

## INTERNATIONAL COMMISSION FOR



## THE NORTHWEST ATLANTIC FISHERIES

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ICNAF Summ.Doc. 73/10

ANNUAL MEETING - JUNE 1973

Sampling Yearbook Presentation of Data

by

Assistant Executive Secretary

At the 1972 Annual Meeting of STACRES the Statistics and Sampling Subcommittee recommended that the Secretariat obtain from scientists involved in ICNAF research suggestions for improving the presentation of sampling data and prepare some possible formats for consideration at the next Mid-term Meeting of the Assessments Subcommittee (*Redbook* 1972, Part I, page 69).

A letter posing some questions and requesting suggestions was widely distributed to ICNAF scientists on 7 November 1972 (Annex 1). The response was very poor, and only 7 replies were received: Canada (3), Japan (1), Norway (1), UK (1), and USA (1).

Concerning the four specific questions posed, the general consensus was that it would be better if the length and age frequencies were presented in terms of numbers caught (or landed) rather than in "per mille". Except for herring workers, most agreed that a quarterly presentation of the length and age frequencies would be desirable. All agreed that there was no point in keeping different tonnage classes and side and stern categories separate for either age-length keys or length frequencies, and all suggested that the type of gear must continue to be given for groundfish and instituted for herring and other species (gear has been added to the sampling forms distributed in early February 1973 requesting 1972 sampling data).

Regarding the current presentation of sampling data, other comments were related to the absence of important data, such as average weight, mesh size used, age data not reported by some countries, etc., as well as the necessity of providing age and length data for such species as redfish and the various flounders as sexed frequencies. Also the depth should be given in metres rather than in fathoms.

The above observations relate to the streamlining of the sampling material as currently presented, but one respondent thought that all of the basic sampling information might be submitted to ICNAF on a sample by sample basis, computerized and the relevant data made available on request to scientists engaged in particular assessments. Thus the Sampling Yearbook would become redundant and it could be replaced by a catalogue of samples available at the Secretariat. The major disadvantage of this approach is that many persons not directly involved in ICNAF assessments would have no direct reference to the data even for making general observations on trends in size and age compositions of the catches.

In the light of the comments received both from the above-mentioned replies and from discussions with other assessment scientists, two draft formats are presented for consideration of the Subcommittee: Table 1 is a monthly presentation of sampling data weighted to nominal catches, and Table 2 is a quarterly presentation of the same sampling data, the latter being similar to the format used by ICES in presenting Stock Record Data (see Annex II, for examples). Both formats were prepared on the assumption that age-length keys, which occupy a considerable amount of space in the Sampling Yearbook, would not be published in their present form, but would be filed at the Secretariat and made available upon request.

It was also recommended at the 1972 Annual Meeting that a copy of the new version of the Sampling Yearbook (using cod as an example) be prepared for consideration at the 1973 Annual Meeting. Since the Assessments Subcommittee did not have the time to consider and decide on a suitable format at the January 1973 Special Meeting, it was not possible to provide the new version as recommended last year. However, the Secretariat has prepared a draft version based on the quarterly presentation of data (using cod from the 1971 Sampling Yearbook), and a limited number of copies will be available for examination at the Meeting of the Statistics and Sampling Subcommittee in June 1973.

In compiling the draft version, it was first necessary to tabulate the nominal catches of all countries by division, gear and by quarters (or months). Those pertaining to areas and gears for which sampling data were available are given in the quarterly tables (see WT caught (tons) of Tables 1 and 2). It would also be useful to include in the Sampling Yearbook a table for each species showing the nominal catches by country, gear, division and quarter (e.g. Table 3), from which an overall view of the adequacy could be

readily obtained.

