each District to test the accuracy of counts. Results from the flights indicate that familiarity of the plot is a factor in the numbers of moose tallied. Weather conditions or chill factors do not appear to have any great influence on the counts.

Acknowledgments

Acknowledgment is due to Carl Schenk, District Biologist, for his assistance in the analysis and his help in the preparation of this report.

Staff members who assisted in the work include J. Kincaid, Pilot; Sr. Conservation Officer P. A. Thompson; Conservation Officers A. R. Olsen and Don Busch; and Ranger Terry Humberstone.

Introduction

The moose inventory work carried out during the winter of 1958-59 in the Western Region produced results which were deemed to be adequately informative for the time being, without a similar program being necessary during the winter of 1959-60. On this account, it was decided in the Kenora District that more value might be derived from a special study during the winter of 1959-60, involving one particular plot in which an attempt would be made to determine if and how varying weather conditions affect our counts of moose. Particular attention was to be devoted to the chill factor, this

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being a function of wind, temperature and relative humidity.

In addition, an arrangement was made with the Fort Frances District to undertake reciprocal flights of our respective study plots in order to determine whether similar counts are made by different crews. Information concerning this particular portion of the winter's work will be presented separately following the presentation of the weather study.

How Plot Was Chosen

Initially, thought was directed towards carrying out the survey in a location where ingress and egress of animals to the study plot could be ascertained. However, consideration of this possibility soon indicated that the selection of such an area, perhaps one of our larger islands on Lake of the Woods, would be unsuitable from the point of view of numbers of animals present. In order to obtain a plot where numerical differences corresponding with varying weather conditions might be great enough to be significant, the highly desirable feature of being able to plot ingress and egress had to be sacrificed. Although some hope was entertained of still being able to do so on the inland plot selected, long time lapses between sorties and difficulty of following tracks where certain cover types were present, soon dispelled any notions of accomplishing this important aspect of the study.

The plot ultimately selected was one from the master map of the 1958-59 inventory with 47 moose being recorded at that time. It is identified by the co-ordinate number J2-17 and is situated fifty-five air miles southeast of Kenora and 22 miles due south of Vermilion Bay. The plot encompasses an area of 25 square miles.

Description of Plot

The general topography of the plot is rough, rocky uplands with an abundance of swamps scattered throughout in the low lying sections. Lakes comprise 14.2% of the total area and these waters are well distributed over most of the plot. About 65% of the plot was burned over in 1933, with the fire being most severe in the southwest portion (Section 5 on plot). This particular segment of the plot has regenerated to a heavy stand of Jackpine with very little understory.

The remainder of the plot consists of stands of mature spruce interspersed with large stands of mixed woods. Trembling aspen and white birch are predominant in most of the mixed stands, and by far the greater proportion of the trees in these stands are in the early stages of development. This young growth is particularly noticeable along the shores of the lakes and near the tops of many of the hills. Such growth appears to be typical of the surrounding area for miles and contributes to excellent habitat conditions for moose throughout this portion of the Kenora District.

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Crews and Counting Technique

As much as possible, the same crew was used to complete the counts of moose on the plot each time, but absolute consistency in this respect could not be maintained. As in the inventory work completed during the winter of 1958-59, a beaver aircraft and a crew consisting of pilot, navigator and two observers were employed. All members of the crew assisted in the spotting of moose on the plot. As much as possible the aircraft was flown at an altitude of 800 feet and a speed of 80 m.p.h. Six divisions of the plot were contrived, based on natural topographical boundaries (see map); the aircraft circled to achieve adequate coverage of each section on each flight.

Weather

Weather conditions for the censusing period were obtained from the records kept at the Kenora Airport by the Meteorological Branch, Department of Transport. This station lies approximately 55 air miles northwest of the plot itself and possible discrepancies between the figures provided from this source and actual conditions on the plot for certain days are to be given due consideration. However, since it was impossible to obtain some of the required information at the study site, it was decided to utilize completely the Kenora weather data.

The months of January, February and March were characterized by a general lack of temperature extremes and light snowfall. Total snowfall for the three month period was 5.81 inches, with little or no crust being recorded. Snow depths varied throughout the District with maximum accumulation on the plot at any one time being 17 inches.

Results

The initial flight over the study area was made on January 5th, 1960 with coverage of the plot being terminated on March 22nd, 1960. During this period, the plot was censused on ten separate occasions with a total of 178 moose being recorded. The cumulative total of moose believed to be on the plot but not sighted was 147.

The following table indicates censusing dates, moose counted and information on weather. The data dealing with daily mean temperature, wind direction, mean wind velocity and relative humidity were obtained from the Meteorological Branch, Department of Transport. This station is situated at the airport approximately three miles northeast of the Town of Kenora.

