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Portuguese Research Report for 1989

by

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A. Status of the Fisheries

The portuguese nominal catches of NAFO recorded an overall increase of 30% from 1988 to 89. This is due to the increase observed in the reported cod catches in Div. 3L (270%), and in the redfish catches in Div. 3M (98%). The 1989 nominal catches by gear and division are presented in Table I.

The portuguese fleet operating during 1989 in the NAFO regulatory area was composed of 32 stern and side trawlers operating troughout the year, and 11 gillnetters fishing between April and November. The fishing effort of trawlers was almost entirely spent in Div. 3L and 3M (97%), the same situation occuring to fishing effort of gillnetters, although in a lesser scale (71%).

The fishing effort of the portuguese fleet is presented in Table II. Fishing hours and the sum of the number of nets per fishing day was estimated from the fishing days reported each month by the trawl and the gillnet fleet, using data available through direct observation.

B. Portuguese Annual Sampling Program.

1. Introduction.

Catch and effort data were directly collected on board of two stern trawlers operating in Div. 3L and 3M, one from January to March and the other from May to August, as well as on board of a gillnetter operating in Div. 3N, from April till September.

Length compositions of the main species in the respective catches, mean weights and sex ratios by month and division, and cod age compositions have beem made available through the biological sampling carried out simoultaneously. The intensity of sampling during 1989 is presented in Table III.

2. Catch and effort data.

For the two stern trawlers surveyed, greenland halibut and redfish where the target species in Div. 3L. In Div. 3M the redfish fishery recorded a by-catch of greenland halibut (turbot) or cod depending on the depth range where the majority of the hauls was made in each month, below or above the 400m line respectively.

For the months where data are available in Div. 3M, for fishing days above and below the 400m line, higher redfish cpue's are always observed at lower depths, together with a mean by-catch of cod around 40% .

Im Div. 3N cod was the target species for the gillnetter sampled, with american plaice as the main species in the by-catch. Observed catches of american plaice and yellowtail flounder have been used to split the nominal catches of american plaice from gillnets in Div. 3N, by these two species. The weighted mean rate of yellowtail flounder in the gillnet flatfish catches in Div. 3N is 14.5% .

Directed effort for each target species, cpue's in weight and by-catch rates by division and month are presented in Table IV-A and IV-B. Discrimination of the 3M redfish fishery by depth zone and respective by-catches of cod are presented in Table V-A and V-B. Finnally, monthly cpue's in numbers appeared in Table VI for males and females of greenland halibut (turbot) and redfish from Div.3L, and for the redfish of Div.3M.

3. Biological data.

Length compositions amd mean weigths in the stern trawl and gillnet catches for cod (Div. 3M and 3N), redfish (Div. 3M, 3L and 3N), greenland halibut (Div. 3L), american plaice (Div. 3N and 3M) and yellowtail flounder (Div. 3N) are presented in Table VII to XI. In Fig. 1 to 7 length compositions were plotted only for quarters and total annual.

Age compositions and mean weights at age of the cod catches are presented in Table XII-A (stern trawl, Div. 3M) and XII-B (gillnets, Div. 3N), as well as in Fig. 1 and 2.

The cod by-catches in the 3M redfish fishery are basicaly supported by the 1984, 85 and 86 year classes, with the 4 age group predominant.

As for the 3N gillnet cod fishery, more than 50% of the individuals came from the 1980 and 79 year classes, with the bulk of the age structure given by age groups 9 and olders.

Flatfish gillnet catches in Div. 3N records average lengths of 36.9 cm and 47.9 cm for males and females of american plaice, together with average lengths of 34.0 cm and 39.0 cm for males and females of yellowtail flounder.

TABLE I : PORTUGUESE NOMINAL CATCHES (mt) IN NAFO AREA, 1989

SPECIES	DIVISION 3L		3N		3M		3O		TOTAL 1989	TOTAL 1988
	OT	GNS	OT	GNS	OT	GNS	OT	GNS		
Cod	21808.9	1238	166.6	2.2	239.9	555.5	0	117.7	24129	12931
Redfish	5855.7	353.5	12976.6	35.5	436.6	0	12.1	0	18870	17072
American plaice(1)	460.3	22.3	1218.4	20.9	60.5	31	0	7.6	1821	1791
Yellowtail(2)	0	0	0	0	0	5.1	0	0	5	
Witch flounder	7.1	0	3.1	0	5.4	0	0	0	16	12
Greenland halibut	3155.8	12.4	386	40.2	19.1	0	0	0	3614	4194
Roundnose grenadier	251.1	0	27.9	0	10.5	0	0	0	290	914
Skates	176.1	22.6	206.8	0.7	243	9.9	0	3.4	663	1097
TOTAL	30915	1648.8	14985.4	99.5	1015	601.5	12.1	128.7	49406	38011

(1) Including yellowtail catches (except for div.3N/gillnets).The weighted mean rate in the gillnet catches of plaice plus yellowtail sampled by the INIP in div.3N, from May till September 1989,is 14.5%.
(2) Yellowtail 3N catches from gillnets estimated from the catch composition by species of the gillnetter sampled by the INIP.

TABLE II : PORTUGUESE EFFORT IN FISHING DAYS AND FISHING HOURS (TRAWL) OR NUMBER OF NETS (GILLNETS), IN NAFO AREA IN 1989.

MONTH	DIVISION 3L OT DAYS	3L OT HOURS	3L GNS DAYS	3L GNS NETS	3N OT DAYS	3N OT HOURS	3N GNS DAYS	3N GNS NETS	3M OT DAYS	3M OT HOURS	3M GNS DAYS	3M GNS NETS	3O OT DAYS	3O OT HOURS	3O GNS DAYS	3O GNS NETS	TOTAL 1989 OT DAYS	TOTAL 1989 OT HOURS	TOTAL 1989 GNS DAYS	TOTAL 1989 GNS NETS	TOTAL 1988 OT DAYS	TOTAL 1988 OT HOURS	TOTAL 1988 GNS DAYS	TOTAL 1988 GNS NETS
JAN.	145	1905			206	2707											351	4612			314			
FEB.	160	2328			188	2735											348	5063			211			
MAR.	78	1080			290	4014			11	152			3	42			382	5287			219			
APR.					361	4845			14	188	6	1760					375	5033	6	1760	411			
MAY	173	2252	60	20748	210	2734	52	17982							15	5187	393	4987	127	43917	301			
JUN.	339	4899	63	24709	154	2225	21	8236	8	116	42	16472			35	13727	501	7239	161	63144	428		109	
JUL.	239	3791	38	15211	62	983	55	22017							19	7606	301	4774	112	44834	266		217	
AUG.	159	2720	98	40788	19	326	9	3746			69	26718					178	3054	176	73251	238		90	
SEP.	171	2965	36	13576	25	409	3	1131	23	376	8	3017			5	1886	219	3578	52	19609	252		70	
OCT.	290	4002	24	9257	51	704	12	4628	20	276							361	4982	36	13885	434			
NOV.	213	2939	19	7328	44	607	3	1157	13	179							270	3726	22	8485	393			
DEC.	163	2249			8	110			10	138							181	2498			336			
TOTAL	2130	31139	338	131616	1618	22399	155	58897	99	1425	125	49967	3	42	74	28405	3850	54833	692	258885	3793		486	

Note: Fishing hours and number of nets estimated from their monthly rates to fishing days observed in the stern trawlers and gillnetter sampled by the INIP.
Monthly effort of gillnetter is given by the sum of the number of nets per fishing day.

TABLE III : INTENSITY OF SAMPLING DURING 1989, BY SPECIES, DIVISION, GEAR AND MONTH.

SPECIES	DIVISION	GEAR	MONTH	No. OF SAMPLES	No.FISH MEASURED	No.FISH AGED
COD	3M	TRAWL	JAN.	5	1259	128
			MAR.	2	446	68
			MAY	12	3661	170
			JUN.	6	1681	114
			JUL.	22	6100	148
			AUG.	14	2107	119
	3N	GILLNETS	APR.	3	181	
			MAY	20	1559	112
			JUN.	25	2267	185
			JUL.	23	1991	235
			AUG.	15	1547	126
			SEP.	3	341	39
	3O	GILLNETS	MAY	1	25	
REDFISH	3L	TRAWL	FEB.	24	5282	
			MAR.	5	935	
			MAY	1	153	
			JUN.	3	439	
	3M	TRAWL	JAN.	43	10014	
			FEB.	13	3263	
			MAR	33	8025	
			MAY	11	2942	
			AUG.	21	4932	
	3N	TRAWL	JUN.	2	470	
AMERICAN PLAICE	3L	TRAWL	MAR.	1	70	
	3N	TRAWL	AUG.	1	96	
	3N	GILLNETS	APR.	3	135	
			MAY	22	2770	
			JUN.	25	2332	
			JUL.	21	1845	
			AUG.	14	965	
			SEP.	3	108	
YELLOWTAIL FLOUNDER	3N	GILLNETS	APR.	2	77	
			MAY	10	292	
			JUN.	25	951	
			JUL.	19	832	
			AUG.	11	385	
GREENLAND HALIBUT	3L	TRAWL	MAY	20	2611	
			JUN	54	5861	
			JUL.	31	3316	
			AUG.	11	1408	
GRENADIER	3L	TRAWL	MAY	2	230	

TABLE IV - A : Portuguese stern trawl fisheries (from 2 vessels sampled): directed effort, cpue and by-catch by month and division, for 1989.

DIVISION	MONTH	GEAR	TARGET SPECIES	DIRECTED EFFORT	FISHING DAYS	NUMBER HAULS	C.P.U.E. (ton/hour)	MAIN BY-CATCH SPECIES	MEAN BY-CATCH (%) MAIN SPECIES	TOTAL
3L	JAN.	OT6	TURBOT	15h	1	5	0,193	GRENADIER	39,4	40,7
3L	FEB.	OT6	TURBOT	90h	6	38	0,248	RED-FISH	42,0	63,3
3L	FEB.	OT6	RED-FISH	210h	14	85	0,414	TURBOT	25,0	45,2
3L	MAR.	OT6	TURBOT	35h	3	16	0,233	RED-FISH	39,7	60,9
3L	MAR.	OT6	RED-FISH	40h	4	18	0,288	TURBOT	32,1	49,5
3L	MAR.	OT6	SKATE	23h	2	11	0,337	TURBOT	12,0	36,1
3L	MAY	OT6	TURBOT	175h	12	62	0,531	GRENADIER	12,7	16,7
3L	JUN.	OT6	TURBOT	393h	25	130	0,622	RED-FISH	4,2	9,9
3L	JUN.	OT6	RED-FISH	4h	1	3	0,546	--	0,0	0,0
3L	JUL.	OT6	TURBOT	256h	17	80	0,645	GRENADIER	3,4	3,5
3L	AUG.	OT6	TURBOT	68h	4	21	0,684	GRENADIER	3,4	3,4
3M	JAN.	OT6	RED-FISH	313h	25	110	0,383	TURBOT	7,5	12,7
3M	FEB.	OT6	RED-FISH	105h	7	37	0,495	TURBOT	4,2	10,1
3M	MAR.	OT6	RED-FISH	255h	17	89	0,684	TURBOT	5,1	7,2
3M	MAY	OT6	RED-FISH	48h	5	22	1,485	COD	7,1	7,3
3M	JUN.	OT6	RED-FISH	41h	3	11	0,528	COD	33,2	35,5
3M	JUL.	OT6	RED-FISH	81h	5	27	0,438	COD	36,6	41,7
3M	AUG.	OT6	RED-FISH	207h	12	58	0,524	COD	38,9	43,9
3N	JUN.	OT6	SKATE	8h	1	4	0,354	RED-FISH	35,7	43,5

TABLE IV - B : Portuguese gillnet fishery (from one vessel sampled): directed effort, cpue and by-catch by month and division, for 1989.

DIVISION	MONTH	GEAR	TARGET SPECIES	DIRECTED EFFORT	FISHING DAYS	NUMBER SETS	C.P.U.E. (Kg/net/day)	MAIN BY-CATCH SPECIES	MEAN BY-CATCH (%) MAIN SPECIES	TOTAL
3N	APR.	GN6	COD	880n	3	3	9,0	PLAICE	1,7	4,8
3N	MAY	GN6	COD	7980n	23	23	7,5	PLAICE	8,6	14,5
3N	JUN.	GN6	COD	11767n	30	28	6,2	PLAICE	5,0	15,9
3N	JUL.	GN6	COD	12410n	31	27	4,9	WHITE HAKE	9,5	21,2
3N	AUG.	GN6	COD	8740n	21	17	5,6	PLAICE	2,7	8,9
3N	SEP.	GN6	COD	2640n	7	5	7,9	SKATE	2,8	5,0
3O	MAY	GN6	COD	320n	1	1	0,9	PLAICE	7,8	7,8

Note : (n)=sum number of nets per fishing day.

TABLE V-A : Portuguese red-fish stern trawl fishery (from 2 vessels sampled): directed effort, cpue and by-catch above and below the 400m depth line, by month and division, for 1989.

DIVISION	MONTH	GEAR	DEPTH	TARGET SPECIES	DIRECTED EFFORT	FISHING DAYS	NUMBER HAULS	C.P.U.E. (ton/hour)	MAIN BY-CATCH SPECIES	MEAN BY-CATCH (%) MAIN SPECIES	TOTAL
3L	FEB.	OT6	>400	RED-FISH	193h	13	78	0.425	TURBOT	25.60	44.10
3L	MAR.	OT6	<400	RED-FISH	4h	1	2	0.617	TURBOT	10.90	17.10
3L	MAR.	OT6	>400	RED-FISH	23h	2	10	0.300	TURBOT	38.80	56.85
3L	JUN.	OT6	>400	RED-FISH	4h	1	3	0.546	TURBOT	24.70	32.40
3M	JAN.	OT6	>400	RED-FISH	301h	24	106	0.393	TURBOT	7.50	12.10
3M	FEB.	OT6	>400	RED-FISH	105h	7	37	0.495	TURBOT	4.20	10.10
3M	MAR.	OT6	>400	RED-FISH	255h	17	89	0.684	TURBOT	5.10	7.20
3M	MAY	OT6	<400	RED-FISH	22h	2	7	1.377	COD	17.80	18.20
3M	MAY	OT6	>400	RED-FISH	26h	3	15	1.154	HALIBUT	0.05	0.13
3M	JUN.	OT6	<400	RED-FISH	36h	2	8	0.540	COD	49.90	53.30
3M	JUN.	OT6	>400	RED-FISH	5h	1	3	0.432	--	0.00	0.00
3M	JUL.	OT6	<400	RED-FISH	80h	5	26	0.445	COD	36.60	41.70
3M	AUG.	OT6	<400	RED-FISH	161h	9	41	0.502	COD	46.20	51.00

TABLE V-B: Portuguese red-fish stern trawl fishery (from 2 vessels sampled): mean by-catch (%) of cod, above and below the 400m depth line by month in Div. 3M, for 1989.

DEPTH / MONTH	JAN.	FEB.	MAR.	MAY	JUN.	JUL.	AUG.	MEAN(*)
< 400	---	---	---	17.80	49.85	36.70	46.24	40.16
> 400	0.56	0	0	0	0	---	---	0.50

Note (*) weigthed by the number of fishing days in each month.

TABLE VI : Portuguese stern trawl fisheries (from 2 vessels sampled): C.P.U.E.(ton/h),mean wheight (Kg) in the catch, sex ratio and C.P.U.E. in number for males , females and total , by month and division, for 1989.

DIVISION	TARGET SPECIES	MONTH	C.P.U.E. (ton/hour)	MEAN WEIGHT (Kg)	SEX RATIO (a)	C.P.U.E. (number/hour) males	females	total
3L	TURBOT	MAY	0.531	1.216	0.488	213	224	437
3L	TURBOT	JUN.	0.622	1.984	0.340	106	207	313
3L	TURBOT	JUL.	0.645	2.703	0.204	49	190	239
3L	TURBOT	AUG.	0.684	2.331	0.217	61	233	294
3L	RED-FISH	FEB.	0.414	0.616	0.516	347	326	673
3L	RED-FISH	MAR.	0.288	0.603	0.508	242	235	447
3L	RED-FISH	JUN.	0.546	0.678	0.494	398	408	806
3M	RED-FISH	JAN.	0.383	0.463	0.580	480	348	828
3M	RED-FISH	FEB.	0.495	0.452	0.524	574	521	1095
3M	RED-FISH	MAR.	0.684	0.408	0.592	993	684	1677
3M	RED-FISH	MAY	1.485	0.332	0.540	2415	2058	4473
3M	RED-FISH	JUN.	0.528	(0.332*)	(0.540*)	858	731	1558
3M	RED-FISH	JUL.	0.438	(0.393*)	(0.514*)	574	542	1116
3M	RED-FISH	AUG.	0.524	0.393	0.514	686	648	1334

(a) - number of males/total number.
(*) - assumed for the quater.

TABLE VII-A: COD, DIVISION 3M, 1989: length composition of the stern trawl catches.

LENGTH GROUP	JANUARY	MARCH	MAY	JUNE	JULY	AUGUST	1st QUARTER	2nd QUARTER	3rd QUARTER	TOTAL 1989	LENGTH GROUP
21	7.1	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.6	21
24	43.7	0.0	0.0	0.0	0.0	0.0	32.3	0.0	0.0	3.6	24
27	87.4	0.0	6.0	0.0	0.0	0.0	64.5	5.5	0.0	9.1	27
30	218.4	11.2	25.0	0.6	0.3	0.5	154.2	17.2	0.4	24.6	30
33	256.6	62.8	67.3	7.7	15.7	3.3	205.9	48.5	12.6	46.8	33
36	173.2	136.8	113.5	51.8	72.3	21.3	163.6	94.6	61.9	34.5	36
39	112.6	219.7	136.2	126.2	147.3	112.5	140.8	134.4	138.3	137.2	39
42	61.2	174.9	167.1	182.1	205.3	189.4	90.9	171.8	201.7	176.9	42
45	19.3	139.0	156.3	205.4	215.5	220.7	49.9	173.2	215.8	182.9	45
48	9.5	125.6	138.8	173.9	178.4	223.5	39.9	149.8	190.0	159.2	48
51	4.0	69.5	104.7	137.5	94.6	132.9	21.1	115.1	104.4	98.8	51
54	1.6	42.6	46.7	66.7	45.3	62.6	12.3	53.0	49.7	46.7	54
57	0.0	6.7	19.2	35.0	15.4	18.5	1.6	22.0	16.2	16.6	57
60	0.3	3.1	4.1	6.0	3.8	2.6	1.2	4.7	3.6	3.7	60
63	0.0	6.7	3.2	5.4	1.0	2.4	1.6	3.2	1.3	2.0	63
66	1.6	0.0	3.0	3.0	1.3	0.0	1.2	3.0	1.0	1.7	66
69	1.6	0.0	1.6	2.4	1.6	0.0	1.2	1.9	1.2	1.4	69
72	0.3	2.1	2.2	3.6	1.1	0.0	1.2	2.6	0.9	1.5	72
75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75
78	0.8	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.1	78
81	0.8	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.1	81
TOTAL	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	5	2	12	6	22	14	7	18	36	61	
No.F.MEASURED	1259	446	3639	1630	6090	2107	1705	5319	8025	15229	
MEAN LENGTH(mm)	348	435	443	458	455	468	371	451	458	446	
MEAN WEIGHT (g)	357	751	842	971	895	945	460	883	908	849	
DEPTH RANGE (m)	250-659	241-674	178-284	294-327	252-379	193-634	241-674	178-327	193-634	178-864	

TABLE VII-8: COD, DIVISION 3N, 1989: length composition of the gillnet catches.

LENGTH GROUP	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	2nd QUARTER	3rd QUARTER	TOTAL 1989	LENGTH GROUP
63	0.0	1.3	0.4	0.0	0.0	0.0	0.8	0.0	0.4	63
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66
69	0.0	0.0	0.0	0.5	1.3	0.0	0.0	0.6	0.4	69
72	0.0	0.0	0.0	4.0	2.6	2.9	0.0	3.4	1.7	72
75	0.0	1.9	3.7	9.0	14.9	5.9	2.3	11.1	6.6	75
78	0.0	3.2	8.0	14.6	23.3	2.9	5.8	17.0	11.3	78
81	0.0	8.4	12.8	30.7	23.3	11.7	10.6	26.1	18.2	81
84	5.7	17.5	23.0	46.7	36.9	49.9	20.1	43.1	31.4	84
87	5.7	29.4	62.0	59.8	53.7	23.5	46.5	54.2	50.3	87
90	0.0	53.7	83.7	112.6	61.4	49.9	68.3	86.7	77.4	90
93	28.4	117.5	123.6	126.5	89.9	73.3	117.1	107.3	112.3	93
96	17.0	126.1	142.7	131.2	104.3	52.8	130.7	113.7	122.3	96
99	85.2	137.0	129.4	120.1	113.8	99.9	130.4	115.0	122.8	99
102	96.6	121.5	121.4	108.0	112.5	86.0	120.4	108.1	114.3	102
105	108.0	103.4	82.4	72.4	93.8	79.2	91.7	81.3	86.7	105
108	153.4	81.4	67.3	56.3	86.0	66.0	76.9	73.0	74.5	108
111	125.0	61.4	43.4	34.7	64.0	73.3	54.0	49.8	51.9	111
114	79.5	56.3	33.2	25.6	40.1	99.7	44.2	37.9	41.1	114
117	119.3	28.4	26.1	19.6	28.5	70.4	31.2	27.6	29.4	117
120	102.3	25.2	18.2	14.1	23.9	61.6	24.6	22.2	23.4	120
123	34.1	14.2	12.0	5.5	15.5	46.9	13.8	13.2	13.5	123
126	28.4	9.7	3.5	3.0	3.9	14.7	7.0	4.4	5.7	126
129	11.4	2.6	2.7	1.5	3.9	5.9	3.0	2.6	2.9	129
132	0.0	0.0	0.0	1.0	1.3	5.9	0.0	1.5	0.9	132
135	0.0	0.6	0.9	0.5	0.0	2.9	0.9	0.5	0.6	135
138	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.1	138
TOTAL	1000	1000	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	3	20	25	23	15	3	48	41	89	
No.F.MEASURED	176	1547	2257	1990	1546	341	3930	3877	7857	
MEAN LENGTH(mm)	1109	1026	1003	983	1007	1059	1017	999	1008	
MEAN WEIGHT (g)	16717	12182	10680	9529	10644	12619	11531	10297	10922	
DEPTH RANGE (m)	57	57-66	62-71	55-71	55-73	57-71	57-71	55-73	55-73	

TABLE VIII-A: RED-FISH, DIVISION 3M, 1989: length composition of the stern trawl catches.

	JANUARY		FEBRUARY		MARCH		MAY		AUG.		1st QUARTER		2nd QUARTER		3rd QUARTER		TOTAL 1969		
LENGTH GROUP	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	LENGTH GROUP
10	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11
12	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12
13	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	13
14	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.3	0.0	14
15	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	15
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18
19	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.1	0.0	19
20	0.4	0.1	0.0	0.0	0.0	0.0	2.0	1.0	1.6	0.2	0.2	0.0	2.0	1.0	1.6	0.2	0.6	0.2	20
21	1.1	0.4	0.3	0.0	0.1	0.2	5.8	3.4	3.0	0.6	0.6	0.3	5.8	3.4	3.0	0.6	1.5	0.7	21
22	2.2	1.0	1.2	0.6	3.7	1.4	23.8	12.2	7.5	4.7	2.6	1.1	23.8	12.2	7.5	4.7	5.6	2.8	22
23	11.8	5.8	4.6	3.4	14.7	5.9	43.8	30.9	22.3	10.7	11.8	5.4	43.8	30.9	22.3	10.7	16.6	6.9	23
24	25.1	17.5	16.5	14.4	37.5	24.9	92.8	55.7	42.0	25.8	28.4	19.8	92.8	55.7	42.0	25.8	37.2	24.4	24
25	45.4	29.7	37.4	31.3	50.7	39.6	111.5	72.7	79.3	58.2	46.2	33.7	111.5	72.7	79.3	58.2	56.4	41.7	25
26	35.4	34.9	29.7	41.7	36.6	39.5	68.3	52.7	80.5	68.5	35.0	37.6	68.3	52.7	80.5	68.5	45.0	44.4	26
27	19.4	23.0	27.9	36.5	23.8	29.4	40.4	33.0	63.1	55.6	22.3	27.5	40.4	33.0	63.1	55.6	31.1	32.6	27
28	17.3	15.8	17.5	19.6	25.8	18.8	32.3	22.4	32.6	31.8	20.5	17.5	32.3	22.4	32.6	31.8	23.8	20.4	28
29	24.9	15.1	31.9	7.4	42.6	18.2	25.8	22.8	19.1	18.0	32.6	15.1	25.8	22.8	19.1	18.0	29.6	16.3	29
30	44.7	26.2	55.8	25.7	68.7	35.6	23.8	23.8	22.7	19.5	55.4	29.7	23.8	23.8	22.7	19.5	46.7	27.4	30
31	39.9	28.7	57.3	37.1	53.5	33.9	17.7	22.1	20.3	19.7	47.7	31.9	17.7	22.1	20.3	19.7	40.6	33.9	31
32	39.1	33.7	43.8	44.4	54.3	37.6	15.3	17.0	23.9	21.9	45.6	36.8	15.3	17.0	23.9	21.9	38.9	32.3	32
33	45.4	36.7	39.5	38.6	34.5	30.5	11.6	15.0	17.8	24.7	40.4	34.7	11.6	15.0	17.8	24.7	33.7	31.0	33
34	55.4	36.8	38.0	37.4	38.3	22.4	5.8	15.0	20.5	29.8	46.3	31.5	5.8	15.0	20.5	29.8	37.8	29.5	34
35	58.2	28.7	49.3	38.0	38.8	22.7	6.5	11.6	16.4	26.4	49.5	27.6	6.5	11.6	16.4	26.4	35.6	25.9	35
36	46.5	24.4	27.0	30.6	28.7	16.2	3.7	10.2	10.7	19.3	36.8	22.3	3.7	10.2	10.7	19.3	29.1	20.5	36
37	35.5	18.4	24.5	28.2	19.4	12.0	2.7	8.2	10.5	16.8	27.7	17.5	2.7	8.2	10.5	16.8	22.3	16.4	37
38	15.8	15.9	11.3	16.9	10.1	7.5	1.7	7.8	6.3	8.5	13.0	12.9	1.7	7.8	6.3	8.5	10.7	11.6	38
39	8.4	11.4	5.2	12.3	5.2	5.0	1.0	5.4	4.1	8.9	6.7	9.1	1.0	5.4	4.1	8.9	5.7	8.7	39
40	3.7	6.8	0.9	4.6	1.9	2.1	1.4	5.4	3.4	5.5	2.6	4.7	1.4	5.4	3.4	5.5	2.6	4.9	40
41	0.8	3.7	0.9	1.2	1.1	0.7	0.3	3.4	2.4	4.7	0.9	2.2	0.3	3.4	2.4	4.7	1.1	2.7	41
42	0.9	1.8	0.9	2.5	0.7	1.1	1.7	1.4	1.8	1.6	0.8	1.6	1.7	1.4	1.8	1.6	1.1	1.6	42
43	0.5	1.5	1.8	1.2	0.1	0.5	0.0	0.7	1.0	1.2	0.6	1.1	0.0	0.7	1.0	1.2	0.6	1.1	43
44	0.2	1.0	0.6	0.6	0.5	0.2	0.0	0.0	0.4	0.8	0.4	0.7	0.0	0.0	0.4	0.8	0.3	0.6	44
45	0.2	0.3	0.3	0.6	0.6	0.7	0.0	0.3	0.2	1.8	0.4	0.5	0.0	0.3	0.2	1.8	0.3	0.7	45
46	0.3	0.3	0.0	0.6	0.1	0.6	0.0	0.3	0.0	0.6	0.2	0.5	0.0	0.3	0.0	0.6	0.1	0.5	46
47	0.0	0.1	0.0	0.3	0.3	0.2	0.2	1.4	0.2	0.2	0.2	0.2	0.2	1.4	0.2	0.2	0.2	0.3	47
48	0.0	0.1	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.2	0.2	0.0	0.0	2.0	0.0	0.2	0.2	0.3	48
49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	49
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.1	50
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	51
52	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	52
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.1	53
TOTAL	580.5	419.5	524.4	475.6	592.5	407.9	540.1	460.2	514.2	486.2	576.7	423.7	540.1	460.2	514.2	486.2	562.4	438.0	
No. SAMPLES	43	43	13	13	33	33	11	11	21	21	84	84	11	11	21	21	121	121	
No.F.MEASURED	5813	4201	1711	1552	4752	3273	1588	1354	2534	2398	12276	9026	1586	1354	2534	2398	16396	12778	
MEAN LENGTH(mm)	319	320	316	321	308	307	269	289	288	303	314	315	269	289	288	303	306	310	
MEAN WEIGHT (g)	457	473	438	466	395	423	286	387	361	427	430	454	286	387	361	427	406	442	
MEAN WEIGHT(M+F)		464		452		408		332		393		441		332		393		422	
DEPTH RANGE (m)		250-700		565-675		392-709		178-873		193-634		250-709		178-873		193-634		178-873	

TABLE VIII-8: RED-FISH, DIVISION 3L, 1989: length composition of the stern trawl catches.

	FEBRUARY		MARCH		MAY		JUNE		1st QUARTER		2nd QUARTER		TOTAL 1989		
LENGTH GROUP	M	F	M	F	M	F	M	F	M	F	M	F	M	F	LENGTH GROUP
24	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.9	0.0	24
25	0.6	0.2	1.1	1.1	0.0	0.0	2.3	0.0	0.6	0.3	1.7	0.0	0.7	0.3	25
26	4.0	1.1	0.0	2.1	0.0	6.5	2.3	0.0	3.4	1.3	1.7	1.7	3.2	1.3	26
27	5.5	3.0	6.4	6.4	13.1	19.6	4.6	9.1	5.6	3.5	6.8	11.8	5.7	4.3	27
28	11.5	7.4	19.3	8.6	39.2	13.1	4.6	6.8	12.7	7.6	13.5	8.4	12.8	7.6	28
29	23.1	14.2	28.9	17.1	45.8	26.1	15.9	6.8	24.0	14.6	23.6	11.8	23.9	14.4	29
30	45.4	34.5	58.8	36.4	124.2	65.4	29.6	29.6	47.5	34.7	54.1	38.9	48.0	35.1	30
31	50.9	43.9	57.8	49.2	85.0	32.7	50.1	41.0	52.0	44.7	59.1	38.9	52.6	44.2	31
32	58.1	52.1	46.0	47.1	91.5	71.9	34.2	47.8	56.3	51.3	49.0	54.1	55.7	51.5	32
33	53.0	53.0	51.3	43.9	65.4	58.8	41.0	43.3	52.8	51.6	47.3	47.3	52.3	51.3	33
34	62.3	50.7	52.4	40.6	52.3	52.3	47.8	56.9	60.8	49.2	49.0	55.7	59.8	49.8	34
35	58.9	66.3	65.2	54.5	32.7	32.7	72.9	61.5	59.8	64.5	62.5	54.1	60.1	63.6	35
36	59.1	62.5	39.6	49.2	13.1	13.1	59.2	70.6	56.1	60.5	47.3	55.7	55.4	60.1	36
37	40.7	40.1	40.6	59.9	19.6	0.0	63.8	52.4	40.7	43.1	52.4	38.9	41.7	42.7	37
38	20.6	27.3	22.5	39.6	0.0	19.6	38.7	52.4	20.9	29.1	28.7	43.9	21.6	30.4	38
39	8.5	13.1	7.5	26.7	0.0	0.0	20.5	18.2	8.4	15.1	15.2	13.5	9.0	15.0	39
40	3.8	6.4	5.3	6.4	6.5	0.0	6.8	6.8	4.0	6.4	6.8	5.1	4.3	6.3	40
41	2.7	1.3	1.1	0.0	0.0	0.0	0.0	0.0	2.4	1.1	0.0	0.0	2.2	1.0	41
42	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	1.4	1.1	0.0	0.0	1.3	1.0	42
43	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0	1.0	1.0	43
44	1.3	1.7	2.1	2.1	0.0	0.0	0.0	2.3	1.4	1.8	0.0	1.7	1.3	1.8	44
45	0.9	1.7	1.1	1.1	0.0	0.0	0.0	0.0	1.0	1.6	0.0	0.0	0.9	1.5	45
46	0.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0	0.3	0.4	46
47	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.6	47
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48
49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56
57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58
59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59
60	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	60
TOTAL	515.5	484.5	508.0	492.0	986.2	411.8	494.3	505.7	514.4	485.6	518.6	481.4	514.8	485.2	
No. SAMPLES	24	24	5	5	1	1	3	3	29	29	4	4	33	33	
No.F.MEASURED	2723	2559	475	460	90	63	217	222	3198	3019	307	285	3505	3304	
MEAN LENGTH(mm)	340	346	337	346	321	325	348	349	340	346	340	344	340	346	
MEAN WEIGHT (g)	590	644	566	641	500	524	671	685	586	644	621	649	589	644	
MEAN WEIGHT(M+F)		616		603		510		678		614		634		616	
DEPTH RANGE (m)		308-855		308-864		813-1030		311-978		308-864		311-1030		308-1030	

TABLE VIII-C: RED-FISH, DIVISION 3N, 1989: length composition of the stern trawl catches.
(one fishing day sampled in june)

JUNE=TOTAL

LENGTH GROUP	M	F	LENGTH GROUP
19	2.1	4.3	19
20	21.3	8.5	20
21	55.3	12.8	21
22	80.9	40.4	22
23	74.5	72.3	23
24	72.2	63.8	24
25	112.8	27.7	25
26	91.5	21.3	26
27	80.9	10.6	27
28	21.3	17.0	28
29	17.0	12.8	29
30	8.5	21.3	30
31	4.3	14.9	31
32	2.1	6.4	32
33	2.1	6.4	33
34	2.1	4.3	34
35	0.0	2.1	35
36	0.0	2.1	36
37	0.0	2.1	37
TOTAL	648.9	351.1	

No. SAMPLES	2	2
No.F.MEASURED	305	165
MEAN LENGTH(mm)	250	256
MEAN WEIGHT (g)	248	285
MEAN WEIGHT(M+F)		261
DEPTH RANGE (m)		230-780

TABLE II: GREENLAND HALIBUT (TURBOT), DIVISION 3L, 1989: length composition of the stern trawl catches.

	MAY		JUNE		JULY		AUGUST		2nd QUARTER		3rd QUARTER		TOTAL 1989		
LENGTH GROUP	M	F	M	F	M	F	M	F	M	F	M	F	M	F	LENGTH GROUP
30	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.2	0.0	30
32	1.1	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.3	0.1	32
34	2.7	0.8	0.5	0.0	0.0	0.0	0.0	0.0	1.2	0.2	0.0	0.0	0.8	0.2	34
36	4.2	2.3	2.2	0.2	0.3	0.0	0.0	0.0	2.8	0.8	0.2	0.0	1.9	0.5	36
38	8.0	4.6	1.9	1.5	0.0	0.3	0.0	0.0	3.8	2.5	0.0	0.2	2.4	1.7	38
40	19.1	8.4	6.8	3.2	1.5	0.6	0.0	0.0	10.6	4.8	1.1	0.4	7.2	3.3	40
42	40.2	20.3	14.2	7.7	2.4	1.2	0.0	0.7	22.2	11.6	1.7	1.1	14.9	7.8	42
44	45.2	39.4	21.8	14.3	7.5	3.6	3.6	0.7	29.0	22.1	6.4	2.8	20.9	15.2	44
46	57.1	40.6	29.9	19.8	8.4	5.7	2.8	2.1	38.2	26.2	6.8	4.7	27.0	18.5	46
48	59.0	46.7	28.0	24.1	9.3	7.5	2.8	9.2	37.5	31.0	7.4	8.0	26.8	22.8	48
50	69.7	50.9	34.3	32.1	10.9	16.3	17.9	17.0	45.2	37.9	12.9	16.5	33.6	30.2	50
52	54.4	65.5	32.6	31.9	17.5	27.1	20.6	32.0	39.3	42.3	18.4	28.6	31.8	37.4	52
54	47.1	60.1	36.0	40.8	25.6	28.3	34.1	46.9	39.4	46.7	28.2	33.9	35.4	42.1	54
56	37.5	44.0	33.6	44.0	22.3	40.1	38.4	61.8	34.8	44.0	27.1	46.6	32.1	44.9	56
58	26.3	46.0	35.1	54.6	26.5	51.9	29.1	66.8	30.6	51.9	27.3	56.3	29.4	53.5	58
60	12.6	28.7	28.0	51.4	31.4	60.3	28.4	78.8	23.3	44.4	30.5	65.8	25.6	52.1	60
62	4.6	21.1	20.3	58.4	17.8	62.7	21.3	73.9	15.5	46.9	18.8	66.0	16.7	53.7	62
64	1.9	16.9	7.5	50.0	14.2	64.5	10.7	71.0	5.8	39.8	13.1	66.5	8.4	49.3	64
66	0.4	5.0	3.2	41.8	4.8	72.1	5.0	69.6	2.4	30.5	4.9	71.3	3.3	45.1	66
68	0.4	4.2	1.7	37.5	1.8	63.0	0.0	54.0	1.3	27.3	1.3	60.3	1.3	39.1	68
70	1.1	1.1	1.5	35.7	0.9	59.1	0.0	41.2	1.4	25.0	0.6	53.8	1.1	35.3	70
72	0.0	1.9	0.2	26.0	0.0	51.3	1.4	54.0	0.1	19.9	0.4	52.1	0.2	31.4	72
74	0.0	0.8	0.0	20.5	0.3	46.1	0.7	29.1	0.0	14.4	0.4	41.1	0.2	23.9	74
76	0.4	1.1	0.0	14.3	0.0	31.4	0.0	17.0	0.1	10.1	0.0	27.1	0.1	16.3	76
78	0.0	0.8	0.0	14.8	0.0	32.9	0.0	19.2	0.0	10.5	0.0	28.8	0.0	17.1	78
80	0.0	0.0	0.0	11.8	0.0	21.4	0.0	13.5	0.0	8.1	0.0	19.1	0.0	12.0	80
82	0.0	0.0	0.0	9.2	0.0	17.5	0.0	13.5	0.0	6.4	0.0	16.3	0.0	9.9	82
84	0.0	0.0	0.0	5.1	0.0	10.3	0.0	4.3	0.0	4.2	0.0	8.5	0.0	5.8	84
86	0.0	0.0	0.0	2.9	0.0	7.5	0.0	2.8	0.0	2.0	0.0	6.1	0.0	3.5	86
88	0.0	0.0	0.0	1.5	0.0	4.8	0.0	0.7	0.0	1.1	0.0	3.6	0.0	2.0	88
90	0.0	0.0	0.0	0.9	0.0	4.2	0.0	1.4	0.0	0.6	0.0	3.4	0.0	1.6	90
92	0.0	0.0	0.0	0.7	0.0	3.0	0.0	0.0	0.0	0.5	0.0	2.1	0.0	1.1	92
94	0.0	0.0	0.0	0.2	0.0	1.2	0.0	1.4	0.0	0.1	0.0	1.3	0.0	0.5	94
96	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.2	96
98	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.7	0.0	0.2	0.0	0.2	0.0	0.2	98
TOTAL	498.3	511.7	339.5	660.5	203.6	796.4	216.6	783.4	385.4	614.6	207.5	792.5	321.7	678.3	
No. SAMPLES	20	20	54	54	31	31	11	11	74	74	42	42	116	116	
No.F.MEASURED	1275	1336	1990	3871	675	2641	305	1103	3265	5207	980	3744	4245	8951	
MEAN LENGTH(mm)	501	534	526	625	569	671	576	648	522	602	571	664	534	628	
MEAN WEIGHT (g)	1089	1336	1226	2323	1560	2995	1584	2538	1233	2070	1567	2860	1311	2690	
MEAN WEIGHT(M+F)		1216		1984		2703		2331		1747		2592		2050	
DEPTH RANGE (m)		813-1030		480-1213		726-1217		857-1142		480-1213		726-1217		480-1217	

TABLE X-A: AMERICAN PLAICE, DIVISION 3N, 1989: length composition of the gillnet catches.

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		2nd QUARTER		3rd QUARTER		TOTAL 1989		
LENGTH GROUP	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	LENGTH GROUP
24	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	2.1	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.4	0.0	24
26	7.4	0.0	4.0	0.0	2.6	0.0	9.2	0.0	3.1	1.0	0.0	0.0	3.6	0.0	6.9	0.3	4.7	0.1	26
28	7.4	0.0	23.1	1.1	16.3	0.0	23.8	0.0	14.5	1.0	0.0	0.0	19.7	0.6	19.9	0.3	19.7	0.5	28
30	29.6	0.0	42.2	2.2	36.4	0.9	50.9	3.3	51.6	12.4	27.8	0.0	39.3	1.5	50.4	6.2	43.3	3.2	30
32	66.7	0.0	71.1	4.0	60.5	6.0	80.8	17.3	81.9	23.8	27.8	9.3	66.3	4.8	79.2	19.2	70.9	9.9	32
34	111.1	14.8	86.6	15.2	77.6	14.2	122.5	30.9	124.4	45.6	55.6	9.3	83.1	14.7	120.6	35.0	96.6	21.9	34
36	148.1	22.2	104.7	26.0	98.2	32.2	110.0	48.2	115.0	42.5	101.9	55.6	102.9	28.6	111.4	46.6	105.9	35.1	36
38	88.9	22.2	58.5	36.8	76.3	29.6	75.9	42.8	70.5	39.4	83.3	55.6	67.2	33.2	74.4	42.2	69.6	36.4	38
40	59.3	7.4	40.8	35.7	59.6	33.9	59.1	42.3	56.0	35.2	27.8	55.6	49.6	34.2	56.9	40.4	52.2	36.4	40
42	7.4	44.4	17.7	43.3	33.4	32.6	36.3	38.5	26.9	44.6	64.8	27.8	24.4	38.6	34.3	40.1	28.0	39.1	42
44	29.6	7.4	8.3	47.3	31.7	42.5	26.8	34.1	25.9	22.8	9.3	55.6	19.3	44.1	25.4	31.2	21.5	39.5	44
46	0.0	22.2	3.6	43.3	13.7	44.6	18.4	25.5	24.9	18.7	46.3	27.8	8.0	43.3	21.6	23.3	12.9	36.2	46
48	0.0	7.4	0.7	28.9	5.6	31.3	6.5	16.8	9.3	14.5	64.8	18.5	2.5	29.4	9.6	16.1	5.3	24.6	48
50	0.0	29.6	0.7	29.6	0.9	35.6	3.3	14.6	3.1	15.5	0.0	18.5	0.8	32.3	3.1	15.1	1.6	26.1	50
52	0.0	22.2	0.0	24.9	0.9	28.7	0.0	15.7	0.0	16.6	0.0	27.8	0.4	26.5	0.0	16.4	0.2	22.9	52
54	0.0	61.5	0.0	35.7	0.0	30.4	0.5	15.2	0.0	13.5	0.0	27.8	0.0	34.6	0.3	15.1	0.1	27.6	54
56	0.0	7.4	0.0	39.7	0.0	36.9	0.0	10.8	0.0	6.2	0.0	9.3	0.0	37.6	0.0	9.3	0.0	27.5	56
58	0.0	59.3	0.0	39.4	0.0	32.2	0.0	4.9	0.0	14.5	0.0	9.3	0.0	36.7	0.0	8.2	0.0	26.5	58
60	0.0	37.0	0.0	35.0	0.0	26.2	0.0	5.4	0.0	13.5	0.0	46.3	0.0	31.1	0.0	9.6	0.0	23.4	60
62	0.0	29.6	0.0	20.2	0.0	14.6	0.0	2.2	0.0	4.1	0.0	18.5	0.0	17.9	0.0	3.4	0.0	12.8	62
64	0.0	14.8	0.0	14.1	0.0	7.7	0.0	3.8	0.0	3.1	0.0	9.3	0.0	11.3	0.0	3.8	0.0	8.6	64
66	0.0	7.4	0.0	7.9	0.0	1.3	0.0	3.8	0.0	2.1	0.0	0.0	0.0	5.0	0.0	3.1	0.0	4.3	66
68	0.0	0.0	0.0	5.1	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	2.5	68
70	0.0	0.0	0.0	1.4	0.0	2.1	0.0	0.0	0.0	0.0	0.0	9.3	0.0	1.7	0.0	0.3	0.0	1.2	70
72	0.0	0.0	0.0	1.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.5	72
74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74
76	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	76
TOTAL	555.6	444.4	462.1	537.9	513.7	486.3	623.8	376.2	609.3	390.7	509.3	490.7	487.5	512.5	614.8	385.2	533.0	467.0	
No. SAMPLES	3	3	22	22	25	25	21	21	14	14	3	3	50	50	38	38	85	88	
No.F.MEASURED	75	60	1288	1490	1198	1134	1151	694	588	377	55	53	2553	2684	1794	1124	4347	3808	
MEAN LENGTH(mm)	368	527	361	499	376	491	369	437	371	434	401	475	368	496	371	438	369	479	
MEAN WEIGHT (g)	467	1617	408	1342	501	1259	454	848	458	850	600	1170	453	1313	460	864	456	1180	
MEAN WEIGHT(M+F)		978		918		870		682		611		880		894		615		794	
DEPTH RANGE (m)		57		57-66		62-71		55-71		55-73		57-71		57-71		55-73		55-73	

TABLE X-B: AMERICAN PLAICE, DIVISION 3M, 1989: length composition of the stern trawl catches.

AUGUST-TOTAL

LENGTH GROUP	M	F	LENGTH GROUP
28	10.4	0.0	28
30	20.8	0.0	30
32	41.7	0.0	32
34	72.9	0.0	34
36	93.8	0.0	36
38	72.9	10.4	38
40	62.5	20.8	40
42	187.5	62.5	42
44	62.5	114.6	44
46	20.8	114.6	46
48	0.0	20.8	48
50	0.0	10.4	50
TOTAL	645.8	354.2	TOTAL

No. SAMPLES	1	1
No.F.MEASURED	62	34
MEAN LENGTH(mm)	396	453
MEAN WEIGHT (g)	694	1083
MEAN WEIGHT(M+F)		833

TABLE XI: YELLOWTAIL FLOUNDER, DIVISION 3N, 1989: length composition of the gillnet catches.

	APRIL		MAY		JUNE		JULY		AUGUST		2nd QUARTER		3rd QUARTER		TOTAL 1989		
LENGTH GROUP	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	LENGTH GROUP
24	0.0	0.0	0.0	0.0	6.3	0.0	7.2	0.0	2.6	2.6	4.5	0.0	5.8	0.3	5.1	0.4	24
26	116.9	13.0	34.2	0.0	32.6	1.1	22.3	1.2	51.9	5.2	37.9	1.5	32.0	2.5	35.1	2.0	26
28	168.8	13.0	85.6	13.7	99.9	4.2	99.8	3.6	88.1	26.0	100.8	6.3	94.5	10.7	97.8	8.7	28
30	103.9	39.0	92.5	10.3	107.3	10.5	127.4	15.8	135.1	93.1	103.8	12.1	129.8	37.8	116.3	24.4	30
32	116.9	51.9	51.4	30.8	94.6	14.7	98.6	36.1	135.1	52.3	86.4	20.5	110.1	44.4	97.8	31.9	32
34	26.0	51.9	99.3	65.1	93.6	32.6	62.7	30.0	41.6	49.4	90.9	40.9	56.7	36.2	74.5	38.6	34
36	13.0	77.9	71.9	61.6	88.3	50.5	75.7	27.6	44.2	18.2	80.3	54.5	65.7	24.7	73.3	40.2	36
38	51.9	26.0	65.1	85.6	68.3	53.6	73.2	46.9	36.4	33.8	61.1	59.1	61.6	42.7	71.7	51.2	38
40	39.0	64.9	37.7	75.3	52.6	64.1	55.3	56.5	44.2	54.5	48.5	66.7	51.8	55.9	50.1	61.5	40
42	0.0	0.0	20.5	47.9	20.0	31.5	14.4	61.3	5.2	33.3	18.9	33.3	11.5	52.6	15.4	42.6	42
44	0.0	13.0	0.0	34.2	7.4	17.9	1.2	50.5	2.6	23.4	5.3	21.2	1.6	41.9	3.5	31.1	44
46	0.0	13.0	0.0	10.3	2.1	11.6	0.0	9.6	0.0	15.6	1.5	11.4	0.0	11.5	0.8	11.4	46
48	0.0	0.0	0.0	3.4	0.0	9.5	1.2	13.2	0.0	7.8	0.0	7.6	0.8	11.5	0.4	9.5	48
50	0.0	0.0	0.0	0.0	0.0	3.2	0.0	3.6	0.0	2.6	0.0	2.3	0.0	3.3	0.0	2.8	50
52	0.0	0.0	0.0	3.4	0.0	2.1	0.0	2.4	0.0	0.0	0.0	2.3	0.0	1.6	0.0	2.0	52
TOTAL	636.4	363.6	558.2	441.8	693.0	307.0	640.6	359.4	581.8	418.2	659.8	340.2	622.0	378.0	641.7	358.3	
No. SAMPLES	2	2	10	10	25	25	19	19	11	11	37	37	30	30	67	67	
No.F.MEASURED	49	29	163	129	659	292	533	299	224	161	871	449	757	460	1628	909	
MEAN LENGTH(mm)	317	354	342	388	344	395	340	400	330	366	342	391	337	388	340	390	1
MEAN WEIGHT (g)	327	464	344	547	377	613	341	584	297	419	368	585	323	526	349	555	16
MEAN WEIGHT(M+F)		377		433		450		425		348		442		403		423	1
DEPTH RANGE (m)		57		57-66		62-71		55-71		53-73		57-71		55-73		55-73	

TABLE XII-A: COD, DIVISION 3N, 1988: age composition (%) and mean weight (Kg) at age in the stern trawl catches.

	JANUARY		MARCH		MAY		JUNE		JULY		AUGUST		1st QUARTER		2nd QUARTER		3rd QUARTER		TOTAL 1988		
AGE	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE
3	800.7	0.278	403.1	0.515	185.6	0.419	96.9	0.541	216.8	0.569	156.2	0.587	696.7	0.332	157.6	0.441	201.2	0.556	252.1	0.464	3
4	186.5	0.482	471.4	0.745	531.7	0.668	526.4	0.741	561.0	0.790	571.1	0.840	261.0	0.620	530.0	0.691	563.6	0.803	515.0	0.751	4
5	8.4	1.304	116.3	1.214	266.6	1.167	354.0	1.180	197.5	1.162	244.5	1.151	36.1	1.242	294.2	1.172	209.5	1.145	215.2	1.166	5
6	3.7	3.132	11.1	2.174	16.1	1.697	22.7	1.756	24.2	1.286	27.7	1.191	5.6	2.667	18.2	1.720	25.1	1.259	17.4	1.530	6
7	0.8	4.230	0.0	0.000	0.0	0.000	0.0	0.000	0.5	1.981	0.4	1.981	0.6	4.399	0.0	0.000	0.5	1.981	0.3	2.432	7
TOTAL	1000.1		999.9		1000		1000		1000		999.9		1000		1000		999.9		1000		
No FISH AGED													196		284		267		747		

LENGTH/WEIGHT RELATIONSHIP: log w = -5.2106+3.0849log l (Hodder,1964)

TABLE XII-B: COD, DIVISION 3N, 1988: age composition (%) and mean weight (Kg) at age in the gillnet catches.

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		2nd QUARTER		3rd QUARTER		TOTAL 1988		
AGE	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE COMP.	MEAN WEIGTH	AGE
5	0.0	0.000	0.0	0.000	0.0	0.000	1.6	3.448	1.0	3.448	1.2	3.448	0.0	0.000	1.3	3.448	0.7	3.448	5
6	0.3	5.514	2.3	3.491	1.8	4.543	1.8	3.697	2.2	3.792	1.2	3.685	1.9	4.036	1.9	3.739	2.2	4.054	6
7	3.3	6.137	3.2	5.210	7.4	5.156	29.7	5.320	30.2	5.025	17.1	5.451	5.5	5.171	28.8	5.202	16.6	5.193	7
8	8.2	6.866	49.9	6.685	66.6	6.465	90.1	6.595	88.5	6.379	45.0	6.758	57.5	6.541	82.3	6.518	71.5	6.556	8
9	95.8	9.361	266.3	8.123	316.7	7.806	343.1	7.382	267.6	7.475	196.2	7.505	287.4	7.941	300.1	7.422	290.5	7.681	9
10	187.7	10.931	227.9	9.500	224.8	9.100	233.5	8.658	218.6	9.061	177.3	9.354	224.4	9.321	222.6	8.862	224.8	9.051	10
11	200.4	11.209	205.7	10.055	188.9	9.831	116.3	10.266	135.9	10.790	141.0	11.489	196.0	9.982	126.3	10.606	159.3	10.259	11
12	153.5	13.183	96.4	11.767	81.1	11.438	67.9	11.163	91.5	11.644	108.6	12.325	90.3	11.700	80.9	11.513	84.6	11.568	12
13	144.7	13.906	69.5	13.096	52.7	12.912	39.8	12.716	59.5	12.997	93.0	14.048	63.3	13.089	52.3	13.046	57.2	13.070	13
14	123.0	15.822	46.8	14.595	34.8	13.601	48.6	13.045	73.2	13.834	145.5	15.066	63.3	14.284	66.9	13.761	59.3	13.935	14
15	68.2	16.670	23.6	16.698	19.1	16.980	20.9	12.750	29.7	13.362	50.6	15.098	23.0	16.827	27.0	13.389	24.5	14.611	15
16	12.6	16.017	4.7	17.755	3.7	15.326	4.0	14.300	5.5	14.405	11.7	17.663	4.5	15.176	5.2	14.964	4.9	14.843	16
17	0.0	0.000	0.0	0.000	0.0	0.000	1.8	17.842	2.6	17.658	0.3	17.912	0.0	0.000	2.7	17.789	1.8	17.764	17
18	5.3	14.010	3.7	14.010	2.2	14.010	0.8	16.390	1.3	16.390	3.4	16.390	2.9	14.010	1.2	16.390	1.9	15.002	18
19	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.6	25.141	0.0	0.000	0.0	0.000	0.3	25.141	0.1	25.141	19
TOTAL	1000		1000		999.8		999.9		999.9		1000.1		1000		999.8		999.9		
No FISH AGED													297		400		697		

LENGTH/WEIGHT RELATIONSHIP: log w = -5.2106+3.0849log l (Hodder,1964)

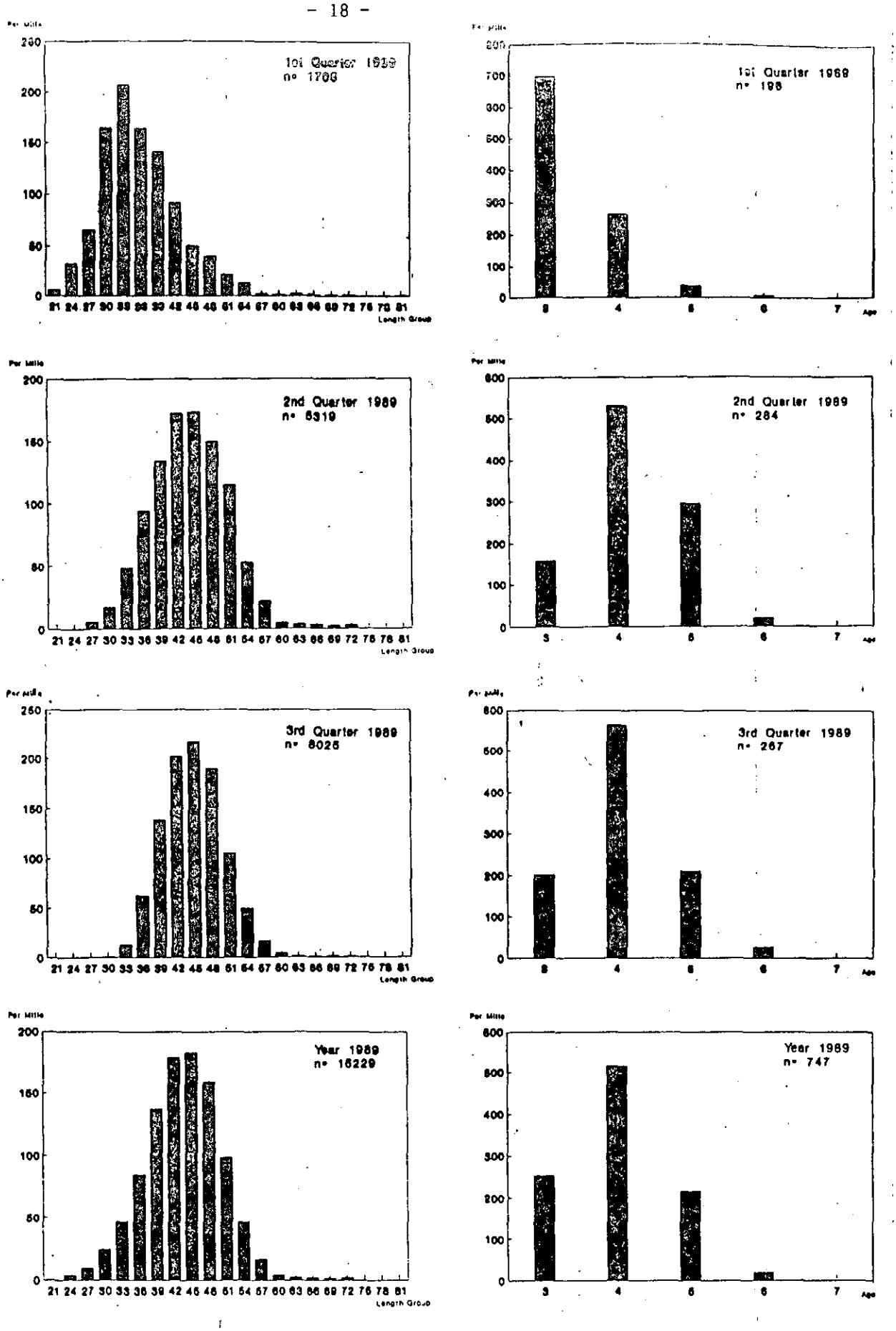


Fig. 1 - Length and age composition of Cod in Division 3M for 1st , 2nd and 3rd quarter and annual , stern trawl fishery, in 1989.

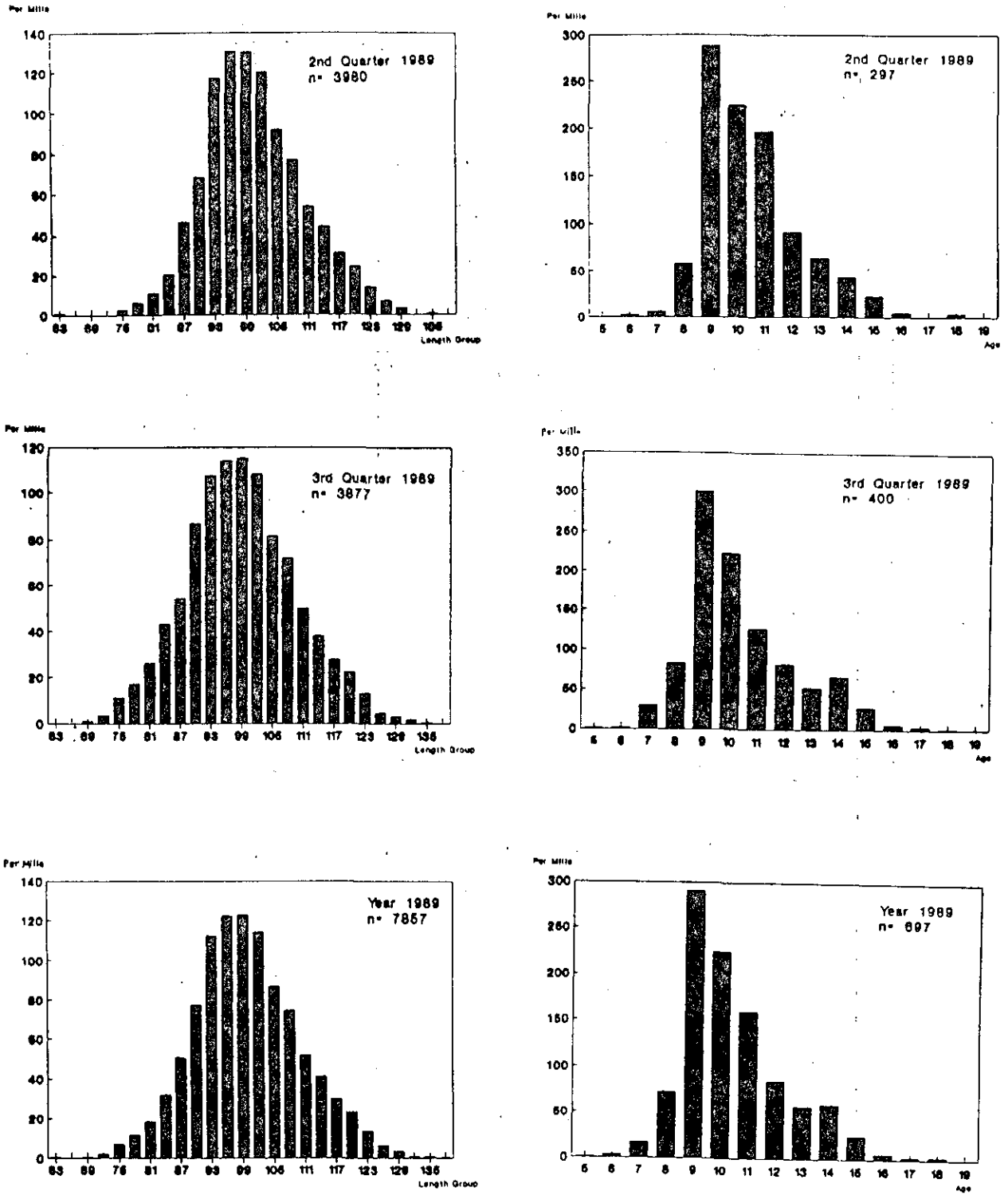
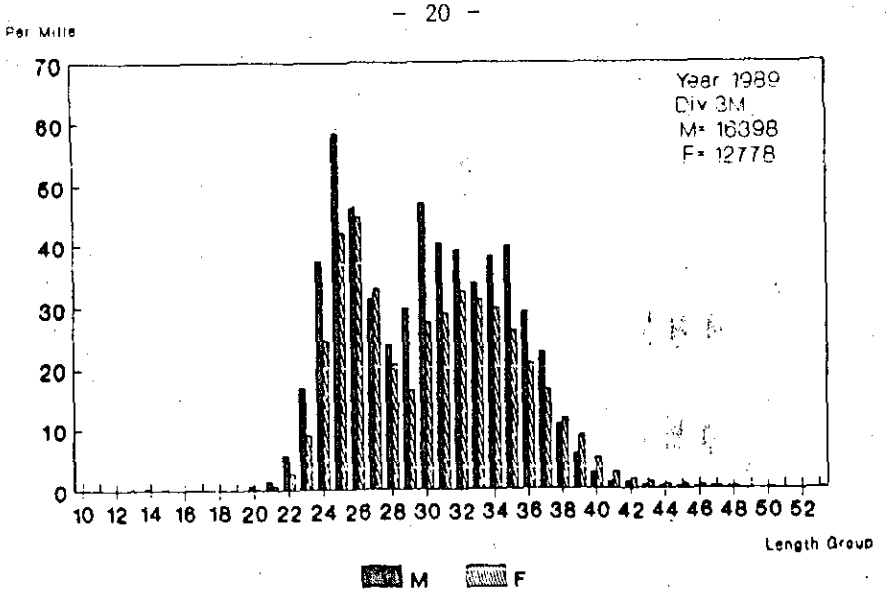
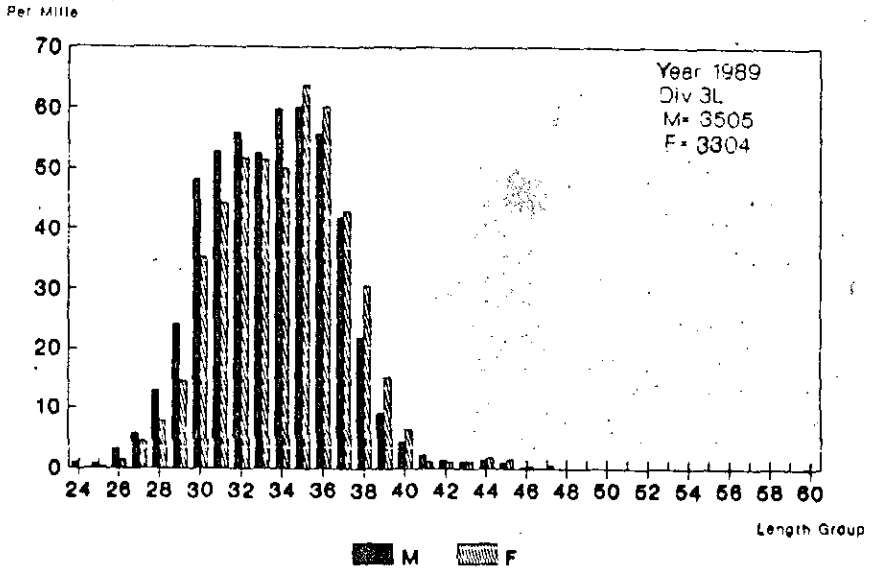


Fig. 2 - Length and age composition of Cod in Division 3N for 2nd and 3rd quarters and annual, gillnets fishery, 1989.





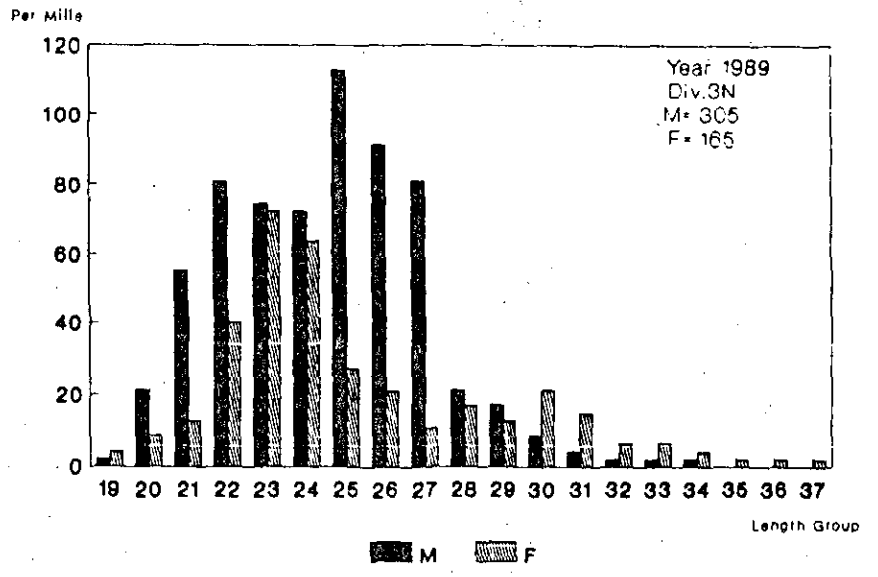


Fig. 3 - Annual length composition of Redfish in Divisions 3M, 3L and 3N, 1989.

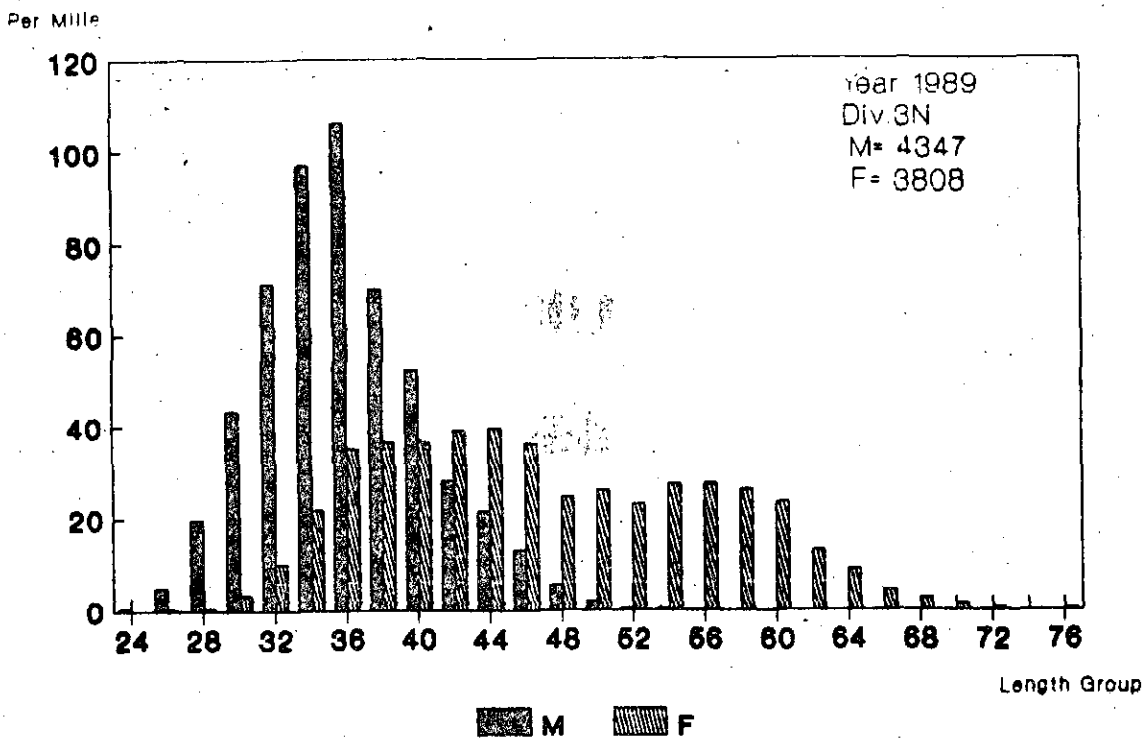


Fig. 4 - Annual length composition of American plaice in Division 3N, 1989.

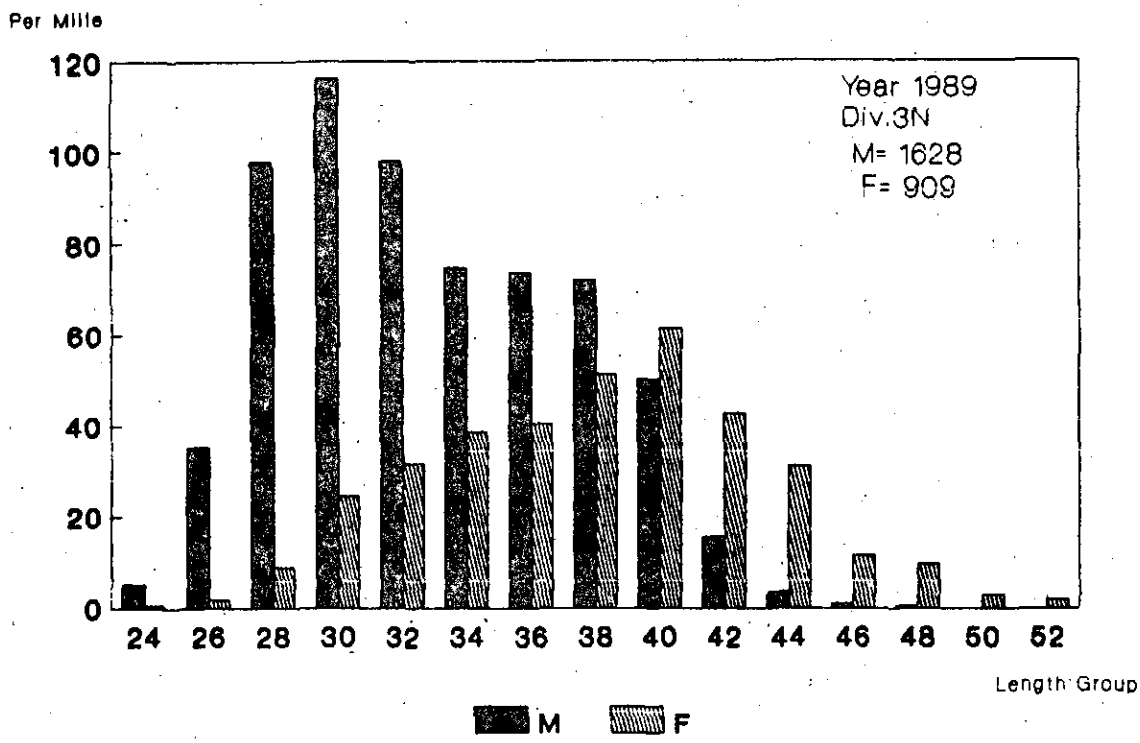


Fig. 5 - Annual length composition of Yellowtail flounder, in Division 3N, 1989

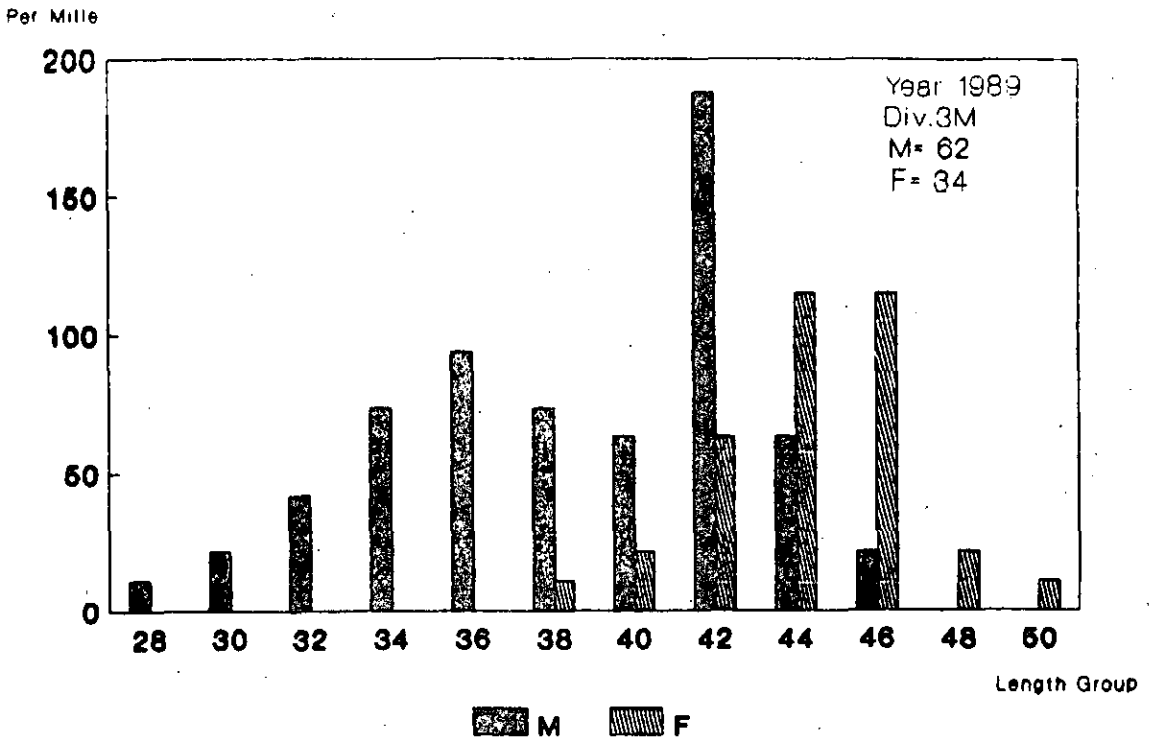


Fig. 6 - Annual length composition of American plaice in Division 3M, 1989.

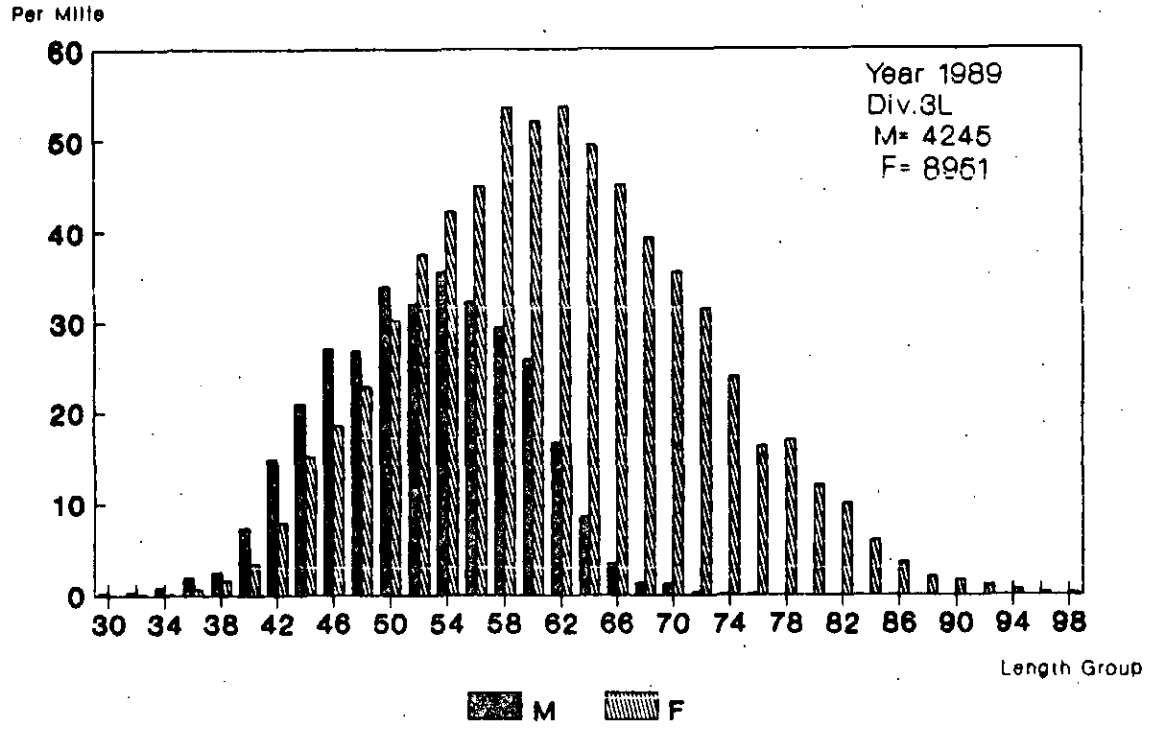


Fig. 7 - Annual length composition of Greenland halibut (Turbot) in Division 3L, 1989.