One of the drawbacks in compiling the length and age frequency data in terms of nominal catches was in many cases the absence of values for the mean weight of fish sampled. A survey of the 1971 cod length frequency data showed that Canada in all cases provided both mean lengths and mean weights for cod samples from Subareas 2, 3 and 4. Also similar Germany (FR) data were available for Subarea 1 cod (see Res.Doc. 73/38). Plots of these data, *i.e.* mean weight against mean length) revealed a remarkable degree of consistency, and regression analyses indicated very high correlation coefficients ( $r^2 > 0.97$  for all three sets of data (Fig. 1)). Since mean lengths were always provided (or could be calculated) for the length frequencies, mean weights were calculated from the length - weight equations. The mean weight values, which were calculated in this way, are shown in parentheses, and they provide the basis for converting the "per mille" frequencies to "nominal catch" frequencies.

The above comments relate to the actual presentation of sampling data in the Sampling Yearbook. A related problem is the format used to request the sampling data from Member Countries. This problem should also be reviewed at the June 1973 Meeting in the light of the forms used for requesting the 1972 data. Copies of these forms will be available for examination by the Statistics and Sampling Subcommittee.

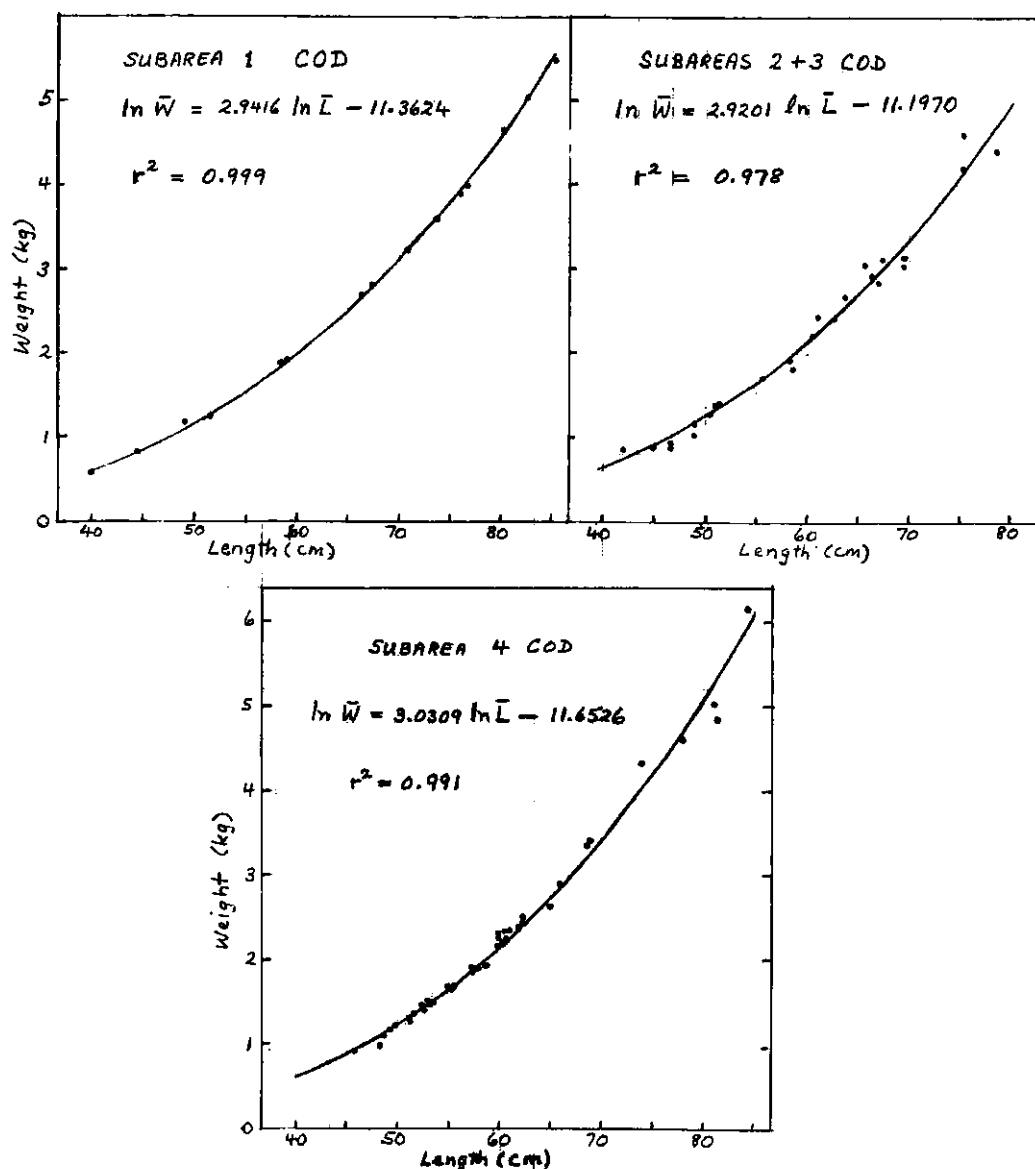


Fig. 1. Relationships between mean length and mean weight of cod, Subareas 1-4.

(S. Yearbook p. 40, 41, 44, 45, 48)

TABLE 2. COD - IF - 1971

COUNTRY : GERMANY (FR)						Commercial Landings											
GEAR : Otter Trawl																	