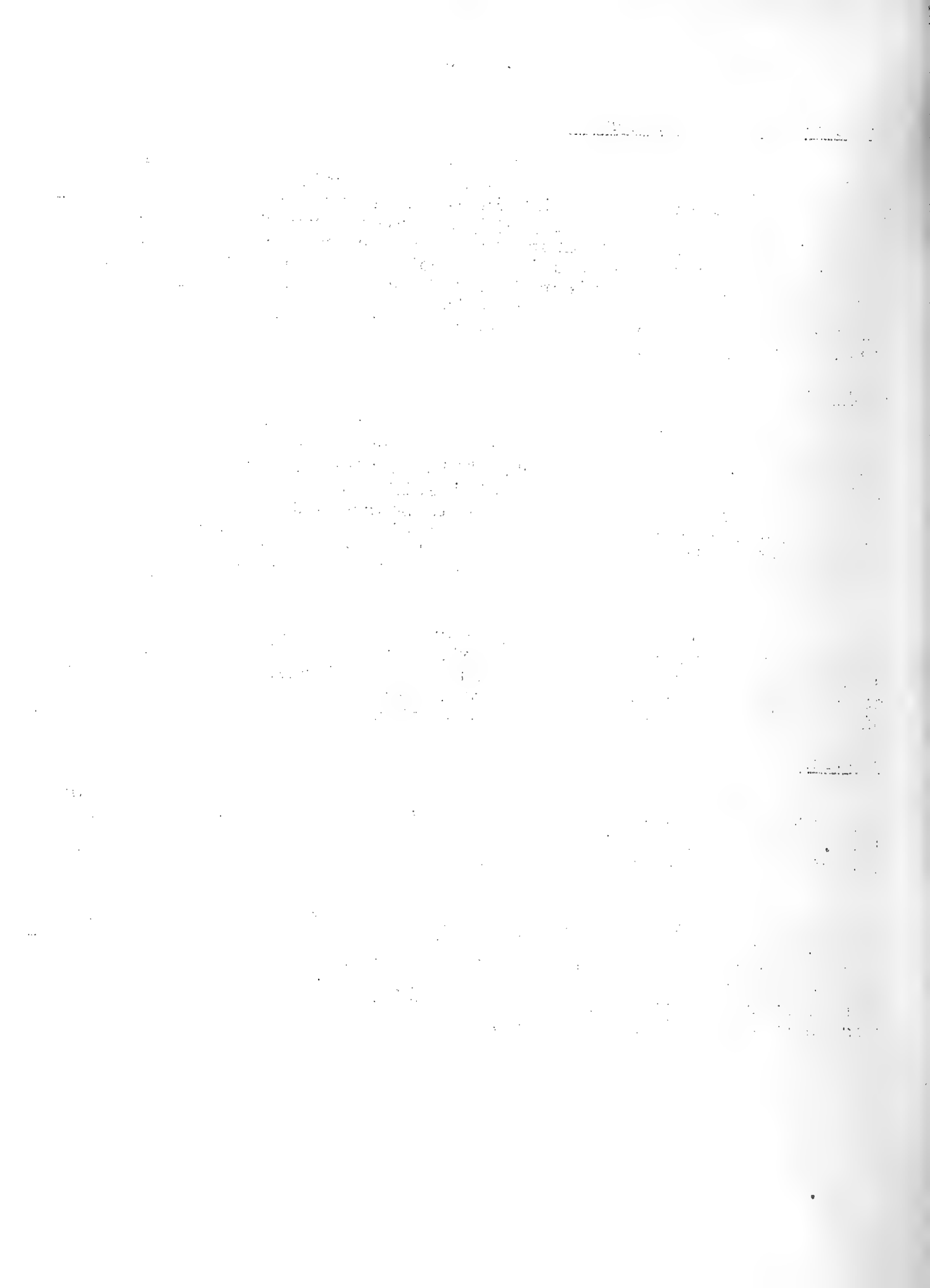


TABLE I -

Date	Moose Counted	Daily Mean Temp.	Wind Direction Velocity	Relative Humidity	Snow Depth on Plot	Crust Condition on Plot	Temp. on Plot
Jan. 5	17	- 17°	SW 13	86	11 ⁱⁿ	A	- 20°
Jan. 20	29	+ 2°	N 6	89	11 ⁱⁿ	A	+ 10°
Feb. 2	26	+ 18°	S 14	75	15 ⁱⁿ	A	+ 30°
Feb. 11	9	- 5°	N 8	76	15 ⁱⁿ	A	+ 8°
Feb. 12	14	0	S 8	72	15 ⁱⁿ	A	- 5°
Feb. 17	17	+ 5°	NW 9	71	17 ⁱⁿ	A	- 5°
Feb. 19	29	- 3°	N 5	67	16 ⁱⁿ	A	- 16°
Feb. 24	18	+ 8°	NE 12	69	16 ⁱⁿ	A	+ 15°
Mar. 4	12	0°	W 8	80	15 ⁱⁿ	A	+ 2°
Mar. 22	7	+ 3°	SE 10	73	16 ⁱⁿ	B	+ 20°

Table II presents the numbers of moose recorded on each Division of the plot. These divisions were selected on the basis of topographical features within the plot area. For reference refer to the map.

TABLE II - Number of Moose Seen

Divisions of Plot	1	2	3	4	5	6	Total
Jan. 5	2	6	nil	5	1	3	17
Jan. 20	4	nil	1	8	5	11	29
Feb. 2	4	2	11	1	nil	8	26
Feb. 11	3	1	4	1	nil	nil	9
Feb. 12	5	1	5	2	nil	1	14
Feb. 17	3	3	5	nil	2	4	17
Feb. 19	5	1	10	7	nil	6	29
Feb. 24	5	2	2	7	nil	2	18
Mar. 4	nil	5	5	1	nil	1	12
Mar. 22	6	1	nil	nil	nil	nil	7
TOTALS	37	22	43	32	8	36	178

Counts by Different Crews on the Same Plots

In order to evaluate relative efficiencies of crews as an influential factor to be considered in moose inventory work, reciprocal flights of the two study plots in the Kenora and Fort Frances Districts were arranged.

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

2. It is essential to ensure that all data is entered correctly and consistently.

3. Regular audits should be conducted to verify the accuracy of the information.

4. Proper labeling and organization of files are crucial for easy retrieval.

5. The use of standardized forms helps in maintaining uniformity across different sections.

6. It is also important to have a clear system for updating and revising records.

7. Training staff on the correct procedures is necessary for successful implementation.

8. The final section outlines the responsibilities of each department in the process.

9. Collaboration between different teams is key to ensuring data integrity.

10. The document concludes with a summary of the key points discussed.

11. The next steps involve implementing the changes and monitoring their effectiveness.

12. The goal is to achieve a more efficient and accurate record-keeping system.

13. The document is intended to serve as a guide for all relevant personnel.

14. Any questions or concerns should be directed to the project manager.

15. The document is subject to periodic reviews and updates as needed.

The Fort Frances plot was flown by the crews from each District on February 10, with the crew from Fort Frances covering the plot first. The Kenora crew flew in to make their count as soon as possible after the departure of the other aircraft from the study area. In this way, it was assured that the number of animals on the plot was probably unchanged and that weather conditions were consistent for the two counts.

