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the Northwest Atlantic Fisheries

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Efficiency of sampling the major fisheries of the Northwest Atlantic in 1976

by

Assistant Executive Secretary

Introduction

A quantitative analysis of sampling data reported to the ICNAF Secretariat for the year 1975 in relation to the nominal catches for that year revealed that little more than 50% of the 52 stocks analyzed could be considered as having been adequately sampled for length frequencies (Sum. Doc. 77/VI/31). Similar analyses of data for 1973 (Sum. Doc. 75/11) and for 1974 (Sum. Doc. 76/VI/33) indicated that about 60% of the stocks were adequately sampled for length. No improvement in sampling was evident over the period from 1973 to 1975. The present review utilized sampling data and nominal catches for 1976.

Materials and Methods

At the 1975 Annual Meeting, STACRES reviewed the minimum sampling requirements and recommended that each country should sample its commercial fisheries at the rate of one length sample per 1,000 tons of a species caught in each quarter of the year, with a corresponding age sample being one fish for each centimeter length group in the length frequency sample for species which can be aged.

Taking one length sample per 1,000 tons of fish as the baseline, the present analysis utilizes the nominal catch statistics of ICNAF *Statistical Bulletin*, Vol. 26 for 1976, and all commercial sampling data reported to the Secretariat for that year (Sum. Doc. 78/VI/4). Pure research vessel data were not generally used, except in cases where it appeared obvious that the samples were taken with commercial-sized gear and seemed to be associated with significant commercial fisheries.

All available data for 1976 and summarized in Table 1 by species, country, division and quarter of the year. In addition to the numbers of length samples and numbers of fish measured, the numbers of fish aged are also listed. The symbol "... " indicates that no age-length keys were reported with the length composition data submitted.

The data for 22 species involving 70 stocks are reviewed in Table 2. The nominal catches (000 tons) are listed by quarter for all countries whose catches were considered large enough to warrant the collection of sampling data whether or not such data were reported to the Secretariat. The % values in parentheses represent the percentage of the total catch covered by the catches listed for each stock.

The "sampling efficiency" is defined as the ratio of the "number of length samples" (from Table 1) to the "nominal catch in 1000-ton units". When sampling data were reported for cases where the nominal catch was less than 500 tons, the sampling efficiency is simply the number of samples (in parentheses). The symbol "... " indicates that no breakdown of the catch or sampling efficiency could be made on a quarterly basis. Asterisks under "sampling efficiency" in the right portion of Table 2 indicate the absence of sampling data. Efficiency values less than 1.0 indicate that sampling for length was below the minimum required level, whereas values greater than 1.0 indicate the extent by which the minimum level was exceeded.

No attempt is made in this review to assess the adequacy of sampling by age.

Abbreviations for countries correspond with those generally used by ICNAF for statistical tabulations. Alpha-numeric 3-letter codes for species in the heading of Table 3 correspond with those recommended by the CWP (Coordinating Working Party on Atlantic Fishery Statistics) as follows:

COD - Cod	FLS - Summer flounder
HAD - Haddock	FLD - Windowpane flounder
RED - Redfish	RNG - Roundnose grenadier
HKS - Silver hake	HER - Herring
HKR - Red hake	MAC - Mackerel

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POK - Pollock	BUT - Butterfish
PLA - American plaice	ALE - Alewife
WIT - Witch flounder	CAP - Capelin
YEL - Yellowtail flounder	SQI - Squid- <i>Illex</i>
GHL - Greenland halibut	SQL - Squid- <i>Loligo</i>
FLW - Winter flounder	

Results

Table 3 contains a summary of the information presented in Table 2 by stock area and country. Each entry in the table represents the nominal catch to the nearest 1,000 tons (on an annual basis) and the sampling efficiency as defined above. Asterisks (***) following an entry for nominal catch indicate that no sampling data were reported to the Secretariat. Nominal catches less than 1,000 tons are not generally listed; however, when sampling data were available, catches less than 500 tons are indicated by "+".

The following breakdown of the finfish and squid stocks by sampling efficiency factors for 1976, together with the results reported in Sum. Doc. 77/VI/31 for 1975, reflect in a very general way the adequacy (or inadequacy) of sampling for length in these years:

Species	1976			1975		
	No. of stocks	Samp. efficiency		No. of stocks	Samp. efficiency	
		<1.0	≥1.0		<1.0	≥1.0
Cod	12	8	4	11	9	2
Haddock	3	-	3	3	-	3
Redfish	9	3	6	7	5	2
Silver hake	4	-	4	3	1	2
Red hake	2	-	2	2	-	2
Pollock	2	1	1	1	-	1
American plaice	6	4	2	4	1	3
Witch flounder	5	1	4	5	1	4
Yellowtail flounder	3	1	2	3	-	3
Greenland halibut	2	1	1	2	2	-
Winter flounder	1	-	1			
Summer flounder	1	-	1			
Windowpane flounder	1	-	1			
Roundnose grenadier	2	-	2	2	2	-
Herring	5	1	4	3	1	2
Mackerel	3	-	3	3	-	3
Butterfish	1	-	1			
Alewife	1	1	-			
Argentine	1	-	1	1	-	1
Capelin	2	1	1	2	2	-
Squid- <i>Illex</i>	3	1	2			
Squid- <i>Loligo</i>	1	-	1			
Total	70	23	47	52	24	28

With reference to the sampling data indicated in Table 1, it should be noted that Canada (M) sampling data for species normally reported by sex (i.e. redfish, American plaice, witch flounder, yellowtail flounder and winter flounder) for Subarea 4 have not yet been received by the Secretariat. The inclusion of these data would undoubtedly increase the efficiency factors for the relevant stocks with the possibility of further improvement in 1976 sampling relative to that given in the above table.

For some of the stocks with sampling efficiency factors greater than 1.0 (Table 3), sampling cannot be considered adequate when some countries with significant catches consistently report no commercial sampling data. For example, no commercial data for 1976 were reported by Cuba, Denmark (F), France, Iceland, Italy and Spain.

Conclusions

The sampling data available in the Secretariat for 70 stocks in the foregoing table indicate that only 67% of them were adequately sampled for length composition in 1976, with the stocks of cod, redfish, pollock, American plaice, Greenland halibut and capelin being the species most seriously affected. A similar analysis

of 52 stocks in 1975 indicated that only 54% were adequately sampled for length, whereas the 1976 figure for the same 52 stocks was 71%.

In the present analysis, only the quantitative aspect of length sampling has been considered. However, it was observed that some of the data were lacking in quality. In particular, the length composition data for the flatfishes, redfish and silver hake were not always reported by sex as required, and in some cases where length sampling was quite adequate, no age-length keys were provided to enable the calculation of age compositions. It was also noted that, in many cases, sampling effort was not directly related to the months or quarters in which significant catches were made.

REFERENCES

- SUM. DOC. 75/11. Efficiency of sampling the major fisheries of the Northwest Atlantic in 1973. Serial No. 3466.
- SUM. DOC. 76/VI/33. Adequacy of sampling TAC stocks, 1974. Serial No. 3918.
- SUM. DOC. 77/VI/31. Efficiency of sampling the major fisheries of the Northwest Atlantic in 1975. Serial No. 5097.
- SUM. DOC. 78/VI/4. Provisional lists of sampling data for 1976. Serial No. 5175.

