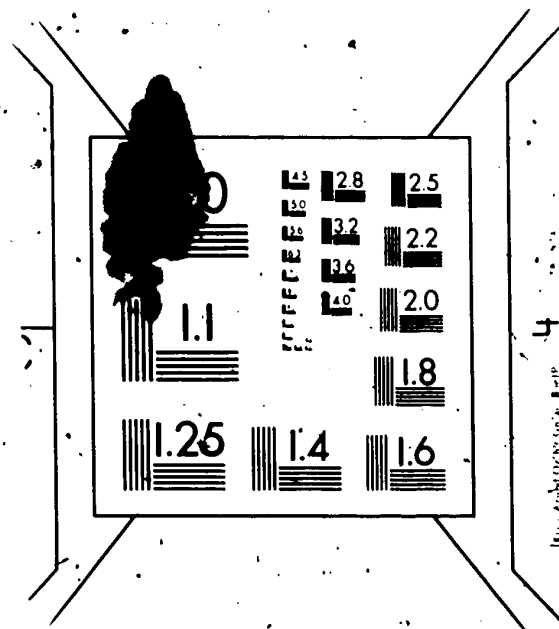


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Title

A study of the commercial fishery of Great Slave Lake, N.W.T.
during the winter season of 1951-52

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INTRODUCTION

During the winter of 1951-52, the commercial fishery of Great Slave Lake was again under observation by Fisheries Research Board personnel. All the data were collected by the author and R. M. Hanson.

This paper deals only with the lake trout, Cristivomer namaycush and lake whitefish, Coregonus clupeaformis. Some inconnu, Stenodus laucichthys mackenzi; northern pike, Esox lucius; yellow walleye, Stizostedion v. vitreum; longnose sucker, Catostomus catostomus and cisco Leucichthys spp. were also marketed.

Fewer numbers of fishermen were present than for the previous winter. One hundred cabooses housed approximately two hundred and fifty fishermen for the season.

Most of the fish freighting was done by bombardier of which there were 45 in operation. Four aircraft were used for freighting by various companies. These machines flew fish from the North and East Arms of the lake.

ACKNOWLEDGEMENTS

We wish to thank the fishermen and the fish companies for their complete co-operation. Without this our study would be most difficult. We would also like to thank the bombardier operators and members of the Department of Fisheries for their help with our mechanical difficulties.

SIZE COMPOSITION OF THE CATCH

Trout and whitefish were taken at random from the catch and weighed individually. These samples are considered representative of the respective statistical areas. Due to economic reasons, as was mentioned in the previous report, the fishermen are not scattered over an area but tend to group together. This makes the weight samples less representative of the whole area.

Table I and III show average weights and the standard errors of lake trout and whitefish respectively, while Tables II and IV are the frequency distribution of these weights.

Area G was sampled for the first time during a winter study. It showed no appreciable difference in average weights of lake trout from summer samples. Samples from Area E however, showed a smaller average size of lake trout than is normally found during summer operations. The samples were small and from the south corner of the statistical area. Other trout weights from Areas A, D and L show no difference in average weight from previous winter studies.

Whitefish from Area A had a smaller average weight than all previous summer and winter samples showed. This appears to be a result of the fishery. All other areas show no consistent change in average weight of whitefish.

GATCH

Data from the fish companies' record books supplied us with information concerning total catches of lake trout and whitefish. This may be found in Table IV.

The estimated proportions taken in the various areas are as follows: Area A--29 per cent; Area B--less than 1 per cent; Area C--13 per cent; Area D--35 per cent; Area E--7 per cent; Area F and G--2 per cent; Area K--12 per cent; Area L--1 per cent.

FISHING EFFORT AND AVAILABILITY

Mechanical difficulties with the bombardier during the month of January prevented us from making trips out on the lake to distribute catch forms to the fishermen. Some forms however, were sent out with bombardier operators. The returns were few and were not considered enough to warrant analysis. Information received from fishermen showed the availability was higher during December and January than during the rest of the season. This has been the usual case for previous winters.

SUMMARY

Average size of whitefish in Area A was less than any previous summer or winter.

Table I: The average size of lake trout in pounds round weight and its standard error in samples taken at random from the fish landed by commercial fishermen from Great Slave Lake during the winter season 1951-52. The number of fish in each sample is shown in brackets.

Area	January 16-31	February 1-15	February 16-29
A	$\frac{5.1 \pm 0.2}{(86)}$	$\frac{6.6 \pm 0.3}{(408)}$	$\frac{5.3 \pm 0.2}{(527)}$
D	$\frac{7.8 \pm 0.5}{(152)}$	$\frac{5.9 \pm 0.4}{(200)}$	$\frac{7.6 \pm 0.5}{(269)}$
E	-	$\frac{5.7 \pm 0.6}{(32)}$	$\frac{6.0 \pm 0.3}{(87)}$
G	-	-	$\frac{7.8 \pm 0.4}{(107)}$
L	-	$\frac{12.3 \pm 1.3}{(14)}$	$\frac{6.3 \pm 0.2}{(103)}$

Table II. The frequency distribution of round weights of lake trout from samples taken at random of the fish landed by commercial fishermen of Great Slave Lake during the winter season of 1952.