On February 24, similarly arranged flights were made over the Kenora study plot so that comparative counts could be established.

The Fort Frances plot was located 28 miles northeast of Fort Frances in the Big Sawbill Lake area. The Kenora plot was J2-17, the same as was involved in the weather study.

The results of the two series of counts are shown in the table as follows:

TABLE III - Counts Made on Reciprocal Flights

<u>Date</u>	<u>Study Plot</u>	<u>Fort Frances Count</u>	<u>Kenora Count</u>
Feb. 10	Fort Frances	30 moose	18 moose
Feb. 24	Kenora	12 moose	18 moose

The great difference between the counts made by the two crews on the Fort Frances plot was twice the difference which resulted from the second trial on the Kenora plot. Since each crew counted more moose on their own plot, however, there is a definite suggestion that familiarity with an area greatly influences the count derived. The fact that the differences established were quite dissimilar, indicates that other disrupting factors were influential as well. The Fort Frances crew followed definite flight lines and circled a particular area when evidence of one or more moose presented itself. The Kenora crew, on the other hand, employed a circling technique, with the plot being broken up into several sections on the basis of topographical features. These two different procedures possibly vary in their effectiveness either one way or the other. Did the greater differential in favour of the Fort Frances crew stem from the fact that individual moose might have been tallied more than once through the employment of their counting technique? Or was this differential a result of a better counting technique being used by Fort Frances which substantially offset the greater familiarity of the Kenora crew with their own plot? As well, individual differences among crew members might have contributed to the somewhat disjointed results.

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It is certainly unfortunate that the next obvious step was not reached to have the two aircraft complete flights on the same day over a study area with which both crews were completely unfamiliar. Such an experiment would obviate the familiarity factor and would afford better measures of the influence of individual differences and/or different counting techniques as variables in our counts. However, although insufficient trials were run, the completed work indicated that an initial flight over a plot probably provides a low count and also suggests that crews do operate with varying degrees of effectiveness.

Summary

During the winter of 1959-60, a special study was conducted on moose in a 25 square mile area in order to determine if and when weather conditions affect our counts of moose.

During the period from January 5/60 up to March 22nd, the plot was censused on ten occasions.

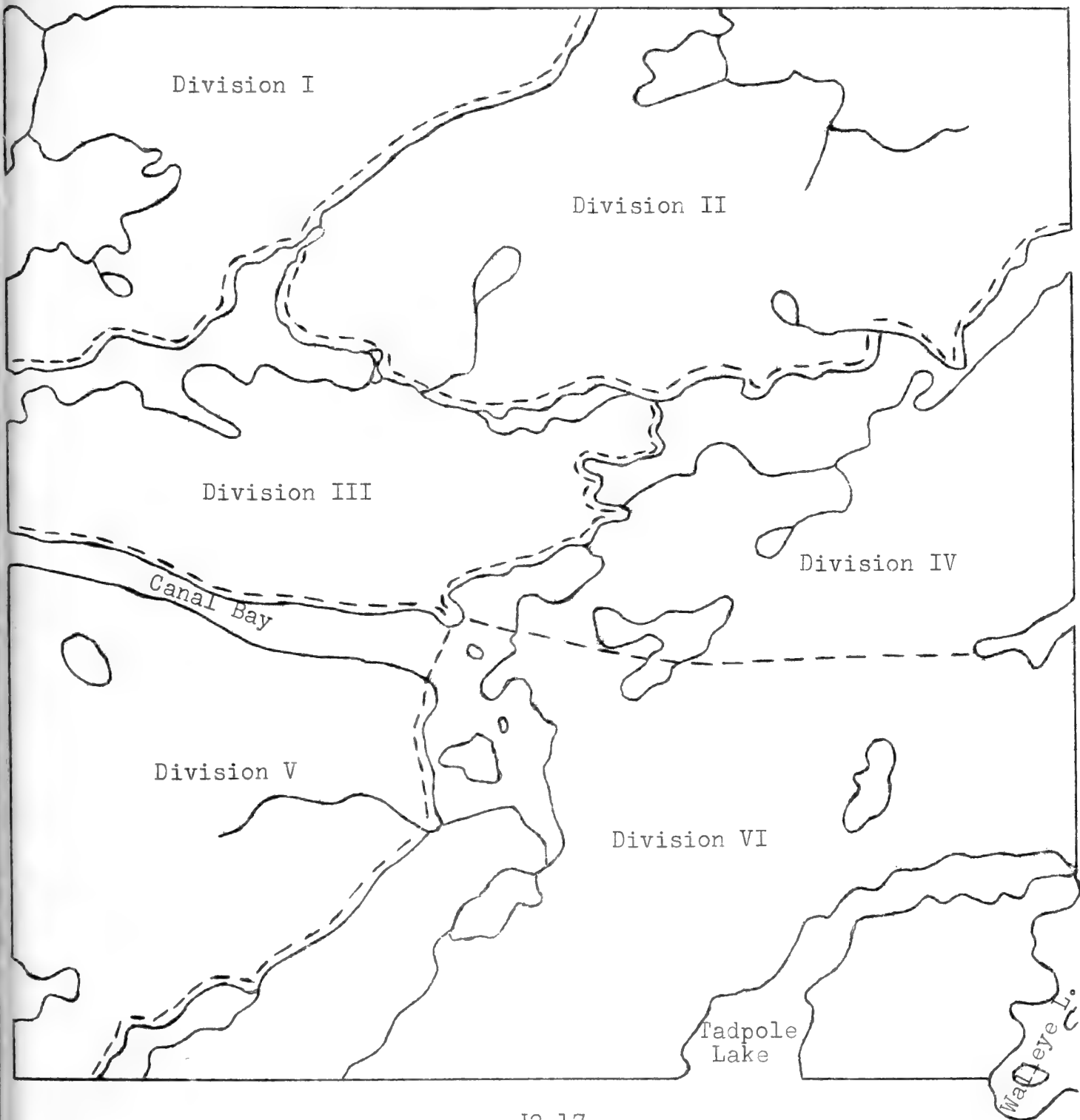
Counts varied from seven on March 22/60 to 29 on two occasions, the overall total recorded was 178 for an average of 17.8 moose each time the plot was covered.