Table 1. Summary of sampling data by species, country and division, 1976

ICNAF Div.	Quarter 1			Quarter 2			Quarter 3			Quarter 4			Gears Sampled	
	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged		
COD														
CAN-M	4R	-	-	-	6	1708	298	1	320	64	1	381	62	OTB
	4S	-	-	-	9	1822	352	1	200	37	-	-	-	OTB,SN
	4T	1	346	48	20	4616	848	34	6668	1240	1	78	23	OTB,SN,GN,LL,LHP
	4Vn	16	5265	741	1	268	48	1	200	43	3	785	149	OTB,GN
	4Vs	2	648	102	-	-	-	-	-	-	-	-	-	OTB
	4W	1	234	60	1	230	35	1	300	43	1	251	32	LL
	4X	1	395	61	1	271	57	4	641	210	3	797	190	OTB,GN,LL
	5Ze	-	-	-	1	69	36	2	461	101	-	-	-	OTB,LL
CAN-N	2J	-	-	-	-	-	-	40	7075	977	1	305	296	OTB,GN,LPH,FPN
	3K	-	-	-	18	2911	455	24	4614	586	14	4255	611	OTB,GN,LPH,FPN
	3L	-	-	-	10	3376	(1799)	31	11512	(1374)	2	698	132	OTB,GN,LPH,FPN
	3O	-	-	-	3	969	304	1	392	43	-	-	-	OTB
	3Ps	-	-	-	19	5866	(696)	12	5666	(1194)	2	952	234	OTB,GN,LL,FPN
	4R	5	2011	387	16	6898	828	-	-	-	3	1417	267	OTB,OTM
DEN-G	1C	2	2267	362	-	-	-	-	-	-	-	-	-	OTB
	1D	1	1057	345	6	3493	1131	2	2039	401	1	967	218	OTB,GN,FPN
	1E	-	-	-	-	-	-	4	2603	673	1	1271	225	OTB
FRG	2J	8	3432	949	-	-	-	-	-	-	-	-	-	OTB
	3K	4	2814		-	-	-	-	-	-	-	-	-	OTB
GDR	2J	3	3042	603	-	-	-	-	-	-	-	-	-	OTB
	3K	16	10159	2389	-	-	-	-	-	-	-	-	-	OTB
	3L	2	193	80	-	-	-	-	-	-	-	-	-	OTB
POL	3K	5	7706	720	4	1408	...	-	-	-	-	-	-	OTB
	3L	1	627	100	-	-	-	-	-	-	-	-	-	OTB
POR	3L	-	-	-	-	-	-	2	279	...	-	-	-	OTB
	3M	-	-	-	-	-	-	21	2458	...	2	220	...	OTB
USSR	2J	38	11546	305	-	-	-	-	-	-	-	-	-	OTB
	3K	34	12795	309	-	-	-	-	-	-	-	-	-	OTB
	3L	5	4640	...	-	-	-	-	-	-	-	-	-	OTB
	3N	-	-	-	8	4327	...	-	-	-	-	-	-	OTB
USA	5Ze	11	1099	...	16	2149	...	8	982	...	9	1313	...	OTB
HADDOCK														
CAN-M	4W	1	166	25	1	450	35	2	381	71	2	331	64	OTB,LL
	4X	14	3412	542	11	2966	400	12	2496	391	8	1591	237	OTB,GN,LL,LHP
	5Ze	-	-	-	4	927	147	3	617	110	2	425	59	OTB
USSR	4W	-	-	-	3	600	...	-	-	-	-	-	-	OTB
USA	4X	5	381	90	3	210	51	-	-	-	1	106	27	OTB
	5Y	1	30	19	-	-	-	1	74	21	2	108	35	OTB
	5Ze	13	965	275	15	1214	283	3	207	76	1	103	26	OTB
REDFISH														
CAN-N	2J	-	-	-	-	-	-	4	1094	...	2	2101	...	OTB,OTM
	3K	-	-	-	2	1131	...	1	363	...	1	254	...	OTB,OTM
	3L	-	-	-	4	2023	...	6	2155	...	5	2414	...	OTB,OTM
	3M	-	-	-	2	545	...	5	2283	...	-	-	-	OTM
	3N	-	-	-	-	-	-	1	630	...	-	-	-	OTB
	3O	-	-	-	1	1050	...	3	1095	...	-	-	-	OTB
	3Pn	1	424	...	5	2249	...	2	517	...	-	-	-	OTB,OTM
	3Ps	4	1615	...	2	1257	...	4	1242	...	-	-	-	OTB,OTM
	4R	13	5127	...	1	281	...	-	-	-	-	-	-	OTB,OTM
	4S	1	428	...	-	-	-	-	-	-	1	266	...	OTB,OTM
	4Vn	-	-	-	1	412	...	-	-	-	-	-	-	OTM
DEN-G	1D	-	-	-	-	-	-	1	403	...	-	-	-	OTB
	1E	-	-	-	-	-	-	2	761	...	-	-	-	OTB
POL	2J	1	738	...	-	-	-	-	-	-	-	-	-	OTB
	3K	4	2333	...	2	1670	...	-	-	-	-	-	-	OTB
	3L	5	4292	...	-	-	-	-	-	-	-	-	-	OTB

Table 1. (Cont'd)

ICNAF Div.	Quarter 1			Quarter 2			Quarter 3			Quarter 4			Gears Sampled	
	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged		
REDFISH (Cont'd)														
USSR	2J	4	1162	...	7	3990	300	9	3196	252	-	-	-	OTB
	3K	10	3381	...	-	-	-	-	-	-	-	-	-	OTB
	3L	17	5626	...	-	-	-	-	-	-	-	-	-	OTB
	3M	3	1033	...	5	1777	...	-	-	-	-	-	-	OTB
	3O	-	-	-	39	10390	...	-	-	-	-	-	-	OTB
	4W	2	526	...	5	1015	...	-	-	-	-	-	-	OTB
USA	4W	2	200	...	1	100	...	1	100	...	-	-	-	OTB
	4X	9	900	...	2	200	...	14	1463	...	4	433	...	OTB
	5Y	11	1100	...	27	2747	...	25	2523	...	15	1491	...	OTB
	5Ze	1	100	...	-	-	-	-	-	-	1	117	...	OTB
SILVER HAKE														
BUL	4W	-	-	-	1	230	...	-	-	-	-	-	-	OTM
ROM	6A	1	100	100	-	-	-	-	-	-	-	-	-	OTM
USSR	4W	76	15375	216	485	97208	243	157	31320	269	28	5615	...	OTB,OTM
	4X	-	-	-	114	22730	292	-	-	-	-	-	-	OTB
	5Ze	8	1671	...	173	34553	290	8	1600	232	-	-	-	OTB
	5Zw+6	45	9258	281	-	-	-	-	-	-	-	-	-	OTB,OTM
USA	5Y	15	1569	...	2	220	...	4	395	...	2	189	...	OTB
	5Ze	-	-	-	-	-	-	14	1448	...	1	94	...	OTB
	5Zw	2	231	...	2	71	...	23	3850	...	22	1983	...	OTB
	6	-	-	-	6	136	...	2	184	...	10	709	...	OTB
RED HAKE														
ROM	6A	1	200	...	-	-	-	-	-	-	-	-	-	OTM
USSR	5Ze	2	400	116	31	6190	151	18	3530	168	26	5209	-	OTB
USA	5Zw	3	654	...	2	113	...	23	1506	...	22	2481	...	OTB
	6A	-	-	-	6	996	...	2	105	...	10	790	...	OTB
POLLOCK														
CAN-M	4Vs	-	-	-	-	-	-	1	269	29	-	-	-	OTB
	4W	-	-	-	3	715	136	2	470	91	4	1055	209	OTB
	4X	4	806	127	7	1734	250	9	1978	312	5	1018	186	OTB,GN
	5Ze	-	-	-	2	544	78	1	325	31	-	-	-	OTB
USA	5Y	-	-	-	-	-	-	-	-	-	3	258	...	OTB
	5Ze	2	159	...	1	80	...	-	-	-	-	-	-	OTB
A. PLAICE														
CAN-N	2J	-	-	-	-	-	-	-	-	-	1	1759	537	OTB
	3K	-	-	-	-	-	-	2	582	377	1	983	273	OTB,GN
	3L	4	2823	584	7	3611	672	7	2690	572	5	1410	338	OTB
	3N	3	1174	329	5	2314	506	8	2304	732	2	998	298	OTB
	3O	3	1200	389	3	1019	302	2	962	229	-	-	-	OTB
	3Ps	3	1080	280	3	836	276	1	562	201	4	1360	440	OTB
	4T	-	-	-	1	300	36	-	-	-	-	-	-	OTB
	4Vs	1	486	45	-	-	-	-	-	-	-	-	-	OTB
DEN-G	1D	-	-	-	-	-	-	1	278	...	-	-	-	OTB
USA	5Y	-	-	-	5	343	...	1	79	...	-	-	-	OTB
	5Ze	-	-	-	7	560	...	-	-	-	1	62	...	OTB
WITCH FLOUNDER														
CAN-N	2J	-	-	-	-	-	-	-	-	-	1	201	125	OTB
	3K	-	-	-	-	-	-	12	2471	428	2	627	413	OTB,GN
	3L	-	-	-	1	72	73	6	1902	462	-	-	-	OTB,GN
	3N	1	789	181	1	356	41	1	456	82	2	841	184	OTB
	3O	3	1658	440	2	823	129	-	-	-	3	901	199	OTB
	3Ps	-	-	-	1	1154	343	-	-	-	-	-	-	OTB
	4R	3	1887	538	-	-	-	-	-	-	-	-	-	OTB
	4T	-	-	-	1	432	38	-	-	-	-	-	-	OTB