Wt. in lbs.	Fishing areas										
	Area A		Area D			Area E		Area G	Area L		
	Jan. 16-31	Feb. 1-15	Feb. 16-29	Jan. 16-31	Feb. 1-15	Feb. 16-29	Feb. 1-15	Feb. 16-29	Feb. 16-29	Feb. 1-15	Feb. 16-29
1	1	0	19	5	13	9	0	0	2	0	1
2	3	27	53	9	40	35	3	3	1	0	3
3	12	37	88	8	26	34	0	6	1	0	16
4	17	78	126	21	16	38	3	16	13	0	33
5	29	90	89	27	29	44	4	24	15	1	15
6	9	57	44	22	21	17	6	13	16	0	6
7	6	35	34	12	14	9	3	9	15	1	6
8	5	14	17	14	9	16	3	7	9	0	3
9	1	13	9	4	5	13	2	5	9	3	3
10	1	13	10	3	8	4	0	0	5	1	2
11	0	3	10	1	1	9	4	0	4	1	2
12	0	6	4	3	2	2	-	1	4	1	1
13	1	6	3	2	1	2	-	0	3	2	4
14	0	1	2	0	2	1	-	1	4	1	2
15	1	0	0	3	0	3	-	0	3	0	1
16	-	4	1	1	0	2	-	0	0	0	0
17	-	3	1	2	1	4	-	0	0	2	1
18	-	0	4	1	2	2	-	0	1	0	1
19	-	3	3	3	1	0	-	0	0	0	0
20	-	4	2	2	1	1	-	0	0	0	0
21	-	2	2	0	2	2	-	0	1	0	1
22	-	1	1	3	0	6	-	1	0	0	0
23	-	1	2	1	0	0	-	1	0	0	1
24	-	1	1	0	0	1	-	-	0	0	0
25	-	0	0	1	0	1	-	-	0	0	0
26	-	1	1	0	2	0	-	-	0	1	0
27	-	1	1	0	1	2	-	-	0	-	0
28	-	2	-	1	1	4	-	-	1	-	0
29	-	1	-	0	0	1	-	-	-	-	0
30	-	2	-	0	1	0	-	-	-	-	0
31	-	0	-	0	0	3	-	-	-	-	0
32	-	0	-	2	0	0	-	-	-	-	0
33	-	1	-	1	0	0	-	-	-	-	1
34	-	0	-	-	0	0	-	-	-	-	-
35	-	0	-	-	1	1	-	-	-	-	-
36	-	1	-	-	-	0	-	-	-	-	-
41	-	-	-	-	-	1	-	-	-	-	-
50	-	-	-	-	-	1	-	-	-	-	-
Totals	86	408	527	152	200	269	32	87	107	14	103

Table III. The average size of whitefish in pounds round weight and its standard error in samples taken at random, from the fish landed by commercial fishermen from Great Slave Lake during the winter season 1951-1952. The number of fish in each sample is shown in brackets.

Area	January 16-31	February 1-15	February 16-29
A	$\frac{2.2 \pm .01}{(332)}$	$\frac{2.3 \pm .01}{(645)}$	$\frac{2.1 \pm .01}{(758)}$
C	$\frac{2.4 \pm .01}{(151)}$	$\frac{2.5 \pm .02}{(80)}$	$\frac{2.2 \pm .06}{(89)}$
D	$\frac{2.3 \pm .02}{(531)}$	$\frac{2.3 \pm .02}{(423)}$	$\frac{2.1 \pm .02}{(563)}$
E	-	$\frac{2.6 \pm .05}{(149)}$	$\frac{2.1 \pm .19}{(65)}$
G	-	-	$\frac{2.6 \pm .03}{(468)}$
L	-	$\frac{3.0 \pm .11}{(48)}$	$\frac{2.6 \pm .08}{(53)}$

Table IV. (Cont'd).

Wt. in lbs.	Fishing areas				
	Area E		Area G	Area L	
	Feb. 1-15	Feb. 16-29	Feb. 16-29	Feb. 1-15	Feb. 16-29
$\frac{3}{4}$	0	0	0	0	0
1	0	1	0	0	1
$1\frac{1}{4}$	1	2	7	0	0
$1\frac{1}{2}$	0	5	13	1	0
$1\frac{3}{4}$	9	14	51	2	1
2	24	19	59	2	10
$2\frac{1}{4}$	31	16	81	4	13
$2\frac{1}{2}$	34	0	67	8	6
$2\frac{3}{4}$	17	4	56	7	6
3	10	0	40	5	6
$3\frac{1}{4}$	7	2	35	4	5
$3\frac{1}{2}$	5	1	20	3	3
$3\frac{3}{4}$	4	1	20	7	1
4	2	-	11	2	1
$4\frac{1}{4}$	1	-	3	0	-
$4\frac{1}{2}$	3	-	3	2	-
$4\frac{3}{4}$	1	-	1	0	-
5	-	-	0	0	-
$5\frac{1}{4}$	-	-	0	1	-
$5\frac{1}{2}$	-	-	0	-	-
$5\frac{3}{4}$	-	-	1	-	-
6	-	-	-	-	-
$6\frac{1}{4}$	-	-	-	-	-
$6\frac{1}{2}$	-	-	-	-	-

Table V. Estimated catches in calculated round weights taken by the commercial fishery in Great Slave Lake during the winter season of 1951-1952.

	Estimated total catch in thousands of pounds
Lake trout.....	502
Whitefish.....	2,039
Combined.....	2,541

END

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03

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FIN