Reciprocal flights were arranged by crews from the Fort Frances and Kenora Districts to cover a plot in each District to test the accuracy of counts. Results from the flights indicate that familiarity of the plot is a factor in the numbers of moose tallied. Weather conditions or chill factors do not appear to have any great influence on the counts.

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Moose Study Plot, Kenora District



J2-17

Scale - 1 mile = 1.5 inches



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KAMLOOPS TROUT REARING EXPERIMENT NO. 7,
HILL'S LAKE HATCHERY

by
N. D. Patrick

Abstract

Kamloops Trout are difficult to rear in hatcheries under normal operating conditions. This experiment was designed to investigate the possibility of rearing Kamloops Trout by warming the water and altering the diet. A water warmer was developed consisting of a 1000 watt immersion water heater mounted in a copper cylinder so that there was a continuous flow of water over the element. This warmer successfully raised the temperature of the hatchery water a maximum of about 16°f. The initial cost was less than \$20.00 and it cost \$11.00 per month to operate. Kamloops Trout reared in water of about 55°f and fed on a diet of finely ground beef spleen had only a 4.4% mortality while Kamloops raised in normal cold hatchery water and fed the regular ground liver diet during the same period had a 70.1% mortality. It was estimated that between ten and twenty thousand yearling Kamloops Trout could be raised by installing four units in the present hatchery system.

Introduction

Kamloops trout has been a difficult fish to establish in Northern Ontario. They apparently do very well in suitable waters, and the difficulty has arisen with respect to supplying a sufficient quantity of hatchery stock. Shipping stock from Southern Ontario is extremely expensive. We have been unable to successfully rear Kamloops at Hill's Lake. The problem at Hill's Lake appears to be one of water temperatures firstly, and diet secondly.

Purpose

To investigate the possibility of rearing Kamloops trout at Hill's Lake by warming the water and altering the diet.

Method

A water warmer is to be developed to warm the water of a single trough to an average of about 55°f. Kamloops are to be reared in this water and fed on a diet of finely ground beef spleen. A control is to be run rearing a number of Kamloops in the normal hatchery water, fed on the same diet. Daily records of temperature, and mortality are to be maintained, and the fish are to be weighed at regular intervals.

Observations

- (a) A water warmer was developed which admirably met the requirements of the experiment. This apparatus was designed by Mr. R. Duff, District Radio Technician, with suggestions from several other staff members. It consists of a 1000 watt immersion water heater mounted in a copper cylinder so that there is a continuous flow of water over the element. By regulating the flow of water over the element, and regulating the amount of cold water flowing into the trough, the water temperature may be regulated within one or two degrees. This unit will raise the hatchery water a maximum of about 16°f. The unit has now been in successful operation for over six months without difficulty. (See attached diagram.)
- (b) The culture of the fish involved was carried out by Mr. P. Graf, Assistant Hatchery Manager at Hill's Lake. The original cold-water rearing attempt was made with eggs received from British Columbia in 1957. The other fish came from eggs collected by Mr. Graf at Purdy Lake, Grenfell Township, in May of 1958.
- (c) The following data were recorded:
- (1) In July, 1957, 50,000 eyed eggs were received at Hill's Lake from British Columbia. These were hatched in the normal hatchery water and fed the regular ground liver diet. Growth was poor, and losses high. By the summer of 1958, 87.8% of the fish had died and the remainder were extremely small. On January 28, 1958, 500 of these (a sample of the general run), weighed only 111.5 gms.

Mr. Graf examined the losses from these fish regularly and pathology reports were submitted for each examination. The fish suffered from an infection suspected as Lentospora cerebralis, and a gill inflammation, and in the later part of the year, there was a strong suggestion of a lipoid degeneration of the liver. During the period February 3rd to March 2nd, 1958, a close check was made and a change in diet was effected. The fish showed some improvement, but their general condition by this time was such that little recovery could be expected.

- (2) During May of 1958, some 4,000 Kamloops eggs were taken from Purdy Lake in Grenfell Township near Kirkland Lake. The eggs from one of the fish, a dead female, were poor quality to begin with, but were included in the experiment. These eggs were incubated in the normal hatchery water, hatched and reared until July 22nd when the water heater was available and the experiment began. By July 22nd, only 2,360 fish remained from the original egg collection. These were divided into two groups, a group of 1,342 fish being placed in the warmed water, and the remaining 1,018 being left in the regular hatchery water.