Table 1. (Cont'd)

	ICNAF Div.	Quarter 1			Quarter 2			Quarter 3			Quarter 4			Gears Sampled
		No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged	
<u>WITCH FLOUNDER (Cont'd)</u>														
POL	3K	2	1464	219	3	3117	284	-	-	-	-	-	-	OTB
USA	5Y	-	-	-	3	180	...	5	294	...	-	-	-	OTB
	5Ze	4	131	...	2	160	...	-	-	-	-	-	-	OTB
<u>YELLOWTAIL FLOUNDER</u>														
CAN-N	3L	1	409	} 660	-	-	-	1	457	} 560	1	241	} 259	OTB
	3N	4	2213		4	2392	470	4	2415		3	1146		OTB
	30	3	1676		1	340	-	-	-		1	393		OTB
USA	5Z(E69)	11	1370	992	21	2735	723	24	2984	1239	12	1396	1175	OTB
	5Z(W69)+6	11	1385	739	5	586	309	3	445	890	3	306	900	OTB
<u>G. HALIBUT</u>														
CAN-N	2J	-	-	-	-	-	-	-	-	-	1	1577	792	OTB
	3K	-	-	-	-	-	-	7	1397	517	1	995	425	OTB,GN
	3L	-	-	-	4	1518	195	4	1058	280	-	-	-	GN
GDR	1C	-	-	-	-	-	-	-	-	-	4	938	...	OTB
POL	3K	2	2589	...	4	5142	...	-	-	-	-	-	-	OTB
USSR	2G	-	-	-	-	-	-	49	4902	...	-	-	-	OTB
<u>WINTER FLOUNDER</u>														
USA	5Y	2	231	...	-	-	-	-	-	-	1	127	...	OTB
	5Ze	11	675	...	12	746	...	27	1719	...	8	507	...	OTB
	5Zw	-	-	-	-	-	-	1	95	...	-	-	-	OTB
	6	1	149	...	3	250	...	2	217	...	2	267	...	OTB
<u>SUMMER FLOUNDER</u>														
USA	5Ze	-	-	-	4	290	...	-	-	-	2	151	...	OTB
	5Zw	11	862	...	16	1278	...	9	616	...	3	211	...	OTB
	6	22	2130	...	-	-	-	4	307	...	4	233	...	OTB
<u>WINDOWPANE FLOUNDER</u>														
USA	5Ze	12	1505	...	3	392	...	2	266	...	4	441	...	OTB
<u>ROUNDNOSE GRENADE</u>														
GDR	1C	-	-	-	-	-	-	-	-	-	1	310	154	OTB
	2H	-	-	-	-	-	-	-	-	-	1	150	87	OTB
	3K	4	801	295	-	-	-	-	-	-	-	-	-	OTB
	3L	1	300	106	-	-	-	-	-	-	-	-	-	OTB
USSR	0	-	-	-	-	-	-	99	17626	...	-	-	-	OTB
	1C	-	-	-	-	-	-	94	19944	...	-	-	-	OTB
	2G	-	-	-	-	-	-	57	12810	...	-	-	-	OTB,OTM
<u>SCUP</u>														
USSR	6	1	200	...	-	-	-	-	-	-	-	-	-	OTM
<u>WOLFFISH (striped)</u>														
DEN-G	1C	-	-	-	-	-	-	1	362	...	-	-	-	OTB
<u>HERRING</u>														
CAN-M	4Vn	-	-	-	-	-	-	-	-	-	63	11480	...	PS
	4W	85	19485	4263	-	-	-	-	-	-	19	2964	1117	OTM,PS
	4X	15	4300	593	142	23968	5793	249	36679	9229	17	3069	691	SB,PS,GN,FPN,FWR
FRG	5Ze	8	1587	378	-	-	-	18	1733	1452	-	-	-	OTB,OTM
GDR	5Ze	-	-	-	-	-	-	25	6120	1377	4	859	200	OTM
JAPAN	4X	-	-	-	-	-	-	1	102	...	-	-	-	OTB
POL	5Ze	-	-	-	2	793	194	3	605	128	6	1346	398	OTB,OTM
	6B	1	549	100	-	-	-	-	-	-	-	-	-	OTM

Table 1. (Cont'd)