Age Composition of Catch ('000)						Length Composition of Catch ('000)											
Age	Year Class	QUARTERS				TOTAL	Length Group	QUARTERS				TOTAL					
		1	2	3	4			1	2	3	4						
3	68		5	5		10	30		2			2					
4	67		13	20		33	33		2			2					
5	66	10	198	76	5	289	36		8			8					
6	65	24	130	59	1	214	39		14	5		19					
7	64	139	955	1284	69	2447	42	1	28	12		41					
8	63	413	1539	1184	112	3248	45		54	13		68					
9	62	83	280	135	22	520	48	9	88	44	1	142					
10	61	32	168	51	3	254	51	19	140	115	1	275					
11	60	17	18	-	1	36	54	36	196	204	3	439					
12	59	2	-			2	57	66	275	319	3	663					
13	58	1	8			9	60	82	371	396	12	861					
14	57	1	-			1	63	125	462	464	7	1058					
15	56	3	2			5	66	93	481	469	16	1059					
15+							69	97	366	329	39	831					
							72	62	279	199	33	573					
							75	45	190	120	23	378					
							78	30	130	62	29	251					
							81	16	83	42	29	170					
							84	22	58	12	5	97					
							87	9	37	7	5	58					
							90	4	24	2	5	35					
							93	3	12		2	17					
							96	2	9			11					
							99	2	5			7					
							102	1	2			3					
Total						725	3316	2814	213	7068	Total		725	3316	2814	213	7068
Wt (tons)						2050	8766	7015	711	18542	Wt (tons)		2050	8766	7015	711	18542

Number of fish measured each quarter	2270	9224	776	500
Mean length of fish (cm)	67.8	66.2	64.9	71.7
Mean weight of fish (kg)	(2.83)	(2.64)	(2.49)	(3.34)
Number of length samples				
Number of age samples (No aged)	956	1609	304	190
Range of mesh size (mm)				

Remarks:

(Mean weights based on data in Fig 1)

(Yearbook p. 40, 41, 44, 45, 48)

Table 3. Nominal catches (tons) by country, gear, division and quarter in 1971, with comments on adequacy of sampling (\* indicates catches for which sampling data were reported).

Country	Gear	ICNAF Div.	1	2	3	4	Total	Remarks on adequacy of sampling
Can (M)	OT	3L	-	230	476	410	1116	Sampling generally well distributed by quarters except in 4R, 4S, 4T.
		3N	-	75	110	13	198	
		3O	6	9	70	20	105	
		3Ps	220	13	94	164*	491	
		4R	1413	323	268	167	2171	
		4S	14	1688*	1639	1078	4419	
		4T	1707	6970*	5171*	3458*	17306	
		4Vn	3212*	3066*	1468*	859*	8605	
		4Vs	2589*	1653*	116*	584*	4942	
		4W	2620*	651	95	1329*	4695	
		4X	972*	1766*	1519*	1444*	5701	
		5Y	-	7	6	106*	119	
		5Ze	67	798	728	478	2071	
	DS,SS	4R	-	36	15	-	51	
		4T	-	625*	1077*	514*	2216	
		4Vn	-	106	10	12	128	
		4W	1	20	3	1	25	
		4X	15	57	2	2	76	
	GN	4S	-	169	794	-	963	Sampling in 4T, second quarter, would have been desirable.
		4T	-	2202	7079*	394	9675	
		4Vn	-	4	33	4	41	
		4W	-	227	405	23	655	
		4X	16	201	228	100	545	
	Trap	4S	-	849	1561	-	2410	No samples reported.
		4T	-	10	-	-	10	
		4Vn	-	2	-	-	2	
		4X	4	51	10	3	68	
	LL	3Ps	65	6	108	61	240	Sampling not adequate in 4T, 4Vn, 4W, 4X.
		4S	-	226	299	31	556	
		4T	-	1067	1492	194	2753	
		4Vn	32	1024	1639*	1274	3969	
		4W	275	934	1990*	974	4173	
		4X	914	2316	3529*	979	7738	
		5Ze	-	239	591	37	867	
	HL	4S	-	107	318	78	503	No samples reported.
		4T	-	1131	2183	671	3985	
		4Vn	-	70	528	98	696	
		4W	-	117	398	127	642	
		4X	2	1442	2309	660	4413	
	Misc	4T	-	198	1676	108	1982	
		4Vn	-	115	472	170	757	
		4W	13	169	693	63	938	
		4X	5	610	657	270	1542	
Can (N)	OT	3K	31	-	-	-	31	Sampling in 3Ps, 4R and 4T would have been desirable.
		3L	2606*	4510*	2248*	1496*	10860	
		3N	249	485	395	263	1392	
		3O	318	79	49	94	540	
		3Pn	341	21	6	4	372	
		3Ps	7810	396	96	312	8614	
		4R	3432	812	63	79	4386	
		4S	-	122	29	31	182	
		4T	1320	1029	1	344	2694	
		4Vn	659	491	21	3	1174	
		4Vs	377	452	42	13	884	
	SGN	2J	-	-	706*	-	706	Sampling adequate, except for 3rd quarter in 4R.
		3K	9	4730*	4497*	148	9384	
		3L	439*	5995*	6888*	326	13648	
		3Pn	233	85	8	39	365	
		3Ps	575	3082*	3140*	191	6988	
		4R	-	1020*	2451	247	3718	

Table 3. Continued

Country	Gear	ICNAF Div.	1	2	3	4	Total	Remarks on adequacy of sampling
	Trap	2J	-	-	1579*	-	1579	Sampling adequate, except for 3rd quarter in 4R.
		3K	-	4368*	3651*	-	8019	
		3L	-	11864*	3967*	1	15832	
		3Ps	1	7078*	2463*	-	9542	
		4R	-	1243*	2543	-	3786	
	LL	2J	-	-	503	2	505	Except for 3K, no sampling data were reported.
		3K	-	519*	508*	330	1357	
		3L	-	13	2546	850	3409	
		3Pn	2629	1413	584	948	5574	
		3Ps	1387	2719	2973	1104	8183	
		4R	95	1302	1213	445	3055	
	HL	3K	-	325	1523	285	2133	Sampling would have been desirable for 3K, 3Ps and 4R.
		3L	-	478	3612*	462	4552	
		3Pn	36	87	62	32	217	
		3Ps	19	256	600	131	1006	
		4R	14	354	872	55	1295	
	Misc	2J	-	-	439	84	523	
		3K	-	5	164	50	219	
		3L	-	239	434	1	674	
		3Pn	99	30	-	5	134	
		3Ps	47	454	342	131	974	
		4R	-	96	68	32	196	
Den(F)	NK	1(NK)	...	...	...	...	16440	No sampling data reported.
		2(NK)	...	...	...	...	398	
		3(NK)	...	...	...	...	14166	
		4(NK)	...	...	...	...	3040	
Den(G)	NK	1A	1	-	222	32	255	Nominal catches were not reported by gear, and thus the sampling data reported by gears cannot be weighted to catches.
		1B	-	592	1163	52	1807	
		1C	-	287	1515	32	2011	
		1D	12	29	388	72	3802	
		1E	3	33	1530	132	1698	
		1F	88	170	2928	747	3933	
		1(NK)	924	1563	2065	1372	5924	
Fr(M)	OT	1C	-	2506	97	-	2603	No sampling data have been reported despite significant catches in 2J, 3M and 4R.
		1D	-	1007	-	-	1007	
		1E	-	498	-	-	498	
		2J	5764	-	121	10	5895	
		3K	181	251	20	48	500	
		3L	2432	245	260	47	2984	
		3M	8947	44	15	-	9006	
		3Ps	1785	945	-	-	2730	
		4R	21613	2750	-	-	24363	
		4Vn	576	42	-	-	618	
Ger(FR)	OT	1C	289	9419**	485	10	10203	Sampling generally adequate for Subarea 1 but data lacking for substantial fishery in 2J and 3K.
		1D	1120	2739**	675	12	4546	
		1E	980	5223**	1236	186**	7625	
		1F	2050**	8766**	7015**	711**	18542	
		2G	277	-	-	-	277	
		2H	497	786	-	-	1283	
		2J	6351	11769	-	-	18120	
		3K	3506	6849	-	-	10355	
		3L	40	131	-	-	171	
		3M	316	1312	-	-	1628	

Table 3. Continued

Country	Gear	ICNAF Div.	1	2	3	4	Total	Remarks on adequacy of sampling
Iceland			No significant catches in 1971					
Norway	OT	1C	-	93	-	-	93	No sampling data reported.
		1D	119	568	501	322	1510	
		1F	-	628	-	-	628	
		2G	41	252	-	-	293	
		2H	1363	252	-	-	1615	
		2J	3379	266	-	-	3645	
		3K	2187	-	-	-	2187	
	LL	1(NK)	...	...	...	...	1095	No sampling data reported.
		3(NK)	...	...	...	...	19737	
	SGN	1(NK)	...	...	...	...	2810	No sampling data reported.
Poland	OT	2H	1625*	-	-	35	1660	Sampling generally adequate but no age data reported in 1971.
		2J	15299*	45	-	-	15344	
		3K	9368*	671*	224	39	10302	
		3L	1614	36	191	27	1868	
		3M	19	-	-	-	19	
		4Vs	7	-	7	1	15	
		5Ze	-	16	53	68	137	
		5Zw	-	-	2	16	18	
Portugal	OT	1C	-	1074	-	-	1074	Sampling data lacking for substantial fisheries in 2H, 3M and 4R and in the 1st and 4th quarters of 2J and 3K.
		1D	-	148	-	-	148	
		1F	-	81	-	-	81	
		2H	1609	835	-	1892	4336	
		2J	13865	11619**	1791	2683	29958	
		3K	850	3019	1013**	610	5492	
		3L	13421	20116**	18131**	4799	56467	
		3M	1048	25	4616	1583	7272	
		3N	14	-	2	-	16	
		3O	-	-	111	-	111	
		3Pn	984	-	6	-	990	
		3Ps	81	-	-	-	81	
		4R	17144	-	-	-	17144	
		4V	144	-	-	-	144	
	DV+ SGN	1C	-	1034	2904	-	3938	No sampling data reported for gears used in these fisheries.
		1D	-	775	421	-	1196	
		3L	-	3459	13905	425	17789	
		3N	212	2706	934	1188	5040	
		3O	-	267	100	36	403	
Romania	OT		Caught 2773 tons in Subareas 2 and 3					No sampling data reported.
Spain	OT	2H	-	276	2	-	278	Length sampling adequate for the four catches shown but age data not sufficient. Sampling generally deficient in most divisions, particularly 2J, 3K, 3L and 4R.
		2J	2966	1226	652	123	4967	
		3K	304	2575	1066	667	4612	
		3L	2383**	1517	2509	3424	9833	
		3M	-	-	382	325	707	
		3N	-	9	96	45	150	
		3Pn	65	50	-	-	115	
		3Ps	1772**	514	98	8	2392	
		4R	4512	469	405	65	5451	
		4S	259	-	-	-	259	
		4Vn	2663**	1239**	1851	143	5896	
		4Vs	917	429	142	-	1488	
		4W	-	-	35	-	35	
	PT	1B	-	-	960	655	1615	A major deficiency in the sampling data for cod stocks in all areas is the lack of sampling data for pair trawlers fishing in the various divisions of Subareas 1, 3, 4 and 5. In 1971 these vessels
		1C	-	-	3554	4863	8417	
		1D	-	157	6455	4775	11387	
		1E	-	-	330	298	628	
		2J	367	-	-	-	367	
		3K	158	-	2	-	160	
		3L	4316	9249	18617	12357	44539	

Table 3. Continued

Country	Gear	ICNAF Div.	1	2	3	4	Total	Remarks on adequacy of sampling
Spain (Cont'd)	PT	3M	233	45	78	-	356	caught nearly 1/2 of the NW Atlantic cod catch and we have no knowledge of the length and age composition of the catches.
		3N	1534	21065	12079	6686	41363	
		3O	1457	32320	10290	4330	48397	
		3Pn	52	-	-	-	52	
		3Pa	6272	2708	1664	6133	16777	
		4Vn	4025	113	116	51	4305	
		4Va	10060	3860	1047	1605	16572	
		4W	5879	3451	1989	1450	18343	
		4X	1828	437	152	198	2615	
		5Y	-	-	152	7	159	
		5Ze	2821	243	2084	1425	6573	
		5Zw	67	-	674	326	1067	
USSR	OT	2H	747	-	-	820	1567	Age data lacking in 1st and 3rd quarters of 2J. No data reported for significant catches in 3M, 3N, 3O and 4W.
		2J	57329*	1284**	-	1380*	59993	
		3K	14808**	1307	1789	108	18012	
		3L	922	60	8	146	1136	
		3M	3397	136	99	1904	5536	
		3N	3856	9077	984	1503	15420	
		3O	24	3038	531	294	3887	
		3Pa	-	72	11	188	271	
		4Va	-	15	143	5	163	
		4W	1529	1804	870	140	4343	
		4X	-	308	29	-	337	
		5Z	83	578	290	319	1270	
UK		1C	-	246	-	10	256	No sampling data reported.
		1D	-	532	-	197	729	
		1E	-	-	-	183	183	
		1F	368	12	669	215	1264	
		3K	-	350	-	-	350	
		3L	1145	1632	1455	52	4284	
USA	OT	4X	38	55	95	47	235	No sampling data reported for 5Y.
		5Y	1255	1791	824	1243	5113	
		5Ze	2872*	3780*	2774*	3008*	12434	
		5Zw	346	249*	18	154	767	
	SGN	5Y	69	386	356	232	1043	No sampling data reported.
	HL	5Y	-	36	9	29	74	
		5Ze	16	59	130	24	229	
	OL	5Y	183	453	258	63	957	
		5Ze	129	563	1442	201	2335	
GDR	OT	1C	...	...	...	...	2201	
		1D	...	...	...	...	808	
		1E	...	...	...	...	145	
		2H	...	...	...	...	1222	
		2J	...	...	...	...	7722	
		3K	...	...	...	...	4958	
		3L	...	...	...	...	1326	



INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

7 November 1972

Dear Colleague:

At the 1972 Annual Meeting of ICNAF, the Statistics and Sampling Subcommittee recommended that the Secretariat obtain from scientists involved in ICNAF research suggestions for improving the presentation of sampling data and prepare some possible formats for consideration at the January 1973 Mid-Term Assessment Meeting.

In conjunction with your work as a member of the ICNAF Assessments Subcommittee, you have undoubtedly made extensive use of the material contained in the Sampling Yearbooks and your suggestions for improving the future presentation of such material would be very helpful.

Ideally, for assessment purposes, you need the age or year-class composition of catches by the commercial fishery. While some countries submit both length and age composition data in the form of age-length tables and/or keys, others submit length composition data only. Although it is known for one or two that otoliths and/or scales are also collected in conjunction with the length frequencies, we never see the age-length keys or age frequencies as such.

With regard to streamlining the material as currently presented, a number of questions arise:

1. Would it be better to have the length frequency and age frequency data presented in terms of numbers caught (or landed) rather than "per mille"?
2. Would the presentation of these frequencies by quarter (rather than by month) be adequate?
3. Reference to previous Sampling Yearbooks show that some countries submit their sampling data by side and stern trawlers separately and also by tonnage classes. Is it necessary to make such distinctions in submitting sampling data?
4. While type of gear (e.g. otter trawl, gillnet, longline, etc.) would seem to be a necessary distinction for most or all species, the herring age-length keys and length frequencies require no such separation. I would have thought that samples from such diverse gears as purse seines and gillnets should be kept separate.

I would appreciate receiving by return mail your comments on these or any other matters arising out of your use of Sampling Yearbook data.

Yours sincerely

V. M. Hodder  
Assistant Executive Secretary

Extracts from ICES Statistical Newsletters, No. 57, Stock Record Data, 1971

TABLE I 148

FISHING AREA I EAST COAST OF SCOTLAND AND ORKNEY

YEAR I 1971

LANDED IN I SCOTLAND

COUNTRY: SCOTLAND

METHOD OF FISHING: MOTOR TRAWL

SPECIES: COD

NUMBERS LANDED IN THOUSANDS						TOTAL AGE COMPOSITION IN THOUSANDS					
LENGTH GROUPS	1ST	QUARTERS 2ND	3RD	4TH	ANNUAL TOTAL	AGE YEAR CLASS	1ST	QUARTERS 2ND	3RD	4TH	ANNUAL TOTAL
<30,0	0,25	1	6	14	21	0+ 1971	-	-	-	-	-
31,5	9	19	23	101	152	1+ 1970	-	19	70	319	407
34,5	16	67	28	116	228	2+ 1969	84	364	188	286	923
37,5	20	89	23	76	209	3+ 1968	24	25	15	33	97
40,5	18	80	32	50	180	4+ 1967	51	38	12	23	123
43,5	13	56	43	51	163	5+ 1966	14	20	3	5	42
46,5	7	43	43	71	164	6+ 1965	2	9	1	2	14
49,5	5	19	31	61	117	7+ 1964	2	8	1	2	12
52,5	6	10	18	42	76	8+ 1963	0,25	2	0,25	0,25	3
55,5	9	9	8	21	47	9+ 1962	0,25	0,25	0,25	0,25	1
58,5	5	11	6	13	35	10+ 1961	0,25	0,25	-	0,25	1
61,5	7	7	4	6	24						
64,5	6	6	4	5	21						
67,5	11	9	3	5	27						
70,5	14	6	3	6	30						
73,5	8	5	3	2	18						
76,5	5	3	2	3	14						
79,5	4	6	2	5	17						
82,5	2	7	1	5	15						
85,5	3	4	1	5	13						
88,5	4	6	1	4	15						
91,5	3	3	1	1	9						
94,5	1	5	1	1	8						
97,5	1	5	1	2	7						
100,5	0,25	4	0,25	0,25	5						
>102,0	1	4	1	2	8						
TOTAL	179	485	289	671	1623		179	485	289	671	1623
MEASURED TO CM BELOW						NO. IN					
GROUPED IN 3CM INTERVALS						A/L					
RECORDED AS MID POINT OF CLASS						KEYS					
						533	568	489	497	2087	