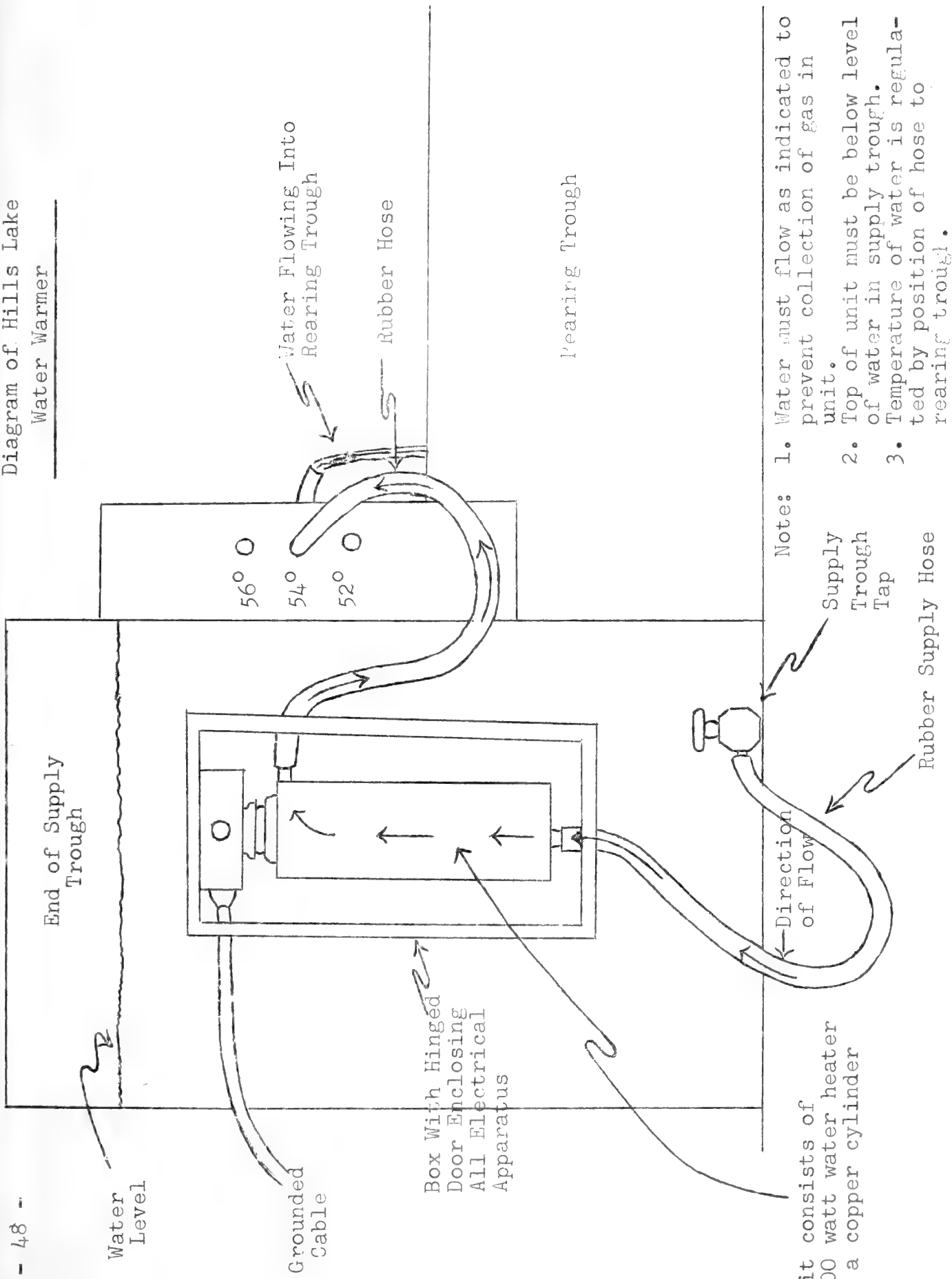
The first part of the document discusses the importance of maintaining accurate records. It emphasizes that proper record-keeping is essential for the efficient operation of any organization. This includes the collection, organization, and maintenance of data in a systematic and accessible manner.

In the second section, the author explores various methods for data collection and analysis. It highlights the need for standardized procedures to ensure the reliability and validity of the information gathered. The text also touches upon the use of statistical tools to interpret the data and identify trends.

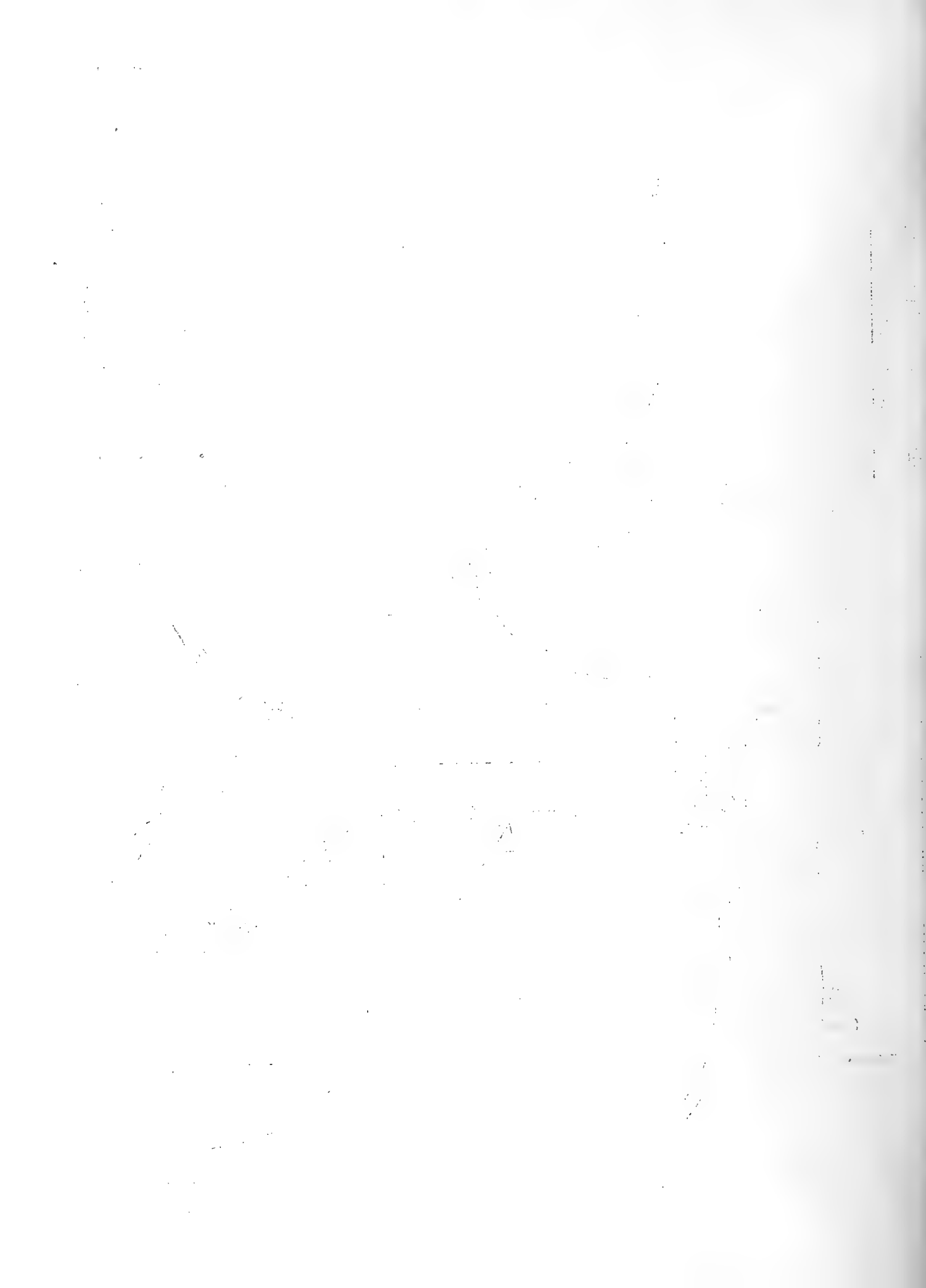
The third section focuses on the challenges associated with data management. It notes that as the volume of data increases, the complexity of storage and retrieval also grows. The author suggests implementing robust security measures to protect sensitive information and ensuring that data is easily accessible to authorized personnel.