ICNAF Div.	Quarter 1			Quarter 2			Quarter 3			Quarter 4			Gears Sampled	
	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged		
HERRING (Cont'd)														
USSR	4W	-	-	-	29	5828	396	-	-	-	-	-	-	OTB,PS
	5Ze	-	-	-	1	200	...	14	2800	114	2	400	...	OTB,PS
USA	5Y(N)	-	-	-	66	6122	756	130	12301	1852	35	3310	655	NS
	5Y(S)	34	2678	550	5	186	284	23	1865	468	15	1270	318	NS
	5Z+6	4	321	120	-	-	-	-	-	-	-	-	-	NS
MACKEREL														
BUL	5Zw	1	200	...	-	-	-	-	-	-	-	-	-	OTM
	6A	10	1900	...	-	-	-	-	-	-	-	-	-	OTM
	6B	11	2199	...	-	-	-	-	-	-	-	-	-	OTM
	6C	1	200	...	-	-	-	-	-	-	-	-	-	OTM
CAN-M	4T	-	-	-	16	2380	549	14	2334	412	1	33	33	PS,GN
	4Vn	-	-	-	13	1416	420	1	41	41	3	138	138	HPL,FPN
	4X	-	-	-	14	2706	455	28	3386	766	7	737	133	GN,FPN,FWR
CAN-N	3K	-	-	-	-	-	-	12	564	564	7	325	325	GN,LHP,FPN
	3L	-	-	-	-	-	-	10	402	392	10	629	629	SB,PS,FPN
	4R	-	-	-	-	-	-	3	105	105	1	50	50	FPN
CUBA	5Ze	-	-	-	3	1740	...	-	-	-	-	-	-	OTB
GDR	5Ze	-	-	-	-	-	-	-	-	-	4	790	295	OTM
	6A	-	-	-	30	10032	152	-	-	-	-	-	-	OTM
	6B	10	3937	397	17	6240	153	-	-	-	-	-	-	OTM
POL	5Ze	6	5893	600	7	3027	628	-	-	-	9	2788	601	OTB,OTM
	5Zw	1	1055	101	2	486	183	-	-	-	3	406	249	OTB,OTM
	6A	7	8009	700	-	-	-	-	-	-	5	615	404	OTM
	6B	14	16386	1097	-	-	-	-	-	-	2	310	150	OTM
	6C	2	1940	201	-	-	-	-	-	-	-	-	-	OTM
ROM	5Ze	11	900	307	-	-	-	-	-	-	-	-	-	OTM
	5Zw	1	300	103	-	-	-	-	-	-	-	-	-	OTM
	6A	6	800	310	-	-	-	-	-	-	-	-	-	OTM
USSR	4VWX	-	-	-	27	5399	213	3	600	...	-	-	-	OTB
	5	273	54799	225	22	4438	...	-	-	-	-	-	-	OTB
	6	45	9067	130	-	-	-	-	-	-	-	-	-	OTM
USA	5Y	-	-	-	1	100	36	4	403	117	4	447	31	PTB,PS,FPN
MENHADEN														
ROM	6B	1	200	200	-	-	-	-	-	-	-	-	-	OTM
ALEWIFE														
USSR	4X	-	-	-	1	200	...	-	-	-	-	-	-	OTB
	5Ze	-	-	-	-	-	-	-	-	-	1	200	...	OTB
	5Zw	1	200	...	-	-	-	-	-	-	-	-	-	OTM
	6	2	400	...	-	-	-	-	-	-	-	-	-	OTM
ARGENTINE														
CUBA	4W	-	-	-	-	-	-	1	123	...	-	-	-	OTB
USSR	4W	-	-	-	5	1020	-	-	-	-	-	-	-	OTB
	4X	7	1400	...	4	800	208	2	400	...	-	-	-	OTB,OTM
BUTTERFISH														
JAPAN	5Ze	1	203	...	-	-	-	-	-	-	-	-	-	OTB
	5Zw	2	395	...	-	-	-	-	-	-	-	-	-	OTB
	6A	1	193	...	-	-	-	-	-	-	-	-	-	OTB
	6B	-	-	-	1	174	...	-	-	-	-	-	-	OTB
USSR	5Ze	-	-	-	-	-	-	1	196	...	-	-	-	OTB
USA	5Zw	2	200	...	-	-	-	2	201	...	-	-	-	OTB
	6A	2	200	...	-	-	-	-	-	-	-	-	-	OTB

Table 1. (Cont'd)

ICNAF Div.	Quarter 1			Quarter 2			Quarter 3			Quarter 4			Gears Sampled	
	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged	No.	Meas.	Aged		
CAPELIN														
BUL	30	-	-	-	5	1000	...	-	-	-	-	-	-	OTM
CAN-N	2J	-	-	-	-	-	-	-	-	-	1	49	49	OTM
	3K	-	-	-	-	-	-	-	-	-	5	250	250	OTM
	3L	10	500	501	34	1700	1687	14	682	682	-	-	-	OTM,SB,FPN,MIS
	3N	-	-	-	30	1500	1500	-	-	-	-	-	-	OTB,OTM
	3Ps	-	-	-	30	1499	1500	-	-	-	-	-	-	OTB,OTM,SB,MIS
	4T	-	-	-	3	150	150	-	-	-	-	-	-	PS
JAPAN	3N	-	-	-	10	882	...	32	3721	...	-	-	-	OTB
	30	-	-	-	1	49	...	-	-	-	-	-	-	OTB
NOR	3N	-	-	-	25	2359	563	4	469	97	-	-	-	PS
SQUID (<i>Illex</i>)														
CUBA	4W	-	-	-	-	-	-	2	301	...	-	-	-	OTB
FRA-SP	3Ps	-	-	-	-	-	-	2	196	...	-	-	-	LHP
JAPAN	4V	-	-	-	-	-	-	4	400	...	-	-	-	OTB
	4W	-	-	-	-	-	-	3	301	...	-	-	-	OTB
	5Ze	5	599	...	-	-	-	-	-	-	-	-	-	OTB
	6A	-	-	-	1	209	...	1	81	...	-	-	-	OTB
	6B	6	598	...	20	1835	...	30	2193	...	-	-	-	OTB
POLAND	5Ze	-	-	-	2	539	...	3	589	...	-	-	-	OTM
	5Z	-	-	-	1	7351	...	-	-	-	-	-	-	OTB
	6A	-	-	-	4	4781	...	-	-	-	-	-	-	OTB
USSR	4W	-	-	-	-	-	-	35	7033	...	-	-	-	OTB
	4VWX	-	-	-	300	60016	...	250	50000	...	-	-	-	OTB,OTM
	5Ze	-	-	-	22	4453	...	10	1988	...	-	-	-	OTB,OTM
USA	5Y	-	-	-	-	-	-	1	41	...	1	55	...	OTB
	5Ze	-	-	-	-	-	-	1	70	...	-	-	-	OTB
SQUID (<i>Loligo</i>)														
JAPAN	5Ze	7	931	...	-	-	-	-	-	-	-	-	-	OTB
	5Zw	1	173	...	-	-	-	-	-	-	-	-	-	OTB
	6A	10	1796	...	1	198	...	-	-	-	-	-	-	OTB
	6B	4	839	...	1	201	...	-	-	-	-	-	-	OTB
POLAND	5Z	-	-	-	3	3740	...	-	-	-	-	-	-	OTB
	6A	-	-	-	4	7681	...	-	-	-	-	-	-	OTB
USSR	5	8	1627	...	4	821	...	-	-	-	-	-	-	OTB,OTM
USA	5Zw	1	50	...	7	1126	...	2	201	...	-	-	-	OTB
	6A	3	204	...	1	70	...	-	-	-	-	-	-	OTB,FPN
SQUID (NS)														
USA	6A	2	100	...	-	-	-	-	-	-	-	-	-	OTB
SEA SCALLOPS														
USA	5Y	2	559	...	1	401	...	-	-	-	1	363	...	DRB
	5Ze	3	1116	...	-	-	-	-	-	-	13	2982	...	DRB
	6	2	1029	...	20	8977	...	25	10645	...	4	1669	...	OTB,DRB

Table 2. Sampling efficiency in relation to nominal catches by species, area and country, 1976.