ANNEX II (cont'd)

Table : 55		Fishing area : North Sea, Divisions IVb and IVc.											
Year : 1971		Landed in : The Netherlands											
Country: The Netherlands		Method of fishing : Beamtrawl											
Species: Sole		Other specifications:											
Numbers landed in thousands						Total age-composition in thousands							
Length groups cm	Quarters				Annual total	Sex	Year-class	Quarters				Sexes combined Annual total	
	1st	2nd	3rd	4th				1st	2nd	3rd	4th		
22	1	23	28	13	65	♂	1970	---	---	---	267	149	416
23	83	332	746	138	1,299	♀		---	---	---			
24	489	1,292	3,381	802	5,964	♂	1969	122	815	7,337	6,053		31,136
25	464	957	4,908	1,635	7,964	♀		320	1,555	9,763	5,170		
26	583	888	4,716	2,420	8,607	♂	1968	1,068	2,271	1,026	985		11,118
27	586	958	3,169	2,905	7,618	♀		1,046	1,748	2,126	848		
28	710	1,076	1,931	2,707	6,424	♂	1967	1,632	2,090	541	1,114		10,424
29	703	1,338	1,155	2,048	5,244	♀		1,182	2,087	1,274	505		
30	645	1,304	825	1,300	4,074	♂	1966	481	574	367	548		3,334
31	572	1,176	672	693	3,113	♀		573	313	408	69		
32	538	1,113	589	439	2,679	♂	1965	98	107	32	115		821
33	422	1,179	490	303	2,394	♀		89	147	199	34		
34	486	1,119	356	326	2,287	♂	1964	115	314	74	49		1,280
35	347	850	352	235	1,784	♀		130	452	127	18		
36	261	766	328	193	1,548	♂	1963	304	1,335	272	201		5,514
37	288	704	272	154	1,418	♀		492	1,946	694	271		
38	228	599	211	115	1,153	♂	1962	23	28	---	---		115
39	181	460	174	103	918	♀		---	16	---	---		
40	153	365	140	98	756	♂	1961	34	---	---	---		70
41	66	275	100*	51	492	♀		16	20	---	---		
42	58	204	64	40	366	♂	1960	---	56	24	49		303
43	24	79	40	34	177	♀		---	34	87	---		
44	39	62	21	16	138	♂	1959	34	---	---	---		34
45	13	43	11	8	75	♀		---	---	---	---		
46	4	16	6	2	28	♂	1958	34	361	98	36		1,405
47		7	6	3	16	♀		233	431	103	109		
48	4	3	<1	1	9	♂	1957	57	---	---	68		180
49	2	4	<1	1	8	♀		---	8	48	---		
50						♂	1956	11	34	---	23		109
						♀		---	24	---	11		
						♂	1955	---	---	---	---		8
						♀		---	8	---	---		
						♂	1954 and older	48	229	---	18		645
						♀		65	189	64	32		
Total	7,948	17,195	24,692	16,783	66,618	Total		4,059	8,214	9,770	9,528		66,912
								4,174	8,979	14,910	7,253		
Measured	to cm below					No. in age/length keys	♂	119	282	87	91	1,496	
Grouped							♀	168	367	262	120		
Recorded													
Information about the fishery							Quarters				Annual total		
							1st	2nd	3rd	4th			
Effort	in beamtrawl fishing hours						165,143	263,202	239,033	173,168	840,546		
Catch	in tons						2,530	5,434	5,056	4,212	17,232		
Catch per effort	kgs per 100 hours fishing						1,532	2,065	2,115	2,434	2,050		
Weight of fish measured							1,020	2,129	1,863	2,040	7,052		
No. of ships sampled							23	48	42	46	159		
Ships av. tonnage													