Finally, the document concludes by discussing the future of data management. It predicts that advancements in technology, such as artificial intelligence and cloud computing, will continue to revolutionize the way data is handled. The author encourages organizations to stay updated on these trends and adapt their strategies accordingly.

Diagram of Hills Lake
Water Warmer



- Note:
1. Water must flow as indicated to prevent collection of gas in unit.
 2. Top of unit must be below level of water in supply trough.
 3. Temperature of water is regulated by position of hose to rearing trough.



The "warm" water was normally about 54° - 56°f., with extremes of from 53° to 63°. The hatchery water temperature varied during this period from 41° to 53° with an average of about 44° - 46°f. These temperature records were taken during part of July, and all of August, September and October.

At the end of October, the fish were all placed in "cold" water as the warming apparatus was needed for an incubation experiment. All the fish in this experiment were "free" fed on a diet of finely ground spleen. The food was placed on holders in the water and was available at all times. There was a short period when spleen was not available, (Pathology Report September 30, 1958) and fish were fed liver. All fish immediately lost their desire to feed, those in the cold water showing a subsequent increase in mortality. The fish in warm water were feeding normally again in one week.

The data are as follows:

- Eggs collected - May 15.
- Eyes first observed - June 19.
- Hatched - July 7.
- Yolk sac absorbed, fish start to swim and eat - July 19.
- Total incubation period - 53 days in cold water.

Weights

Weight series of warm water fish:- for each weight, 500 of the average run were weighed.

Aug. 20	-	500 fish weighed	120 gms.
Sept. 4	-	500 fish weighed	200 gms.
Sept. 26	-	500 fish weighed	410 gms.
Oct. 29	-	500 fish weighed	815 gms.
Dec. 12	-	500 fish weighed	1060 gms.

Weight series of cold water fish:- for each weight, 500 of the average run were weighed.

Aug. 20	-	500 fish weighed	50 gms.
Sept. 4	-	500 fish weighed	64 gms.

Note: Weighing was discontinued at this point because the fish were unable to withstand the handling. A sample of the larger fish in this experiment were transferred to another trough on September 20th. These fish appeared to be in fair condition with better than usual growth for the cold water.

Dec. 12	-	50 fish weighed	55 gms.
		(500 fish would weigh	550 gms.)

Mortality

From the time the experiment was started (July 22nd), a separate record of mortality was kept. From July 22nd, 1958, to January 3rd, 1959, the loss in the warm water was 59 fish or 4.4%. The loss in the cold water fish during the same period was 714 or 70.1%.

Finally, the following remarks by Mr. Graf in his report are worthy of note.

Warm water fish: "Average size of the fish is 2 1/2" - 3". Condition of fish is good. Weight and size is normal. At a temperature of 54° - 56°, fish had the best appetite. Mortality from the day of first feeding up to date was very low."

Cold water fish: the following remarks from the Pathology Report of September 30, 1958, apply - "Condition of fish is not good. Colour of fish is light. Fish have no appetite and lack blood. All fish in this trough are suffering."

Conclusion

There is no doubt that a limited supply of Kamloops trout may be raised at Hill's Lake through the use of the water warmer. Eggs will hatch earlier and even better summer growth than reported here can be expected. The initial cost of this apparatus is small (less than 20.00) and it costs 11.00 per month to operate. The present hatchery system will permit four units to be installed, and by using these over a four month period, it should be possible to rear somewhere between ten and twenty thousand yearlings.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author details the various methods used to collect and analyze the data. This includes both primary and secondary research techniques. The primary research involved direct observation and interviews with key stakeholders. The secondary research focused on reviewing existing literature and industry reports.

The final part of the document presents the findings and conclusions. It highlights the key trends and insights that emerged from the data analysis. The author also provides recommendations for future research and practical applications of the findings. The document concludes by reiterating the significance of the study and its contribution to the field.