Species	Stock area	Country	Nominal catches by quarter				Total for countries listed	%	Sampling efficiency					
			1	2	3	4			1	2	3	4	Total	
<u>COD</u>	1	DEN-F	...	...	...	...	3.5		...	...	...	...	**
		DEN-G	4.2	2.9	4.0	4.2	16.3		0.7	2.0	1.5	0.5	1.1	
		FRG	1.7	0.9	0.1	3.1	5.8		**	-	-	**	**	
		POR	-	-	2.4	0.1	2.5		-	-	**	-	**	
		SPA	-	-	2.0	0.1	2.1		-	-	**	-	**	
		Total	5.9	3.8	8.5	7.5	30.2	(91)	0.5	1.5	0.7	0.3	0.6	
		26H	FRG	2.3	-	-	-	2.3		**	-	-	-	**
	USSR		0.5	-	-	1.6	2.1		-	-	-	**	**	
		Total	2.8	-	-	1.6	4.4	(75)	**	-	-	**	**	
		2J+3KL	CAN	0.4	18.7	40.7	3.2	63.0		-	1.4	2.4	5.7	2.2
	FRA		5.8	0.1	-	0.1	6.0		**	-	-	-	**	
	FRG		17.1	-	0.3	-	17.4		0.7	-	-	-	0.7	
	GDR		11.8	-	-	-	11.8		1.8	-	-	-	1.8	
	POL		14.5	2.0	0.6	0.4	18.5		0.4	2.0	-	-	0.5	
	POR		15.2	5.9	9.2	7.2	37.5		**	**	0.2	**	0.1	
	SPA		4.5	1.9	1.1	3.3	10.8		**	**	-	**	**	
	USSR		14.5	6.7	9.4	15.4	46.0		5.1	**	**	**	1.2	
			Total	83.8	35.3	61.3	29.6	211.0	(99)	1.4	0.9	1.5	0.6	1.3
		3M	POR	1.3	0.2	3.5	5.1	10.1		**	-	5.3	0.4	2.3
SPA	0.1		0.1	0.9	1.4	2.5		-	-	-	**	**		
USSR	1.1		1.0	1.3	1.4	4.8		**	**	**	**	**		
	Total	2.5	1.3	5.7	7.9	17.4	(78)	**	**	3.5	0.3	1.4		
	3NO	CAN	0.1	0.9	0.7	0.4	2.1		-	3.0	1.0	-	2.0	
POR		-	-	1.1	1.5	2.6		-	-	-	**	**		
SPA		1.3	3.8	4.3	0.5	9.9		-	**	**	-	**		
USSR		1.6	2.8	3.4	1.2	9.0		**	2.7	**	-	0.9		
	Total	3.0	7.5	9.5	3.6	23.6	(97)	**	1.4	0.1	**	0.5		
	3Ps	CAN	1.5	10.5	8.8	2.5	23.3		**	1.7	1.3	0.7	1.4	
FRA		1.5	0.4	0.5	-	2.4		**	-	-	-	**		
SPA		0.6	-	-	8.6	9.2		-	-	-	**	**		
	Total	3.6	10.9	9.3	11.1	35.9	(97)	**	1.7	1.3	0.2	0.9		
	3Pn4RS	CAN	7.2	16.5	14.6	4.4	42.7		0.7	1.4	0.1	1.0	0.8	
DEN-F		...	...	...	...	6.1		...	...	...	...	**
FRA		17.2	0.9	-	-	18.1		**	-	-	-	**		
POR		10.1	-	-	-	10.1		**	-	-	-	**		
	Total	34.5	17.4	14.6	4.4	77.0	(100)	0.1	1.4	0.1	1.0	0.4		
	4TVn	CAN	13.1	7.5	7.7	5.1	33.4		1.3	2.6	4.4	0.8	2.3	
FRA		2.2	0.1	-	0.8	3.1		**	-	-	-	**		
SPA		1.9	-	-	-	1.9		**	-	-	-	**		
	Total	17.2	7.6	7.7	5.9	38.4	(97)	1.0	2.6	4.4	0.7	2.0		
	4Vsw	CAN	2.6	1.9	3.3	1.8	9.6		1.0	0.5	0.3	0.5	0.6	
SPA		3.9	1.4	1.1	4.7	11.1		**	**	-	**	**		
	Total	6.5	3.3	4.4	6.5	20.7	(86)	0.4	0.3	0.2	0.1	0.3		
	4X	CAN	1.3	4.6	6.9	3.3	16.1	(97)	1.0	0.2	0.6	1.0	0.6	
	5Y	USA	1.7	3.1	2.9	2.2	10.2	(100)	**	**	**	**	**	
	5Z	CAN	-	0.8	1.4	0.1	2.3		-	1.0	2.0	-	1.5	
USA		2.4	4.5	4.1	3.2	14.2		5.5	3.2	2.0	3.0	3.1		
	Total	2.4	5.3	5.5	3.3	16.5	(86)	5.5	3.4	1.7	3.0	2.8		
<u>HADDOCK</u>	4VW	CAN	0.2	0.5	0.4	0.2	1.3	(97)	(1.0)	1.0	(2.0)	(2.0)	6.0	
4X		CAN	4.0	4.6	5.9	1.8	16.3		3.5	2.2	2.0	4.0	2.8	
	USA	0.5	0.2	0.2	0.1	1.0		5.0	(3.0)	-	(1.0)	9.0		
	Total	4.5	4.8	6.1	1.9	17.3	(99)	3.8	2.8	2.0	4.5	3.2		

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter				Total for countries listed		Sampling efficiency				
			1	2	3	4		%	1	2	3	4	Total
HADDOCK (Cont'd)	5	CAN	0.1	0.8	0.6	-	1.5		-	4.0	3.0	(2.0)	4.5
		USA	0.9	1.8	0.9	1.2	4.8		14.0	7.5	4.0	3.0	7.2
		Total	1.0	2.6	1.5	1.2	6.3	(99)	14.0	6.3	3.5	5.0	7.5
REDFISH	1	DEN-G	0.4	0.4	0.9	1.0	2.7		-	-	3.0	-	1.0
		FRG	1.1	0.2	0.4	3.4	5.1		-	-	-	**	**
		USSR	0.1	-	3.7	2.0	5.8		-	-	**	**	**
		Total	1.6	0.6	5.0	6.4	13.6	(99)	-	-	0.6	**	0.2
	2+3K	CAN	0.1	0.3	2.9	0.6	3.9		-	(2.0)	1.7	3.0	2.5
		POL	2.2	0.4	0.5	0.9	4.0		2.5	(2.0)	-	-	1.8
		USSR	3.8	0.5	9.0	1.6	14.9		3.5	7.0	1.0	-	2.0
		Total	6.1	1.2	12.4	3.1	22.8	(88)	3.2	11.0	1.2	3.0	2.0
	3LN	CAN	-	1.0	2.3	3.2	6.5		-	4.0	3.5	1.7	2.3
		POL	0.1	-	-	-	0.1		(5.0)	-	-	-	5.0
		USSR	5.4	5.0	0.9	0.3	11.6		3.4	**	-	-	1.4
		Total	5.5	6.0	3.2	3.5	18.2	(89)	3.7	0.7	2.3	1.3	2.1
	3M	CAN	-	1.0	7.1	0.3	8.4		-	2.0	0.7	-	0.9
		USSR	-	4.5	3.5	0.1	8.1		(3.0)	1.0	**	-	1.0
		Total	-	5.5	10.6	0.4	16.5	(97)	(3.0)	1.2	0.5	-	0.9
30	CAN	-	0.8	2.9	-	3.7		-	1.0	1.0	-	1.0	
	USSR	1.2	3.1	3.9	3.5	11.7		-	13.0	**	**	3.3	
	Total	1.2	3.9	6.8	3.5	15.4	(100)	-	10.0	0.4	**	2.9	
3P	CAN	4.6	5.8	6.3	0.2	16.9	(88)	1.0	1.2	1.0	-	1.1	
4RST	CAN	24.5	3.7	8.5	0.7	37.4	(98)	0.6	0.3	**	1.0	0.4	
4VWX	CAN	1.5	4.4	6.0	0.7	12.6		-	0.2	**	-	0.1	
	USSR	0.2	0.4	0.3	0.1	1.0		(2.0)	(5.0)	-	-	7.0	
	USA	1.0	0.8	2.1	0.5	4.4		11.0	3.0	7.5	4.0	8.3	
	Total	2.7	5.6	8.4	1.3	18.0	(97)	4.3	1.5	1.9	4.0	2.3	
5	USA	1.9	3.7	2.8	1.8	10.2	(95)	6.0	6.8	8.3	8.0	8.0	
SILVER HAKE	4VWX	BUL	-	0.9	2.2	-	3.1		-	1.0	**	-	0.3
		CUBA	-	3.4	7.2	2.0	12.6		-	**	**	**	**
		USSR	17.2	21.0	28.2	14.8	81.2		4.5	28.5	5.6	1.9	10.6
		Total	17.2	25.3	37.6	16.8	96.9	(100)	4.5	24.0	4.1	1.7	8.9
	5Y	USA	1.9	1.1	4.6	2.2	9.8	(100)	7.5	2.0	0.8	1.0	2.3
	5Ze	CUBA	0.3	3.4	-	-	3.7		-	**	-	-	**
		USSR	22.4	15.5	-	0.1	38.0		0.4	10.8	(8.0)	-	5.0
		USA	-	0.1	3.6	0.1	3.8		-	-	3.5	(1.0)	3.8
	Total	22.7	19.0	3.6	0.2	45.5	(99)	0.4	9.1	5.5	(1.0)	4.4	
	5Zw+6	ROM	0.3	0.1	-	-	0.4		(1.0)	-	-	-	(1.0)
USSR		8.4	7.2	-	0.2	15.8		5.6	**	-	-	2.8	
USA		3.5	2.5	1.4	2.1	9.5		0.5	2.7	25.0	16.0	6.7	
Total		12.2	9.8	1.4	2.3	25.7	(98)	4.0	0.8	25.0	16.0	4.4	
RED HAKE	5Ze	USSR	2.5	1.6	2.3	10.3	16.7	(98)	0.7	15.5	9.0	2.6	4.5
	5Zw+6	ROM	+	-	-	-	+		(1.0)	-	-	-	(1.0)
		USSR	5.2	1.9	-	-	7.1		**	**	-	-	**
		USA	1.3	1.2	0.3	1.2	4.0		3.0	8.0	(25.0)	32.0	17.0
	Total	6.5	3.1	0.3	1.2	11.1	(100)	0.6	2.7	(25.0)	32.0	6.3	
POLLOCK	4VWX	CAN	1.0	7.8	7.3	5.4	21.5	(89)	4.0	1.3	1.7	1.8	1.6

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter				Total for countries listed	%	Sampling efficiency				
			1	2	3	4			1	2	3	4	Total
POLLOCK (Cont'd)	5	CAN	0.1	0.5	1.2	0.3	2.1		-	2.0	1.0	-	1.5
		USA	1.7	2.4	2.7	2.8	10.3		1.0	0.5	**	**	0.3
		Total	1.8	2.9	3.9	3.1	12.4	(92)	1.0	1.0	0.3	**	0.5
A. PLAICE	2+3K	CAN	0.1	0.7	1.2	0.5	2.5		-	-	2.0	2.0	2.0
		USSR	1.9	0.5	0.3	0.7	3.4		**	-	-	-	**
		Total	2.0	1.2	1.5	1.2	5.9	(97)	**	-	1.0	2.0	0.7
	3M	Total	0.3	0.2	0.5	0.2	1.2		(NO SAMPLES)				
	3LNO	CAN	7.7	11.9	18.0	10.2	47.8	(92)	1.3	1.3	0.9	0.7	1.0
	3Ps	CAN	0.8	0.5	1.3	2.8	5.4	(98)	3.0	3.0	1.0	1.3	2.2
	4VWX	CAN	2.2	2.0	1.5	1.3	7.0		0.5	**	**	-	0.1
		USSR	0.4	0.6	1.0	2.0	4.0		-	-	-	**	**
		Total	2.6	2.6	2.5	3.3	11.0	(99)	0.3	**	**	**	0.1
	5+6	USA	0.6	1.9	0.5	0.4	3.5	(99)	(NO SAMPLES)				
WITCH	2J+3KL	CAN	0.1	0.2	1.8	0.1	2.2		-	(1.0)	9.0	(3.0)	11.0
		POL	1.3	1.4	0.1	1.0	3.8		2.0	3.0	-	-	1.3
		USSR	0.8	0.6	0.5	1.1	3.0		-	-	-	-	-
		Total	2.2	2.2	2.4	2.2	9.0	(84)	1.0	2.0	9.0	1.5	3.0
	3NO	CAN	1.6	0.9	0.1	0.4	3.0	(50)	2.0	3.0	(1.0)	(5.0)	4.3
	3Ps	CAN	0.2	0.3	0.1	0.3	0.9	(96)	-	(1.0)	-	-	1.0
	4VWX	CAN	0.9	0.9	0.4	0.3	2.5						
		USSR	0.2	0.9	0.8	1.3	3.2						
		Total	1.1	1.8	1.2	1.6	5.7	(99)	(NO SAMPLES)				
	5+6	USA	0.3	0.8	0.6	0.2	1.9	(100)	(4.0)	5.0	5.0	0	7.0
YELLOWTAIL	3LNO	CAN	0.8	5.0	1.5	0.6	7.9	(98)	8.0	1.0	2.5	5.0	2.9
	4VWX	Total	-	0.4	0.3	0.2	0.9	(100)	(NO SAMPLES)				
	5+6	USA	2.7	3.6	6.4	4.4	17.1	(100)	7.3	6.5	4.5	3.8	5.3
G. HALIBUT	0+1	DEN-G	0.8	0.8	1.3	0.3	3.5		-	-	-	-	-
		GDR	-	-	-	0.2	0.2		-	-	-	(4.0)	(4.0)
		USSR	0.2	0.1	4.6	6.0	10.9		-	-	**	**	**
		Total	1.0	0.9	5.9	6.5	14.6	(92)	-	-	**	0.6	0.3
	2+3KL	CAN	-	2.0	6.0	1.3	9.3		-	2.0	1.8	2.0	1.9
		POL	1.3	2.3	1.6	0.7	5.9		2.0	2.0	-	-	1.0
USSR		1.9	0.6	3.1	1.2	6.8		**	-	16.3	-	7.0	
	Total	3.2	4.9	10.7	3.2	22.0	(89)	0.7	1.6	5.5	0.7	3.3	
WINTER FLO.	5+6	USA	1.0	2.0	1.8	1.9	6.7	(100)	14.0	7.5	15.0	5.5	10.0
SUMMER FLO.	5+6	USA	3.3	3.0	2.7	1.8	10.8	(100)	11.0	6.7	4.3	4.5	6.8
WINDOWPANE FLO.	5+6	USA	0.8	0.8	0.3	0.3	2.2	(100)	12.0	3.0	(2.0)	(4.0)	10.5
R. GRENADIER	0+1	GDR	-	-	-	0.2	0.2		-	-	-	(1.0)	(1.0)
		USSR	0.5	0.2	0.8	6.7	8.2		-	-	(193.0)	**	24.1
		Total	0.5	0.2	0.8	6.9	8.4	(99)	-	-	(193.0)	0.1	24.2
	2+3	GDR	0.1	-	0.3	0.1	0.5		(5.0)	-	-	-	5.0
		USSR	2.0	1.0	2.9	14.1	20.0		-	-	19.0	**	2.8
	Total	2.1	1.0	3.2	14.2	20.5	(100)	2.5	-	19.0	**	3.0	

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter				Total for countries listed		Sampling efficiency				
			1	2	3	4		%	1	2	3	4	Total
<u>HERRING</u>	3+4RST	CAN	2.8	40.6	6.1	31.1	80.6	(100)	(NO SAMPLES)				
	4V	CAN	-	0.1	-	10.3	10.4	(90)	-	-	-	6.3	6.3
	4WX	CAN	25.2	12.7	84.4	10.9	133.2		4.0	10.9	3.0	9.0	4.4
		USSR	0.6	1.7	0.1	-	2.4		-	14.5	-	-	14.5
		Total	25.8	14.4	84.5	10.9	135.6	(100)	3.9	12.2	2.9	9.0	4.6
	5Y	USA	4.8	11.6	22.6	10.4	49.4	(98)	6.8	0.4	1.0	1.5	1.6
	5Z+6	FRG	-	-	8.3	0.5	8.8		-	-	2.3	-	2.0
		GDR	-	-	6.8	1.1	7.9		-	-	3.6	4.0	3.6
		POL	0.1	-	5.7	4.7	10.5		(1.0)	-	0.5	1.2	1.0
		USSR	-	2.7	7.4	2.9	13.0		-	0.3	2.0	0.7	1.3
USA		0.2	0.5	0.1	-	0.8		(4.0)	-	-	-	4.0	
Total		0.3	3.2	28.3	9.2	41.0	(94)	(5.0)	0.3	2.1	1.3	1.9	
<u>MACKEREL</u>	3	CAN	-	-	2.1	3.2	5.3	(100)	-	-	11.0	5.7	7.8
	4	CAN	-	3.2	4.8	2.5	10.5		-	14.3	9.2	4.0	9.2
		USSR	5.1	4.9	2.4	4.1	16.5		**	5.4	1.5	**	1.8
		Total	5.1	8.1	7.2	6.6	27.0	(97)	**	8.7	7.4	1.8	5.0
	5+6	BUL	12.6	-	-	1.3	13.9		1.8	-	-	-	1.6
		CUBA	4.1	2.5	-	-	6.6		**	1.0	-	-	0.4
		GDR	23.6	8.5	-	6.0	38.1		0.4	5.2	-	0.7	1.6
		POL	26.6	8.1	1.9	14.9	51.5		1.1	1.1	-	1.3	1.1
		ROM	5.4	-	-	-	5.4		3.6	-	-	-	3.6
		USSR	88.5	0.2	-	-	88.7		3.6	(22.0)	-	-	3.8
USA		0.4	1.1	0.6	0.6	2.7		-	1.0	4.0	4.0	3.0	
Total	161.2	20.4	2.5	22.8	206.9	(99)	2.5	4.1	1.3	1.2	2.5		
<u>BUTTERFISH</u>	5+6	JAP	0.6	-	-	7.3	7.9		4.0	(1.0)	-	**	0.6
		USSR	0.3	-	-	0.1	0.4		-	-	(1.0)	-	(1.0)
		USA	0.1	0.2	0.4	0.5	1.2		(4.0)	-	(2.0)	-	6.0
	Total	1.0	0.2	0.4	7.9	9.5	(81)	8.0	(1.0)	(3.0)	**	1.2	
<u>ALEWIFE</u>	5+6	USSR	0.2	0.1	-	-	0.3		(3.0)	-	-	(1.0)	(4.0)
		USA	0.5	5.2	0.7	0.1	6.5		-	**	-	-	**
	Total	0.7	5.3	0.7	0.1	6.8	(82)	3.0	**	-	(1.0)	0.6	
<u>ARGENTINE</u>	4VWX	CUBA	-	-	0.1	-	0.1		-	-	(1.0)	-	(1.0)
		USSR	0.2	4.8	1.5	0.1	6.6		(7.0)	1.8	1.0	-	2.6
	Total	0.2	4.8	1.6	0.1	6.7	(96)	(7.0)	1.8	1.5	-	2.7	
<u>CAPELIN</u>	2+3K	CAN	-	1.2	0.5	-	1.7		-	-	-	(6.0)	3.0
		POL	-	0.2	6.8	3.5	10.5		-	-	**	**	**
		USSR	0.1	1.4	34.6	168.0	204.1		-	-	**	**	**
		Total	0.1	2.8	41.9	171.5	216.3	(100)	-	-	**	**	**
	3LNOP	BUL	-	1.3	-	-	1.3		-	5.0	-	-	5.0
		CAN	-	4.6	3.2	-	7.8		(10.0)	18.8	4.7	-	14.8
		ICE	-	6.0	2.8	-	8.8		-	**	-	-	**
		JAP	-	3.6	1.5	-	5.1		-	2.8	16.0	-	8.6
		NOR	-	18.0	5.2	-	23.2		-	1.4	0.9	-	1.3
		POL	-	1.7	2.9	-	4.6		-	-	**	-	**
USSR		-	87.0	6.0	-	93.0		-	**	**	-	**	
Total	-	122.2	21.6	-	143.8	(100)	(10.0)	1.1	2.3	-	1.4		
<u>SQUID-Illex</u>	3	CAN	-	-	6.6	3.3	9.9		-	-	**	**	**
		FRA	-	-	0.4	-	0.4		-	-	(2.0)	-	(2.0)
	Total	-	-	7.0	3.3	10.3	(91)	-	-	0.3	**	0.2	

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter				Total for countries listed	%	Sampling efficiency				
			1	2	3	4			1	2	3	4	Total
SQUID- <i>Illex</i> (Cont'd)	4	CUBA	-	1.5	1.6	0.1	3.2		-	-	1.0	-	0.7
		JAP	-	0.1	2.9	-	3.0		-	-	2.3	-	2.3
		USSR	0.1	6.8	9.6	0.1	16.6		-	42.9	28.5	-	34.4
		Total	0.1	8.4	14.1	0.2	22.8	(75)	-	37.5	20.4	-	25.8
	5+6	JAP	0.1	1.8	0.4	1.0	3.3		(11.0)	10.5	(31.0)	-	21.0
		POL	0.2	4.3	0.6	-	5.1		-	1.8	3.0	-	2.0
		SPA	0.2	2.6	0.7	0.6	4.1		-	**	-	-	**
		USSR	1.8	0.2	3.0	1.8	6.8		-	(22.0)	3.3	-	4.6
		USA	-	-	0.1	0.1	0.2		-	-	(2.0)	(1.0)	(3.0)
		Total	2.3	8.9	4.8	3.5	19.5	(78)	5.5	5.6	9.2	0.3	5.4
SQUID- <i>Loligo</i>	5+6	ITA	0.8	0.4	0.4	1.7	3.3		-	-	-	**	**
		JAP	4.0	0.4	-	0.6	5.0		22.0	(2.0)	-	-	8.0
		POL	1.2	-	0.1	0.4	1.7		-	(7.0)	-	-	3.5
		SPA	7.8	0.3	0.1	1.0	9.2		**	-	-	-	**
		USSR	0.8	-	-	-	0.8		8.0	(4.0)	-	-	12.0
		USA	0.1	1.0	0.1	-	1.2		(4.0)	8.0	(2.0)	-	14.0
		Total	14.7	2.1	0.7	3.7	21.2	(93)	2.3	10.5	2.0	**	2.7

Table 3. Summary of sampling efficiency by country and stock in relation to nominal catches (000 tons) for 1976.

	COD 1	COD 2GH	COD 2J+3KL	COD 3M	COD 3NO	COD 3Ps	COD 3Pn+4RS	COD 4TVn	COD 4VsW	COD 4X	COD 5Y	COD 5Z
BUL	-	-	-	-	-	-	-	-	-	-	-	-
CAN	-	-	63/2.2	-	2/2.0	23/1.4	43/0.8	33/2.3	10/0.6	16/0.6	-	2/1.5
CUBA	-	-	-	-	-	-	-	-	-	-	-	-
DEN-F	4/***	-	-	-	-	-	6/***	-	-	-	-	-
DEN-G	16/1.1	-	-	-	-	-	-	-	-	-	-	-
FRA	-	-	6/***	-	-	2/***	18/***	3/***	-	-	-	-
FRG	6/***	2/***	17/0.7	-	-	-	-	-	-	-	-	-
GDR	-	-	12/1.8	-	-	-	-	-	-	-	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	19/0.5	-	-	-	-	-	-	-	-	-
POR	3/***	-	38/0.1	10/2.3	3/***	-	10/***	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-
SPA	2/***	-	11/***	3/***	10/***	9/***	-	2/***	11/***	-	-	-
USSR	-	2/***	46/1.2	5/***	9/0.9	-	-	-	-	-	-	-
UK	-	-	-	-	-	-	-	-	-	-	-	-
USA	-	-	-	-	-	-	-	-	-	10/***	-	14/3.1
TOTAL (%)	30/0.6 (91)	4/*** (75)	211/1.3 (99)	17/1.4 (78)	24/0.5 (97)	36/0.9 (97)	77/0.4 (100)	38/2.0 (97)	21/0.3 (86)	16/0.6 (97)	10/*** (100)	17/2.8 (86)

	HAD 4VW	HAD 4X	HAD 5	RED 1	RED 2+3K	RED 3LN	RED 3M	RED 3O	RED 3P	RED 4RST	RED 4VWX	RED 5
BUL	-	-	-	-	-	-	-	-	-	-	-	-
CAN	1/6.0	16/2.8	2/4.5	-	4/2.5	7/2.3	8/0.9	4/1.0	17/1.1	37/0.4	13/0.1	-
CUBA	-	-	-	-	-	-	-	-	-	-	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	3/1.0	-	-	-	-	-	-	-	-
FRA	-	-	-	-	-	-	-	-	-	-	-	-
FRG	-	-	-	5/***	-	-	-	-	-	-	-	-
GDR	-	-	-	-	-	-	-	-	-	-	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	-	-	4/1.8	+5.0	-	-	-	-	-	-
POR	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-
SPA	-	-	-	-	-	-	-	-	-	-	-	-
USSR	-	-	-	6/***	15/2.0	12/1.4	8/1.0	12/3.3	-	-	1/7.0	-
UK	-	-	-	-	-	-	-	-	-	-	-	-
USA	-	1/9.0	5/7.2	-	-	-	-	-	-	-	4/8.3	10/8.0
TOTAL (%)	1/6.0 (97)	17/3.2 (99)	7/7.5 (99)	14/0.2 (99)	23/2.0 (88)	19/2.1 (89)	17/0.9 (97)	15/2.9 (100)	17/1.1 (88)	37/0.4 (98)	18/2.3 (97)	10/8.0 (95)

	HKS 4VWX	HKS 5Y	HKS 5Ze	HKS 5Zw+6	HKR 5Ze	HKR 5Zw+6	POK 4VWX	POK 5	PLA 2+3K	PLA 3M	PLA 3LNO	PLA 3Ps
BUL	3/0.3	-	-	-	-	-	-	-	-	-	-	-
CAN	-	-	-	-	-	-	-	-	-	-	-	-
CUBA	13/***	-	4/***	-	-	-	22/1.6	2/1.5	3/2.0	-	48/1.0	5/2.2
DEN-F	-	-	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	-	-	-	-	-	-	-	-	-
FRA	-	-	-	-	-	-	-	-	-	-	-	-
FRG	-	-	-	-	-	-	-	-	-	-	-	-
GDR	-	-	-	-	-	-	-	-	-	-	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	-	-	-	-	-	-	-	-	-	-
POR	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	+1.0	-	+1.0	-	-	-	-	-	-
SPA	-	-	-	-	-	-	-	-	-	-	-	-
USSR	81/10.6	-	38/5.0	16/2.8	17/4.5	7/***	-	-	3/***	-	-	-
UK	-	-	-	-	-	-	-	-	-	-	-	-
USA	-	10/2.3	4/3.8	10/6.7	-	4/17.0	-	10/0.3	-	-	-	-
TOTAL (%)	97/8.9 (100)	10/2.3 (100)	46/4.4 (99)	26/4.4 (98)	17/4.5 (98)	11/6.3 (100)	22/1.6 (89)	12/0.5 (92)	6/0.7 (97)	1/*** (100)	48/1.0 (92)	5/2.2 (98)

Table 3. (Cont'd)

	PLA 4VWX	PLA 5+6	WIT 2J+3KL	WIT 3NO	WIT 3Ps	WIT 4VWX	WIT 5+6	YEL 3LNO	YEL 4VWX	YEL 5+6	GHL 0+1	GHL 2+3KL
BUL	-	-	-	-	-	-	-	-	-	-	-	-
CAN	7/0.1	-	2/11.0	3/4.3	1/1.0	3/***	-	8/2.9	-	-	-	9/1.9
CUBA	-	-	-	-	-	-	-	-	-	-	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	-	-	-	-	-	-	-	4/***	-
FRA	-	-	-	-	-	-	-	-	-	-	-	-
FRG	-	-	-	-	-	-	-	-	-	-	-	-
GDR	-	-	-	-	-	-	-	-	-	-	+/4.0	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	4/1.3	-	-	-	-	-	-	-	-	5/1.0
POR	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-
SPA	-	-	-	-	-	-	-	-	-	-	-	-
USSR	4/***	-	3/***	-	-	3/***	-	-	-	-	11/***	7/7.0
UK	-	-	-	-	-	-	-	-	-	-	-	-
USA	-	4/***	-	-	-	-	2/7.0	-	-	17/5.3	-	-
TOTAL (%)	11/0.1 (99)	4/*** (100)	9/3.0 (84)	3/4.3 (50)	1/1.0 (96)	6/*** (99)	2/7.0 (100)	8/2.9 (98)	1/*** (100)	17/5.3 (100)	15/0.3 (92)	22/3.3 (89)

	FLW 5+6	FLS 5+6	FLD 5+6	RNG 0+1	RNG 2+3	HER 3+4RST	HER 4V	HER 4WX	HER 5Y	HER 5Z+6	MAC 3	MAC 4
BUL	-	-	-	-	-	-	-	-	-	-	-	-
CAN	-	-	-	-	-	81/***	10/6.3	133/4.4	-	-	5/7.8	11/9.2
CUBA	-	-	-	-	-	-	-	-	-	-	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	-	-	-	-	-	-	-	-	-
FRA	-	-	-	-	-	-	-	-	-	-	-	-
FRG	-	-	-	-	-	-	-	-	-	9/2.0	-	-
GDR	-	-	-	+/1.0	1/5.0	-	-	-	-	8/3.6	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	-	-	-	-	-	-	-	11/1.0	-	-
POR	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-
SPA	-	-	-	-	-	-	-	-	-	-	-	-
USSR	-	-	-	8/24.1	20/2.8	-	-	2/14.5	-	13/1.3	-	17/1.8
UK	-	-	-	-	-	-	-	-	-	-	-	-
USA	7/10.0	11/6.8	2/10.5	-	-	-	-	-	49/1.6	1/4.0	-	-
TOTAL (%)	7/10.0 (100)	11/6.8 (100)	2/10.5 (100)	8/24.2 (99)	21/3.0 (100)	81/*** (100)	10/6.3 (90)	136/4.6 (100)	49/1.6 (98)	41/1.9 (94)	5/7.8 (100)	27/4.0 (97)

	MAC 5+6	BUT 5+6	ALE 5+6	ARG 4VWX	CAP 2+3K	CAP 3LNOP	SQI 3	SQI 4	SQI 5+6	SQL 5+6
BUL	14/1.6	-	-	-	-	1/5.0	-	-	-	-
CAN	-	-	-	-	2/3.0	8/14.8	10/***	-	-	-
CUBA	7/0.4	-	-	+/1.0	-	-	-	3/0.7	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	-	-	-	-	-	-	-
FRA	-	-	-	-	-	-	+/2.0	-	-	-
FRG	-	-	-	-	-	-	-	-	-	-
GDR	38/1.6	-	-	-	-	-	-	-	-	-
ICE	-	-	-	-	-	9/***	-	-	-	-
ITA	-	-	-	-	-	-	-	-	3/***	-
JAP	-	8/0.6	-	-	-	5/8.6	-	3/2.3	3/21.0	5/8.0
NOR	-	-	-	-	-	23/1.3	-	-	-	-
POL	52/1.1	-	-	-	11/***	5/***	-	5/2.0	2/3.5	-
POR	-	-	-	-	-	-	-	-	-	-
ROM	5/3.6	-	-	-	-	-	-	-	-	-
SPA	-	-	-	-	-	-	-	4/***	9/***	-
USSR	89/3.8	+/1.0	+/4.0	7/2.6	204/***	93/***	-	17/34.4	7/4.6	1/12.0
UK	-	-	-	-	-	-	-	-	-	-
USA	3/3.0	1/6.0	7/***	-	-	-	-	+/3.0	1/14.0	-
TOTAL (%)	207/2.5 (99)	10/1.2 (81)	7/0.6 (82)	7/2.7 (96)	216/*** (100)	144/1.4 (100)	10/0.2 (91)	23/25.8 (75)	20/5.4 (78)	21/2.7 (93)

