

The Age Composition, Lengths, Weights, and Sex Ratios  
of Cut-throat Caught in Gill Nets at Lakelse Lake  
from the Fall of 1952 to the Fall of 1954.

A standard gill-netting program was begun in October 1952 to obtain information on seasonal and annual variations in the composition, magnitude and diet of the various fish populations in Lakelse Lake.

The adequacy with which the gill netting samples the stocks of fish is of prime importance. If the netting samples the population in a fairly constant manner from year to year, then it is probable that it is sufficiently adequate to measure any variations in the fish populations which may occur at any time.

Of the species of fish under study, the piscivorous fish have received most of the attention so far. This report deals explicitly with the cut-throat trout, which is one of the important predator species at Lakelse. The age composition, mean lengths, weights, and sex ratios of cut-throat sampled by the gill nets during the two year period are discussed.

Seasonal and Annual Age Composition of Cut-throat  
in the Gill Net Catches.

In general the seasonal and annual representation of the age groups of trout in the catches over the two year period have been fairly uniform (Graph I). This suggests that the gill netting sampled the population consistently even though there were seasonal and annual variations in the growth of the trout (Graph 2).

Mean Lengths of Cut-throat in the Gill Net Catches.

The mean sizes of the cut-throat of each age group are given in Graph 2. The mean lengths of the trout in the catches were always smaller in the spring than in the fall. The growth of the trout throughout the summer probably accounts for this difference. There have also been annual variations in the mean lengths of the trout caught. In general the mean sizes of the trout have increased over the two year period.

In Table 3 the mean lengths of male and female trout of each age class in the catches of each gill netting series are given. The mean lengths of males of all ages caught in the nets in the spring of 1953 were greater than average lengths of the females. (Range .67 cm. - 1.76 cm. greater.) In the spring netting of 1954 the mean lengths of females with the exception of three year olds were greater (range 1.25 cm. - 5.35 cm.). No consistent differences between the mean lengths of males and females were found in the catches of the gill nets in the fall of 1954.

Table 3 also gives the mean weights in grams and the coefficient of condition factor  $K$ , for each age group. There do not appear to be any definite relationships between the  $K$  factor and sex, age or season.

There has been an increase in the mean weights of the trout caught throughout the two year period which may be expected with an increase in the mean lengths. Males of all ages were heavier than females in gill net catches in the spring of 1953, with differences in weight ranging from 9.7 - 39.2 grams. The opposite situation was the case in the catches in the spring of 1954, with females weighing from 7.6 - 38.6 grams more than the males. In the fall of 1954, males were heavier than females with the exception of four year old fish.

#### Sex Ratios of Cut-throat in the Gill Net Catches.

The sex ratios of the trout of each age class represented in the gill nets are shown in table 2. In most cases the females were predominant in each age group. This has also been found to be the situation for the older age groups of trout represented in the anglers catches from the <sup>lake</sup> ~~total~~ over a four year period.

FALL 1952

SPRING 1953

FALL 1953

WINTER 1954

SPRING 1954

FALL 1954

I II III IV V VI I II III IV V VI I II III IV V VI I II III IV V VI I II III IV V VI

THE AGE COMPOSITION OF CUT-THROAT IN GILL NET  
AND CASEL CENSUS CATCHES AT LAKELESE LAKEAGE COMB. NUMBERS  
OF TROUT IN EACH MESH SIZE

1.5"

2.0"

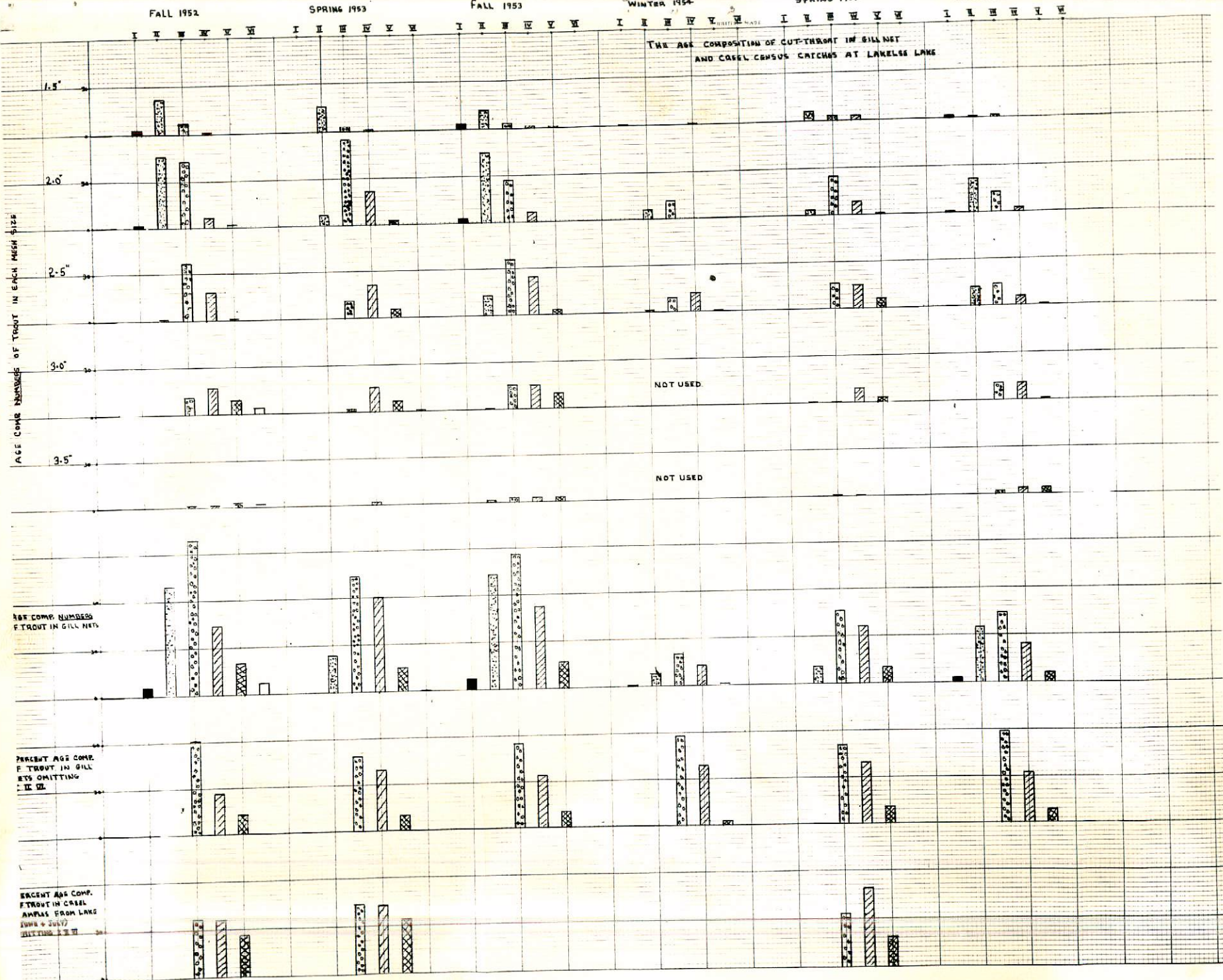
2.5"

3.0"

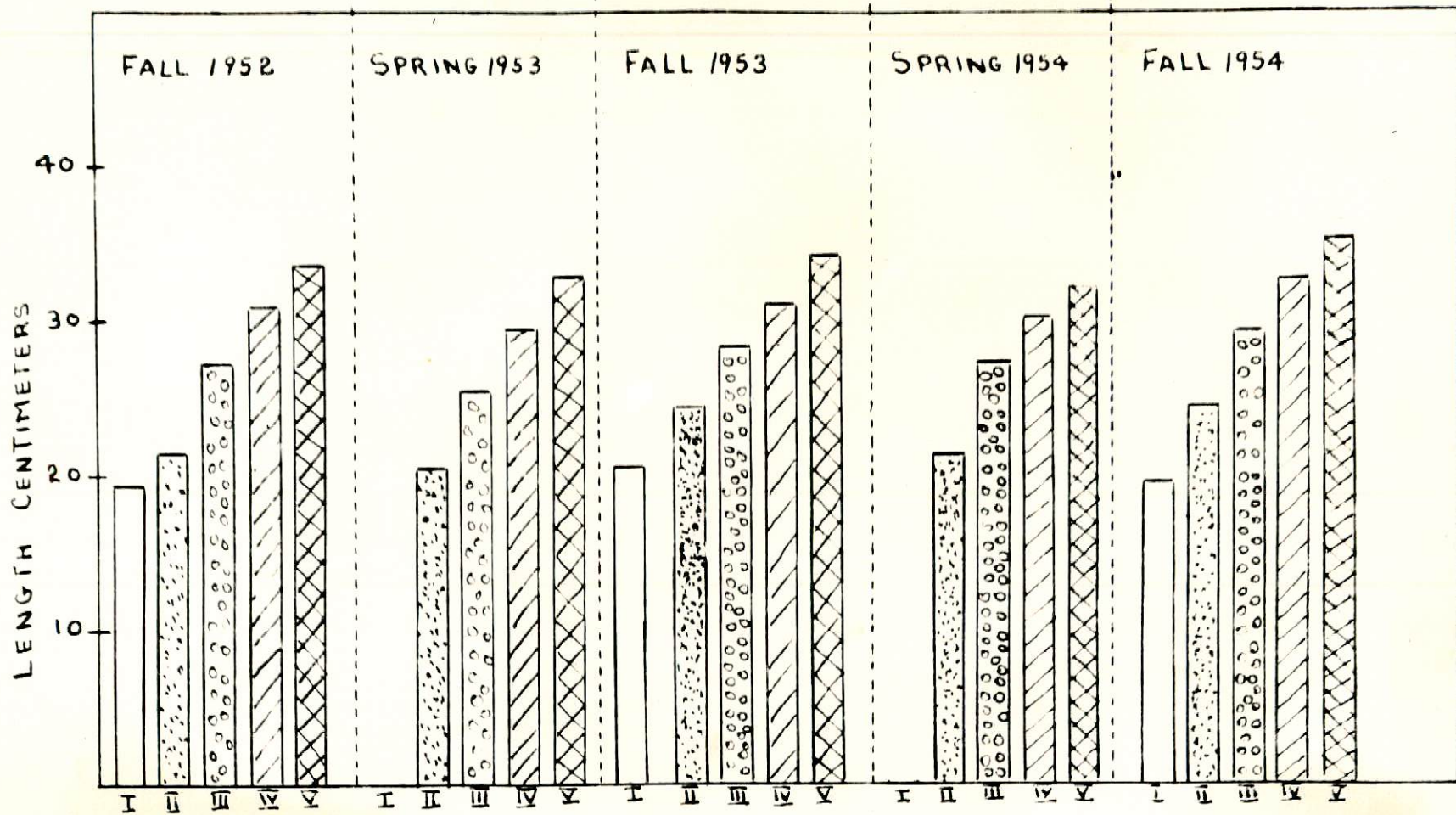
3.5"

NOT USED

NOT USED

AGE COMB. NUMBERS  
OF TROUT IN GILL NETSPERCENT AGE COMB.  
OF TROUT IN GILL  
NETS OMITTING  
I & IIPERCENT AGE COMB.  
OF TROUT IN CASEL  
AMPLAS FROM LAKE  
JUNE + JULY  
GILLING I & II

THE MEAN LENGTHS OF CUT-THROAT OF VARIOUS AGES  
IN THE CATCHES OF GILL NETS AT LAKEUSE FROM  
1952 - 1954



GROWTH OF DIFFERENT BROOD YEARS OF CUT-THROAT TROUT

	<u>1945</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
I River Creel									
Spr. Gill Net.									
Lake Creel									
Fall Gill Net.							5	7	3
							19.61	20.42	19.66
				16			3	1	
II R.C.				19.62			23.16	<del>23.95</del>	
Sg-n							23	11	
							20.22	<del>23.89</del>	
L.C.				70		21	14	11	
				21.52		19.75	22.42	<del>25.08</del>	
Fg-n						70	73	4	
						21.41	24.63	<del>25.04</del>	
III R.C.			87		46	60	59	35	
			26.98		23.50	26.89	27.45	<del>24.14</del>	
Sg-n						74	46		
						25.24	27.21		
L.C.			227		114	60	43		
			26.73		26.25	27.63	27.42		
Fg-n					49	86	43		
					27.29	28.12	29.2		
IV R.C.		49		70	59	47			
		29.00		27.40	29.35	29.30			
Sg-n					60	36			
					29.50	30.11			
L.C.		128		110	60	64			
		30.53		28.86	29.58	31.40			
Fg-n				44	52	24			
				30.96	31.01	32.41			
V R.C.	6		26	19	15				
	34.08		30.05	31.85	30.20				
Sg-n				15	10				
				32.84	32.15				
L.C.	15		36	24					
	34.86		31.55	34.08	32.54				
Fg-n			20	17	6				
			33.62	34.00	35.0				
IV R.C.		11		3					
		33.75		33.5					
Sg-n			1						
			33.7						
L.C.		16	4						
		33.97	36.0						
Fg-n		7							
		34.71							

The Sex Ratio of Cut-throat of various ages  
in the Gill Net Catches at Lakelse Lake.

	I		II		III		IV		V		VI	
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
G-F-52												
M	3		28	35	27	69	18	24	11	8	3	4
%			44.5	55.5	28.2	71.8	42.9	57.1	57.9	42.1	42.9	57.1
G-S-53												
M			8	11	29	43	28	30	9	7	1	
%			42.11	57.89	40.27	59.72	48.27	51.72	56.25	43.75		
G-F-53												
M	2	4	29	47	31	61	24	28	3	12		
%	33.0	66.0	38.2	61.8	33.6	66.3	46.2	53.8	20.0	80.0		
G-S-54												
M			3	6	17	25	11	22	2	6		
%			33.3	66.6	40.5	59.5	33.0	66.0	25.0	75.0		
G-F-54												
M	3	3	10	25	15	28	9	14	4	4		
%	50.0	50.0	28.57	71.42	34.88	65.11	39.13	60.86	50.0	50.0		

Mean Lengths, Weights and K Values of ♂ and ♀ Cut-throat  
of various ages in the catches of gill nets at Lakelse Lake.

	G - S - 53			G - S - 54			G - F - 54		
II	L	W	K	L	W	K	L	W	K
♂	216.7	107	<u>1.032</u>	215.0	98.5	<u>.990</u>	243.1	153.8	<u>1.071</u>
♀	199.1	85.6	<u>1.086</u>	227.5	125.8	1.075	243.2	151	1.052
III ♂	258.7	185.23	<u>1.067</u>	270.4	213.6	<u>1.085</u>	298.6	304.8	<u>1.140</u>
♀	252.0	169	1.056	271.4	221.2	1.110	293.3	294.5	1.170
IV ♂	300.2	301.9	<u>1.118</u>	292.2	284.2	<u>1.141</u>	304.8	339.5	<u>1.196</u>
♀	290.7	262.7	1.066	303.6	297.7	1.059	335.7	426.0	1.122
V ♂	331.2	323.4	<u>.8919</u>	322.5	324.1	<u>.970</u>	-	-	-
♀	321.5	359.7	1.087	376.0	362.7	.682	347	478.2	1.144

Page



CUT-THROAT GILL NETTING - FALL 1952

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>
1 1/2" Mesh						
Number	3	22	7	1		
Mean Length	18.00	16.61	22.51	32.5		
2" Mesh						
Number	2	46	43	7	2	
Mean Length	22.0	23.47	25.55	27.42	30.5	
2 1/2" Mesh						
Number		2	37	18	6	1
Mean Length		26.75	28.70	30.13	33.25	31.0
3" Mesh						
Number			11	17	9	4
Mean Length			31.50	32.82	33.44	35.37
3 1/2" Mesh						
Number			1	1	3	2
Mean Length			37.0	37.5	37	35.25
<u>Summary</u> Number	5	70	99	44	20	7
%			60.73	26.99	12.26	
Mean Length	19.61	21.41	27.29	30.96	33.62	34.71

CUT-THROAT GILL NETTING - SPRING 1953

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>
1 1/2" Mesh						
Number		16	3	1		
Mean Length		18.71	21.5	31.3		
2" Mesh						
Number		7	56	22	3	
Mean Length		23.65	24.65	26.41	31.5	
2 1/2" Mesh						
Number			11	21	5	
Mean Length			28.4	29.82	31.14	
3" Mesh						
Number			2	16	7	1
Mean Length			33.5	33.45	34.6	33.7
3 1/2" Mesh						
Number			2			
Mean Length			21.75			
<u>Summary</u>						
Number		23	74	60	15	1
%			49.66	40.26	10.06	
Mean Length		20.22	25.24	29.50	32.84	33.7

CUT-THROAT GILL NETTING - FALL 1953

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>
1 1/2" Mesh						
Number	4	12	4	2	1	
Mean Length	18.62	20.72	27.0	33.25	36.5	
2" Mesh						
Number	3	45	27	6		
Mean Length	22.83	24.16	26.33	27.58		
2 1/2" Mesh						
Number		13	35	25	3	
Mean Length		28.19	29.15	30.26	32.0	
3" Mesh						
Number		1	17	16	10	
Mean Length		31.0	32.11	32.28	33.15	
3 1/2" Mesh						
Number		2	3	3	3	
Mean Length		32.25	33.33	36.0	38.0	
<u>Summary</u>						
Number	7	73	86	52	17	
%			55.48	33.54	10.96	
Mean Length	20.42	24.63	28.12	31.01	34.0	

CUT-THROAT GILL NETTING - WINTER 1954

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>
1 1/2" Mesh						
Number	1			1		
Mean Length	16.0			27.0		
2.0" Mesh						
Number		6	11			
Mean Length		22.83	24.36			
2 1/2" Mesh						
Number		2	9	12	1	
Mean Length		25.0	27.55	30.16	35	
<u>Summary</u>						
Number	1	8	20	13	1	
%			58.82	38.23	2.94	
Mean Length	16.0	23.37	25.80	29.92	35.0	

CUT-THROAT GILL NETTING - SPRING 1954

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>
1 1/2" Mesh						
Number		6	3	3		
Mean Length		18.08	22.3	28.8		
2" Mesh						
Number		4	25	8	1	
Mean Length		24.75	25.31	28.12	28.5	
2 1/2" Mesh						
Number			17	15	6	
Mean Length			28.90	29.86	30.75	
3" Mesh						
Number		1	1	9	3	
Mean Length		24.50	35.0	32.38	36.16	
3 1/2" Mesh						
Number			1	1		
Mean Length			26.0	33.0		
<u>Summary</u>						
Number		11	46	36	10	
%			50.0	39.13	10.86	
Mean Length		21.09	27.21	30.11	32.15	

CUT-THROAT GILL NETTING - FALL 1954

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>
1 1/2" Mesh						
Number	2	1	2			
Mean Length	19.25	22.8	32.5			
2" Mesh						
Number	1	22	14	3		
Mean Length	20.5	23.88	26.37	31.96		
2 1/2" Mesh						
Number		12	14	6	1	
Mean Length		24.71	28.07	28.48	32.0	
3" Mesh						
Number			11	11	1	
Mean Length			32.85	33.65	38.3	
3 1/2" Mesh						
Number			2	4	4	
Mean Length			33.5	35.22	34.92	
<u>Summary</u>						
Number	3	35	43	24	6	
%			58.90	32.87	8.21	
Mean Length	19.66	24.14	29.20	32.41	35.0	