WINTER FISHING, PARRY SOUND DISTRICT, 1959

by
C. A. Rettie

Abstract

A creel census was conducted to assess ice fishing during the months of January, February and March in the lakes of Parry Sound District. Selected lakes were checked for anglers twice a week during the winter. As a result of the data gathered it was learned that 578 anglers fished a total of 1,900 hours on 28 waters and captured 163 Lake Trout, 53 Pike, 36 Whitefish, 24 Ling, 55 Perch and 10 Smelt. Owing mainly to extremely severe weather conditions the number of anglers this year was estimated at only 30% of previous years. Live minnows were the most popular bait used. Tables showing fishing pressure, average catch per angler and fishing success by month are presented.

Ice fishing is fast becoming a very popular sport in this forest district and as such has caused some controversy as to its effect on fishing throughout the rest of the year. In an effort to appraise this sport it was decided to conduct a creel census and obtain as much data as possible from all anglers throughout the District.

In early January letters were sent to each Conservation Officer outlining this plan and naming some lakes in each patrol area that should be given priority in this work. These priority lakes were to be checked for anglers at least twice a week, but no opportunity was to be missed to gather data from an angler on any waters. Summaries of this creel census data were sent at the end of each month to District Office for compilation. This program continued throughout January, February and March, after which this sport almost ceased because of ice conditions. Therefore this report covers only the months of January, February and March. This collection of data will continue throughout the year and another report will be made for the open water period.

By February it was quite apparent that not nearly as many people would indulge in this sport as in previous years, possibly because of the extremely severe conditions experienced throughout the district. The number of anglers this year has been estimated at only 30% of previous years. However 578 anglers were checked as compared to 709 anglers for the same period the previous year. This

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was due to increased effort on the part of all officers. These 578 anglers fished a total of 1,900 hours on 28 waters and captured 163 Lake Trout, 53 Pike, 36 Whitefish, 24 Ling, 55 Perch and 10 Smelt. The most popular bait was live minnows.

The following tables give a breakdown of fishing by waters.

Symbols for Tables

* Indicates species angled for - other species caught incidental.

/ Indicates values less than figure shown.

Fishing Pressure = % of average number of rod hours per days checked.

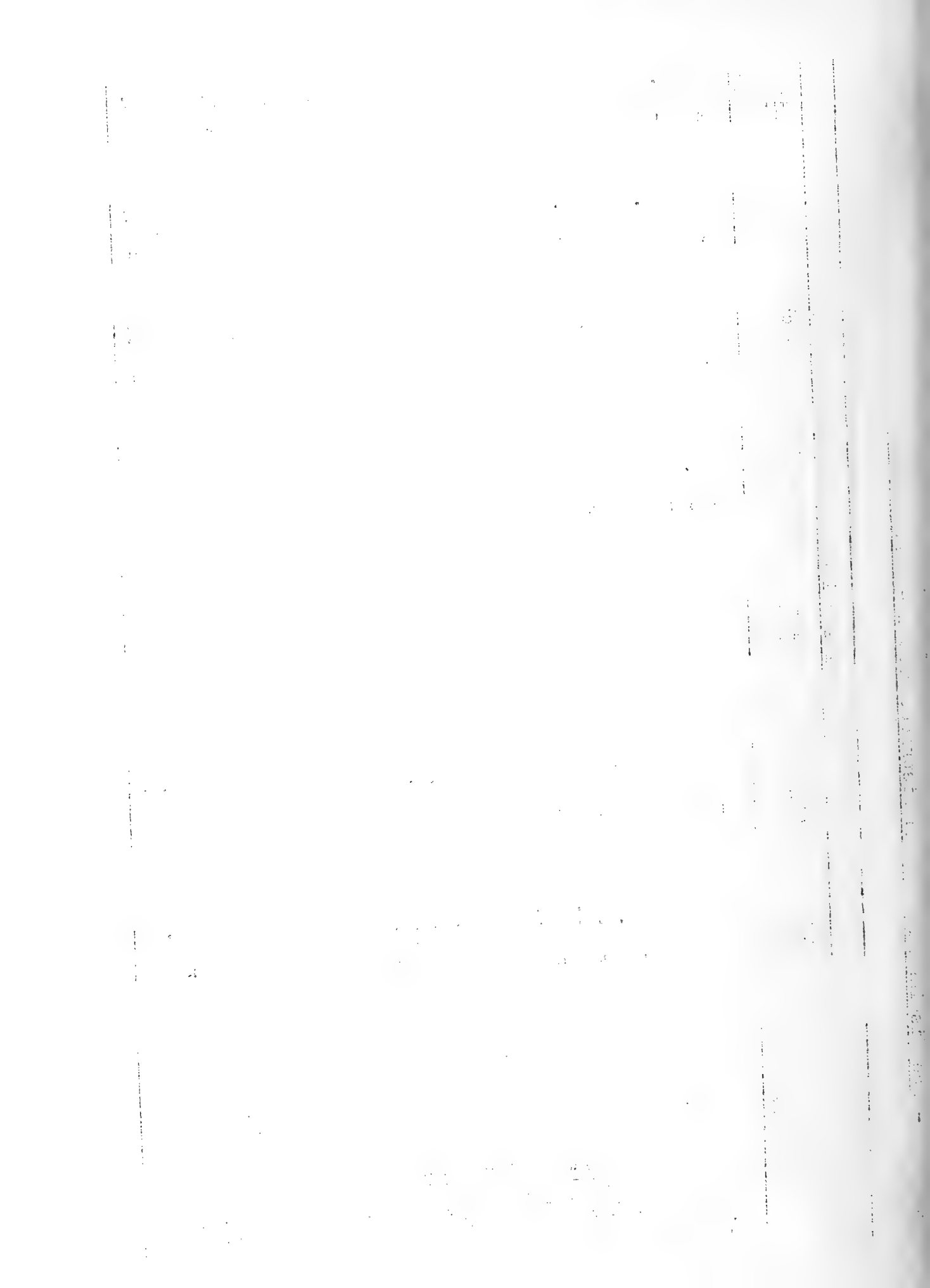
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TABLE I - Ice Fishing Parry Sound District, Jan. 1 - April 1, 1959.

Waters	Fishing Pressure %	Fishing Hours /Angler	Average # Fish /Angler	Average # Lake Trout /Angler	Average # Pike /Angler	Average # Whitefish /Angler	Average # Perch /Angler	Average # Smelt /Angler	Average # Ling /Angler
Lake Joseph	5.5	4.5	0.5	0.1	0	0.3	0.1	0.1	0.1
Lake Muskoka	4.5	4.0	0.3	0.2	0	0.1	0	0	0
Lake of Bays	9.1	3.0	0.7	0.5	0	0.1	0	0	0.2
Mary Lake	5.2	2.9	0.7	0.6	0	0	0	0.1	0
Vernon Lake	2.4	3.3	0.3	0.3	0	0	0	0	0
Fairy Lake	2.7	2.0	2.5	0.3	0	0	2.2	0	0
Portage Lake	3.9	3.2	0.2	0.1	0	0.1	0.1	0	0
Star Lake	6.7	3.8	0.4	0	0	0	0.2	0.2	0
Blue Lake	3.5	4.9	0.2	0.2	0	0	0	0	0
Lorimer Lake	4.4	3.4	0.4	0.4	0	0	0	0	0
Trout L. (Burpee)	4.2	3.0	2.9	2.9	0	0	0	0	0
Wah Wash Kesh L.	0.2	0.7	0	0	0	0	0	0	0
Whitefish Lake	1.7	5.0	0.1	0.1	0	0	0	0	0
Grass Lake	1.9	3.3	1.4	1.4	0	0	0	0	0
Horn Lake	1.3	1.9	0.4	0.4	0	0	0	0	0
Loon Lake	0.8	3.0	1.7	1.7	0	0	0	0	0
Schamernhorn Lake	1.4	2.8	0.2	0.2	0	0	0	0	0
Skeleton Lake	0.9	4.0	0	0	0	0	0	0	0
Horseshoe Lake	0.6	2.7	0	0	0	0	0	0	0
North Lake	4.8	2.0	0	0	0	0	0	0	0
Widgeon Lake	2.4	3.0	0	0	0	0	0	0	0
Sand Lake	1.4	2.0	0.1	0.1	0	0	0	0	0
Long Lake	2.8	3.1	1.5	1.5	0	0	0	0	0
Georgian Bay	1.6	1.5	0.8	0	0	0	0.8	0	0
Lake Nipissing	14.8	3.7	0.5	0	0.4	0.1	0.1	0	0.1
Barton Lake	4.0	2.5	0.6	0	0.6	0	0	0	0
Bains Lake	5.2	2.9	0.2	0	0.2	0	0	0	0
Bernard Lake	1.8	1.4	0.8	0.4	0	0.4	0	0	0
All Waters	100	3.0	0.6	0.4	0.1	0.1	0.1	0.1	0.1



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1958

Results of Census

The majority of the creel census data was gathered on weekends and on the mid-week half holiday when larger numbers of anglers would be out. An estimate by the officers places the number of anglers checked at only 20% of the total. However the figures we have should be a good indication of the fishing throughout the district. All anglers checked were most co-operative and several maintained census records of their own and turned them in at the end of their fishing season. Lack of proper understanding of a census made some of these volunteer records of little value as the angler only recorded his successful trips. Infractions of the Fisheries Act were at a minimum. Of the total number of anglers checked, 15 were convicted for fishing with more than two lines and two were convicted for fishing in closed waters.

Table I shows that Lake Nipissing was the most heavily fished lake. The main species sought in this water was pike. Two other lakes also produced pike fishing and of these Barton Lake was the best producer. The remaining 25 waters were fished for Lake Trout chiefly, with other species caught incidentally. Of these 25 waters, Lake of Bays was most heavily fished but Trout Lake in Burpee Township produced most fish per angler. As indicated several lakes produced no fish at all.

Table II shows that Fairy Lake produced most fish per hour, but a large portion of these were perch. Trout Lake is a close second and its production was all Lake Trout.

March was the most popular period for fishing but the returns per hour of effort expended were better in February and January as shown in Table III.

The average length of Lake Trout caught was 14.6 inches.

Conclusion

1. Winter fishing pressure in 1959 was below normal with few fish being taken. Even in a normal year winter fishing is only a small fraction of summer angling.
2. Lake Trout is the most sought after species during winter months. More use should be made of our available whitefish supply.
3. Winter fishing in the Parry Sound district this year will have a very negligible effect on the availability of fish to summer anglers.

Acknowledgments

Many thanks are due to all Conservation Officers of this District whose efforts made possible the creel census records used in this report.

The first part of the report deals with the general situation of the country. It is a very interesting and detailed account of the various aspects of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's development.

The second part of the report deals with the economic situation of the country. It is a very interesting and detailed account of the various aspects of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's economic development.

The third part of the report deals with the social situation of the country. It is a very interesting and detailed account of the various aspects of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's social development.

The fourth part of the report deals with the political situation of the country. It is a very interesting and detailed account of the various aspects of the country's political development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's political development.

Conclusion

1. The country has made great progress in the past few years. The economy is growing and the social situation is improving. The political situation is also becoming more stable.
2. There are still many problems that need to be solved. The country needs to continue to reform and to improve its institutions. The government needs to be more transparent and accountable.
3. The country has a bright future. If the government continues to reform and to improve its institutions, the country will become a more developed and more stable country.

References

The author has consulted a number of sources in the preparation of this report. These sources are listed in the references section. The author is grateful to the following individuals and organizations for their assistance and support:

