

DEMERSAL FISH COMMITTEE

by
A. C. Burd

1982

BELGIUM

(R. De Clerck & P. Hovart)

The determination of the density and the growth per year class of sole, plaice, dab, flounder and gadoids along the Belgian coast has been continued on the R.V. "Hinders".

Two cruises were carried out for the demersal young fish survey in collaboration with the Netherlands, Federal Republic of Germany and France.

The market sampling was continued covering cod (North Sea), whiting (North Sea), haddock (North Sea), plaice (North Sea, English Channel, Celtic Sea, Irish Sea), sole (North Sea, English Channel, Celtic Sea and Irish Sea).

Species Area	Season	No. of Samples		No of samples	
		Research	Market	Measured	Aged
Sole IV	1	-	12	1259	209
	2	-	11	1237	200
	3	-	6	577	200
	4	-	12	1060	200
VII f, g	1	-	11	1146	210
	2	-	5	651	140
	3	-	4	289	200
	4	-	12	1047	210
VIIa	1	-	3	210	210
	2	-	11	1132	200
	3	-	-	-	-
	4	-	2	120	120
VII d, e	1	-	3	200	200
	2	-	3	252	140
	3	-	2	140	140
	4	-	2	140	140
Plaice IV	1	-	12	722	130
	2	-	10	580	140
	3	-	6	263	132
	4	-	12	689	150
VII f, g	1	-	11	637	130
	2	-	5	332	80
	3	-	4	188	140
	4	-	12	626	140
VIIa	1	-	3	120	120
	2	-	10	574	123
	3	-	-	-	-
	4	-	1	40	40
VII d, e	1	-	3	150	150
	2	-	3	155	90
	3	-	2	90	90
	4	-	2	100	100
Cod IV	1	-	5	270	270
	2	-	6	295	295
	3*	-	5	238	238
	4	-	4	225	225
Whiting IV	1	-	5	150	150
	2	-	6	170	170
	3	-	4	120	120
	4	-	6	160	160
Haddock IV	1-4	-	2	259	
			3	237	
			1	51	
			1	68	

Canada

(No report received)

DENMARK

(Per Sparre)

The following sampling of length and age distributions has been carried out in 1982.

COD.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
North Sea	1	consum. *)	-	24	622	622	-
	2	"	-	24	543	543	-
	3	"	-	20	423	423	-
	4	"	-	28	561	561	-
Skager-rak	1	consum.	-	19	406	406	-
	2	"	-	11	190	190	-
	3	"	-	18	361	361	-
	4	"	-	15	354	354	-
Katte-gat	1	consum.	-	16	423	423	-
	2	"	-	24	661	661	-
	3	"	-	10	288	288	-
	4	"	-	25	492	492	-
Belt Sea	1	consum.	-	5	184	184	-
	2	"	-	0	0	0	-
	3	"	-	5	268	268	-
	4	"	-	6	248	248	-
Baltic	1	consum.	-	0	0	0	-
	2	"	-	0	0	0	-
	3	"	-	0	0	0	-
	4	"	-	6	348	348	-

*) for human consumption.

COD.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
IVa	1	industr.	-	3	3	3	-
	2	"	-	2	2	2	-
	3	"	-	1	1	1	-
	4	"	-	2	3	3	-
IVb	1	industr.	-	7	9	8	-
	2	"	-	2	2	2	-
	3	"	-	2	2	2	-
	4	"	-	-	-	-	-
IVc	1	industr.	-	-	-	-	-
	2	"	-	-	-	-	-
	3	"	-	-	-	-	-
	4	"	-	-	-	-	-
North Sea Total	1	industr.	-	10	12	11	-
	2	"	-	4	4	4	-
	3	"	-	3	3	3	-
	4	"	-	2	3	3	-

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
Skager-rak	1	industr.	-	10	71	71	-
	2	"	-	14	38	38	-
	3	"	-	24	654	654	-
	4	"	-	42	955	952	-
Katte-gat	1	industr.	-	3	32	32	-
	2	"	-	3	11	11	-
	3	"	-	1	64	64	-
	4	"	-	17	296	296	-
Baltic	1	industr.	-	1	4	4	-
	2	"	-	-	-	-	-
	3	"	-	-	-	-	-
	4	"	-	-	-	-	-

WHITING.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
IVa	1	industr.	-	22	146	145	-
	2	"	-	3	7	7	-
	3	"	-	5	9	9	-
	4	"	-	25	60	59	-
IVb	1	industr.	-	12	740	678	-
	2	"	-	8	20	15	-
	3	"	-	6	46	46	-
	4	"	-	10	31	25	-
IVc	1	industr.	-	-	-	-	-
	2	"	-	-	-	-	-
	3	"	-	-	-	-	-
	4	"	-	-	-	-	-
North Sea Total	1	industr.	-	34	886	823	-
	2	"	-	11	27	22	-
	3	"	-	11	55	55	-
	4	"	-	35	91	84	-

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
Skager-rak	1	industr.	-	13	634	634	-
	2	"	-	14	265	265	-
	3	"	-	18	594	594	-
	4	"	-	38	1547	1547	-
Katte-gat	1	industr.	-	3	162	162	-
	2	"	-	3	27	27	-
	3	"	-	3	71	71	-
	4	"	-	17	769	769	-

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
IVa	1	industr.	-	25	271	247	-
	2	"	-	8	51	51	-
	3	"	-	17	92	92	-
	4	"	-	27	111	108	-
IVb	1	industr.	-	6	26	26	-
	2	"	-	3	4	4	-
	3	"	-	-	-	-	-
	4	"	-	1	1	1	-
IVc	1	industr.	-	-	-	-	-
	2	"	-	-	-	-	-
	3	"	-	-	-	-	-
	4	"	-	-	-	-	-
North Sea Total	1	industr.	-	31	297	273	-
	2	"	-	11	55	55	-
	3	"	-	17	92	92	-
	4	"	-	28	112	109	-

Skager-rak	1	industr.	-	12	281	281	-
	2	"	-	12	89	89	-
	3	"	-	25	612	612	-
	4	"	-	44	423	423	-
Katte-gat	1	industr.	-	3	24	24	-
	2	"	-	-	-	-	-
	3	"	-	2	93	93	-
	4	"	-	14	59	59	-

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
North Sea	1	consum.*)	-	3	225	225	-
	2	"	-	3	304	304	-
	3	"	-	3	307	307	-
	4	"	-	5	637	637	-
Skager-rak	1	consum.	-	3	265	265	-
	2	"	-	3	315	315	-
	3	"	-	3	324	324	-
	4	"	-	1	123	123	-

*) for human consumption.

NORWAY POUT.

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Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
IVa	1	industr.	-	24	2719	2719	-
	2	"	-	9	1063	1063	-
	3	"	-	28	2871	2742	-
	4	"	-	39	4463	4463	-
IVb	1	"	-	1	121	121	-
	2	"	-	-	-	-	-
	3	"	-	-	-	-	-
	4	"	-	-	-	-	-
IVc	1	industr.	-	-	-	-	-
	2	"	-	-	-	-	-
	3	"	-	-	-	-	-
	4	"	-	-	-	-	-
North Sea Total	1	industr.	-	25	2935	2840	-
	2	"	-	9	1063	1063	-
	3	"	-	28	2871	2742	-
	4	"	-	39	4463	4463	-

Skager-rak	1	industr.	-	5	145	145	-
	2	"	-	10	625	625	-
	3	"	-	12	877	877	-
	4	"	-	32	2590	2589	-
Katte-gat	1	industr.	-	3	38	38	-
	2	"	-	2	4	4	-
	3	"	-	1	75	75	-
	4	"	-	17	295	294	-

SANDEEL.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
IVa	1	industr.	-	-	-	-	-
	2	"	-	2	202	202	-
	3	"	-	-	-	-	-
	4	"	-	-	-	-	-
IVb	1	industr.	-	2	213	213	-
	2	"	-	75	11511	10551	-
	3	"	-	10	1094	771	-
	4	"	-	-	-	-	-
IVc	1	industr.	-	-	-	-	-
	2	"	-	4	432	432	-
	3	"	-	4	424	424	-
	4	"	-	-	-	-	-
North Sea Total	1	industr.	-	2	213	213	-
	2	"	-	81	12145	11185	-
	3	"	-	14	1518	1195	-
	4	"	-	-	-	-	-

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
Skager-rak	1	industr.	-	-	-	-	-
	2	"	-	9	1059	1059	-
	3	"	-	3	246	222	-
	4	"	-	3	324	218	-

COMMON SOLE.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
North Sea	1	consum.*)	-	0	0	0	-
	2	"	-	4	912	912	-
	3	"	-	0	0	0	-
	4	"	-	0	0	0	-
Katte-gat	1	consum.	-	2	257	257	-
	2	"	-	2	239	239	-
	3	"	-	0	0	0	-
	4	"	-	2	256	256	-

PLAICE.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
North Sea	1	consum.*)	-	16	1488	1488	-
	2	"	-	14	1187	1187	-
	3	"	-	14	1114	1114	-
	4	"	-	14	1195	1195	-
Skager-rak	1	consum.	-	8	920	920	-
	2	"	-	7	711	711	-
	3	"	-	10	1042	1042	-
	4	"	-	10	1099	1099	-
Katte-gat	1	consum.	-	19	2035	2035	-
	2	"	-	18	1930	1930	-
	3	"	-	14	1371	1371	-
	4	"	-	16	1546	1546	-

DAB.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
Katte-gat	1	consum.*)	-	1	191	191	-
	2	"	-	2	278	278	-
	3	"	-	1	207	207	-
	4	"	-	1	187	187	-

*) for human consumption.

SAITHE.

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
Skager-rak	1	industr.	-	-	-	-	-
	2	"	-	-	-	-	-
	3	"	-	1	1	1	-
	4	"	-	1	1	-	-
Katte-gat	1	industr.	-	-	-	-	-
	2	"	-	-	-	-	-
	3	"	-	-	-	-	-
	4	"	-	3	3	1	-

Area	Season	Type of fish	No of samples		No of fish		
			Research vessel	Market	Measured	Aged	Examined racially
North Sea	1	consum. *)	-	4	400	400	-
	2	"	-	4	371	371	-
	3	"	-	7	814	814	-
	4	"	-	1	74	74	-
Skager-rak	1	consum.	-	-	-	-	-
	2	"	-	-	-	-	-
	3	"	-	1	233	233	-
	4	"	-	6	342	342	-

*) for human consumption.

Activities in Greenland Waters (Sub-area XIVb)

In the Angmagssalik Fjord (65°45'N 37°08'W) 1 164 cod have been tagged with T-bar (Spaghetti tag) (DA 4 10 150 - 11 318). From the local fishery 52 recaptures have been reported until 1 February 1983.

Faroes (A. Kristiansen)

In 1982 the new R/V Magnus Heinason operated as research vessel for 9 months and as a commercial fishing vessel the rest of the year.

The distribution of the demersal fish stocks, especially cod, haddock and saithe was investigated during three stratified bottom trawl surveys in February and March. Each of these surveys were designed for respectively saithe, cod and haddock. The annual 0-group fish survey was carried out in July as in previous years. During a bottom trawl survey in July-August the distribution of 0-group haddock was investigated.

The effect of different mesh size in the blue ling fisheries was investigated during a cruise in April. To investigate the distribution of industrial and deepwaters fish species around the Faroes experimental fishing was carried out in May, June, August, September and October. During these cruises the bycatch of traditional humanconsumption fish species in the industrial fishing was investigated.

During all cruises sampling of the catches has been undertaken. The sampling procedure include weight, length, age, sex and maturity.

In 1982 market sampling continued following the same procedure as previous years. The sampling is mainly directed toward catches of cod, haddock and saithe taken in the Faroese Waters. The number of samples measured and aged respectively is shown in the table below.

Market sampling 1982. (Faroes)

Species	Area	Quarter	Measured		Aged	
			No. of samples	No. of fish	No. of samples	No. of fish
<u>Cod</u>	Vb ₁	1	18	3487	12	594
		2	19	9899	12	600
		3	21	5508	13	650
		4	20	4281	20	967
		total	78	23175	57	2811
	Vb ₂	1	2	529	2	100
		2	3	624	2	100
		3	4	901	1	50
		total	9	2054	5	250
<u>Haddock</u>	Vb ₁	1	4	829	3	136
		2	6	1827	5	250
		3	8	2223	6	300
		4	10	2449	8	400
		total	28	7328	22	1086
	Vb ₂	1	1	665	1	49
		2	4	915	3	150
		3	7	1906	3	150
		total	12	3486	7	349
<u>Saithe</u>	Vb	1	5	1065	4	200
		2	12	2954	7	350
		3	13	2323	6	277
		4	7	1288	5	250
		total	37	7630	22	1077
<u>Redfish</u> <u>Ling</u> <u>Blue ling</u>	Vb	4	4	927		
	Vb	3	1	34		
	Vb	2	17	4088		
		4	2	199		
		total	19	4287		

FINLAND

(V. Sjöblom & E. Aro)

No work was carried out on demersal fish other than that reported to the Baltic Fish Committee.

FRANCE

(No report received)

GERMAN DEMOCRATIC REPUBLIC

(B. Vaske)

Sampling data

Species/ Area	Season Quarter	No. of Samples		No. of fish	
		Research vessel	Commercial vessel	Measured	Aged
<u>Redfish</u> <u>(S.mentella)</u>					
II a	III		14	2250	713
II b	III		4	506	95
	III	27		6016	1516
<u>Greenland halibut</u>					
II b	III	27		3975	1079
<u>Cod</u>					
II b	III	13		73	

Research vessel survey

Area	Date	Objective
Spitsbergen (Svalbard)	22.7.-28.7.	Redfish - Greenland halibut survey

FEDERAL REPUBLIC OF GERMANY

(G. Rauck)

The biological sampling programme of demersal species on board research vessels, commercial trawlers and on fish markets has been continued.

This sampling scheme, including length frequency measurements, otolith samplings, single weights of fish, tagging of fish, stomach sampling, as well as studies on fish density and distribution of demersal fish species were carried out during ground fish surveys.

Joint investigations in the Wadden Sea area of Niedersachsen and Schleswig-Holstein have been continued in spring and autumn together with vessels from the Netherlands and Belgium in order to assess the year class strength of mainly plaice and sole.

Experiments on sole selectivity with beam trawls have been continued on board commercial vessels using 70, 80 and 90 mm mesh openings. Investigations on cod discards in the commercial fisheries and cod selectivity studies using mesh sizes above 80 mm mesh openings were carried out in the German Bight.

Due to increasing commercial importance of blue ling, grenadier, and Hoplostethus in ICES Sub-areas VI, VI, VII, catfish and Greenland halibut in ICES Sub-area XIV, the German biological sampling scheme for these species has been intensified mainly on board research vessels.

Research vessel cruises related to the national sampling scheme of the demersal species were as follows :

R.V. "Walther Herwig"

Months	ICES area	Objectives
February	VIII, VII, VI, V	Groundfish and pelagic survey
June	X + XII	Groundfish and pelagic survey
Sept.-Oct.	XIV	Groundfish survey
<u>R.V. "Anton Dohrn"</u>		
January	IVb	Groundfish survey
February	IVabc	IYFS
June	IVb	Groundfish survey
July-August	I, IIa, IIb	Groundfish survey

R.V. "Solea"

Months	ICES Area	Objectives
January	IVb, IVc	Groundfish survey
April	IVb	Sole beamtrawl survey
May	IVb	Groundfish survey
June	IVb	Set net, sole, turbot
September	IVab	Groundfish survey
Nov./Dec.	IVb	Groundfish survey

Species Area	Season	Research Vessel Samples				No. of Samples	Market Samples	
		No. of Fish		Racial Investigation	No. Of Fish			
		Measured	Aged		Measured		Aged	
Cod: ; IIa	I					4	1138	572
	II					2	418	227
	III	33	312	318				
	IV							
IIb	I							
	II							
	III	30	747	754				
	IV							
IVa	I	36	176	176				
	II							
	III	58	1089	419				
	IV							
IVb	I	89	12907	2049		1	1848	
	II	166	1491			3	1164	977
	III	129	323	10				
	IV	180	19252	1757		7	7310	748
IVc Va	I		2286	564				
	I-II	19	1367					
	III	6	1903	417				

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Species Area	Season	Research Vessel Samples				No. of Samples	Market Samples	
		No. of Fish		Racial Investigation	No. Of Fish			
		Measured	Aged		Measured		Aged	
Cod								
VIa	II	15	114	102				
	III	34	203	263				
VIb	III	10	100	100				
VIIb	II	19	95	94				
	III	15	38	38				
VIIjg	III	2	6	-				
XIV	I					3	1048	
	II	14	1854	587			349	
	III	21	303	120		2	521	
	IV					2	467	
	III-IV	61	767	766			384	
Haddock								
IIa	I					4	846	
	II					2	237	
	III	27	399	399			425	
IIb	III	7	8	6			130	
IVa	I	39	9735	2422				
	II	2	757	422				
	III	80	470	70				
IVb	I	43	257			1	334	
	III	22	389			9	587	
IVc	I	43	93				332	
							1331	

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Species Area	Season	Research Vessel Samples				Species Area	Season	Research Vessel Samples		
		No. of Samples	No. of Fish Measured	Aged	Racial Investigation			No. of Samples	No. of Fish Measured	Aged
<u>Haddock</u>						<u>Whiting</u>				
Va	II	14	2742	1171		IVa	I	39	4547	905
VIa	II	4	3012	411		IVb	I	77	4829	212
	III	10	9217	891			II	81	387	
VIIb	II	5	3234	349			III	22	818	
	III	17	7096	1301			IV	60	941	
VIIb	I	1	480	234		IVc	I	18	1009	
VIIb,c	I	2	24	24			II			
	II	10	1685	429			III	3	107	
VIIb	III	2	1503	182		VIa	I	39	4547	905
VIIg,k	II	2	136	18			II	16	2460	
VIIj,g	III	2	181	8			III	40	3175	
						VIIb	I	23	1338	212
						VIIbc	II	10	143	
							III	14	433	
						VIIgk	II	16	1055	
							III	3	72	
						VIIc	III	4	103	

Species Area	Season	Research Vessel Samples				Market Samples		
		No. of Samples	No. of Fish		Aged	No. of Samples	No. Of Fish	
			Measured	Racial Investigation			Measured	Aged
Saithe :								
Ila	I				5	1602	747	
	II				6	1742	675	
	III							
Iva	I	1	1686	647				
	II	1	211	211	2	747	393	
	III	1	58	58	9	3295	1764	
	IV					1657	867	
Va	II	1	567	567	5	836	444	
Vb	I				2	357	199	
Vla	I				1	417	223	
Vlb	III	1	79	79				
Blue Ling								
Va	II	1	111	111				
Vb	I	1	492	492	1	185	109	
	III				2	341	200	
	IV				2	363	102	
Vla	I	1	489		1	170	91	
Vlb	I	1	157	157				
	IV	1	158	158				
XIV	II							
	III	1	127	127	3	515	191	
	IV				8	1508	547	
					3	572	542	

Species Area	Season	Research Vessel Samples				No. of Samples	Market Samples		
		No. of Samples	No. of Fish		Racial Investigation		No. of Samples	No. Of Fish	
			Measured	Aged				Measured	Aged
Norway : <u>Pout</u>	I	7	451						
IVa	I	25	3514						
IVb									
<u>Poorcod</u>									
IVb	I	2	96						
IVc	I	4	186						
<u>Plaice</u>									
IVb	I	21	10238					3002	744
	II	181	14452					3113	569
	III	39	6856					2750	447
IV	IV	162	12690					3217	448
<u>Sole</u>									
IVb	I	5	40					146	
	II	174	20147	1111				141	141
	III	5	128					474	472
IV	IV	18	857					515	510

Species Area	Season	Research Vessel Samples				No. of Samples	Market Samples		
		No. of Fish		Aged	Racial Investigation		No. of Samples	No. Of Fish	
		Measured						Measured	Aged
<u>Dab</u> IVb	I	31	2878						
	II	36	1005						
	III	38	682						
	IV	82	6244						
	I	4	481						
<u>IVc</u>									
	I	11	327						
	II	28	1603						
	III	4	43						
	IV	12	340						
<u>IVc</u>	I	1	124						
<u>Turbot</u> IVb	I						1	30	30
	II	2	368	368			2	201	201
	III						2	128	128
	IV						1	105	105
<u>Greenland Halibut</u> V + XIV									
	III		160	160		4		239	239

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Species Area	Season	Research Vessel Samples				No. of Samples	Market Samples		
		No. of Samples	No. of Fish		Aged		No. of Samples	No. of Fish	
			Measured	Racial Investigation				Measured	Aged
Catfish <u>A. lupus</u> <u>A. minor</u>	II	1	72	68					
	II	1	62	62					
	III+IV	1	265	42					
	III+IV	1	50	2					
	I	3	907	907					
	III	5	1583	415					
	III	2	90	70					
	III	3	101	85					
	III	3	179	115					
	VI+VII								
VIa									
VIIbc									
VIIgk									

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Species Area	Season	Research Vessel Samples				No. of Samples	Market Samples	
		No. of Fish		Racial Investigation	No. of Fish		Aged	
		Measured	Aged					Measured	Aged
Redfish <u>S. marinus</u> IIa	I				1		194	
	II				3	367	415	
	III	9	1 860	346		959		
	III	3	524	122				
IIb XIV	I				3	907	150	
	II	38	5 492	361	2	669	150	
	IV	36	9 222	607				
<u>S. mentella</u> IIa Vb	III	4	623	-				
	I	2	244	116				
	II				3	1 106	341	
	III				1	341	-	
XIV	IV				2	775	247	
	II	19	3 354	243	3	872	400	
	III	26	3 711	-	6	2 947	600	
<u>Grenadier Fishes</u> <u>Macrourus</u> <u>Berglax</u> XIV	IV	12	555	480				
<u>Coryphaenoides</u> <u>Rupstris</u> VIa	I	20	3 819	722				

ICELAND

(J. Magnússon & S. A. Schopka)

In general the research work on demersal species was carried out along the same lines as previously. There were, however, made some changes in the research activities. Thus, a groundfish survey for stock biomass estimates, particularly designed to facilitate the estimate of the cod stock biomass, was initiated. But the survey was also supposed to cover some other demersal species. The special programmes on the behaviour of cod and on spawning cod were discontinued. The programme on feeding habits of demersal fish was continued and the collection of data extended to collecting on board commercial trawlers.

The three branches of the Marine Research Institute were operated with unchanged tasks. The fishery inspectors continued to collect data on demersal fish, particularly cod on board commercial vessels.

The research vessel activities were further decreased because of the limited budget for the operation of the vessels.

In connection with the 0-group survey, some effort was directed to research on the redfish nursery ground off East Greenland as well as on cod. In the same area 1853 cod were tagged.

During 1982 a big fishery on the oceanic stock of redfish took place in the Irminger Sea. On a cruise of R.V. "Hafthór" in May some research was directed to the area where a big Soviet fleet was engaged in this fishery.

The number of sampled demersal fish is shown in the attached table.

Iceland -- Sampling data for Cod 1982

Area	Season	No. of samples		No. of fish		
		Research vessels	Market samples	Measured	Aged	Tagged
Va	Jan-March	368		29625	3406	-
"			47	7432	2503	-
"	Apr.-June	214		27935	689	-
"			29	3837	1605	-
"	July-Sept.	237		42383	801	-
"			10	1011	500	-
"	Oct-Dec.	289		36426	1537	-
"			21	2681	1000	-
Total		1108	107	151330	12041	
XIV	July-Sept.	44		687	542	1853

Iceland - Sampling data for Haddock 1982

Area	Season	No. of samples		No. of fish		
		Research vessels	Market samples	Measured	Aged	Tagged
Va	Jan-March	139		9059	1183	-
"			15	1693	901	-
"	Apr.-June	103		7168	799	-
"			17	1762	1002	-
"	July-Sept.	106		9199	731	-
"			12	1789	300	-
"	Oct.-Dec.	101		6134	397	-
"			23	2592	1000	-
Total		449	67	39396	6313	-
XIV	July-Sept.	10		75		

Iceland - Sampling data for saithe 1982

Area	Season	No. of samples			No. of fish	
		Research vessels	Market samples	Measured	Aged	Tagged
Va	Jan.-March	59		2030	125	-
"			15	1085	772	-
"	Apr.-June	26		1458	202	-
"			5	560	200	-
"	July-Sept.	29		740	178	-
"			12	1050	600	-
"	Oct.-Dec.	31		1525	214	-
"			6	874	300	-
Total		145	38	9322	2591	

Iceland - Sampling data for Norway pout 1982

Area	Season	No. of samples			No. of fish	
		Research vessels	Market samples	Measured	Aged	Tagged
Va	Jan.-March	1		56		
"	Apr.-June	1		219	50	
"	July-Sept.	1		14		
"	Oct.-Dec.	1		677		
Total				966	50	

Iceland - Sampling data for blue ling

Area	Season	No. of samples		Number of fish	
		Research vessels	Market samples	Measured	aged
Va	Jan.-Mar.	11	0	22	4
"	"	0	6	805	398
"	Apr.-Jun.	58	0	176	869
"	"	0	3	243	200
"	Jul.-Sep.	23	0	0	116
"	Oct.-Dec.	28	0	0	218
"	"	0	1	0	107
Grand total		120	10	1246	1912

Iceland - Sampling data for halibut 1982

Area	Season	No. of samples		Number of fish		
		Research vessels	Market samples	Measured	Aged	Tagged
Va	Jan.-Mar.	2	2	169		
"	Apr.-Jun.	2	1	26	69	69
"	Jul.-Sep.	3	1	124	50	
"	Oct.-Dec.		1	108		
Grand total				427	119	69

Iceland - Sampling data for roughhead grenadier 1982

Area	Season	No. of samples		No. of fish	
		Research vessels	Market samples	Measured	Aged
Va	Jan.-Mar.	2	0	2	0
"	Apr.-Jun.	14	0	131	54
"	Jul.-Sep.	3	0	0	11
Total		19	0	133	65

Iceland - Sampling data for whiting

Area	Season	No. of samples		No. of fish	
		Research vessels	Market samples	Measured	Aged
Va	Jan.-Apr.	11	0	121	0
"	Apr.-Jun.	15	0	159	0
"	Jul.-Sep.	6	0	44	0
"	Oct.-Dec.	19	0	104	0
Total		51	0	428	0

Iceland - Sampling data for ling 1982

Area	Season	No. of samples		No. of fish	
		Research vessels	Market samples	Measured	Aged
Va.	Jan.-Mar.	7	0	17	0
"	Apr.-Jun.	17	0	18	8
"	- " -	0	3	192	83
"	Jul.-Sep.	5	0	9	0
"	Oct.-Dec.	9	0	35	0
"	- " -	0	1	18	0
Total		38	4	289	91

Iceland - Sampling data for tusk 1982

Area	Season	No. of samples		No. of fish	
		Research vessels	Market samples	Measured	Aged
Va.	Jan.-Mar.	51	0	122	65
"	Apr.-Jun.	45	0	25	77
"	Jul.-Sep.	19	0	0	46
XIV	- " -	3	0	0	3
V	Oct.-Dec.	36	0	0	78
"	- " -	0	2	174	100
Total		154	2	321	369

Iceland - Sampling data for plaice

Area	Season	No. of samples		No. of fish		
		Research vessels	Market samples	Measured	Aged	Tagged
	Jan.-Mar.	6		900		
	Apr.-Jun.	9	3	2842	726	2000
	Jul.-Sept.	1	13	2320	802	
	Okt.-Dec.	12	13	4486	1264	2087
Total		28	29	10548	2792	4087

Iceland - Sampling data for Catfish (*A. lupus*) 1982

Area	Season	No. of samples		No. of fish		
		Research vessels	Market samples	Measured	Aged	Tagged
Va.	Jan.-Mar.	2	3	2694		
"	Apr.-Jun.	2	8	2246	1290	1612
"	Jul.-Sep.	2	2	1309		
"	Okt.-Dec.	1	1	58		80
Total				8307	1290	1692

Iceland - Sampling data for Greenland halibut 1982

Area	Season	No. of samples		No. of fish		
		Research vessels	Market samples	Measured	Aged	Tagged
	Jan.-Mar.	1	4	1011	200	
	Apr.-Jun.	6	13	4134	1140	
	Jul.-Sep.		11	3270	400	
	Oct.-Dec.					
	Total	7	28	8415	1740	

Iceland - Sampling data for silver smelt 1962

Area	Season	No. of samples		No. of fish		
		Research vessels	Market samples	Measured	Aged	Tagged
Va	Jan.-Mar.	3	0	4		
"	Apr.-Jun.	47	0	3318	409	
"	Jul.-Sep.	23	0	458	101	
XIV	- " -	2	0	2	3	
Va	Oct.-Dec.	32	0	1291		
Grand total		107	0	5073	513	

Iceland - Sampling data for redfish 1982

Area	Season	No. of samples		No. of fish	
		Research vessels	Market samples	Measured	Aged
<u>S. marinus</u>					
Va	Jan.-March	181		10088	
"	"		10	1686	300
"	Apr.-June	101		8692	220
"	"		10	1271	300
"	July-Sept.	87		13038	
"	"		11	2045	500
XIV	"	13		710	100
Va	Oct.-Dec.	120		8856	
"	"		15	3605	300
Sub total		502	46	49991	1720

<u>S. mentella</u>					
Area	Season	No. of samples		No. of fish	
		Research vessels	Market samples	Measured	Aged
Va	Jan.-March	1	1	299	
"	Apr.-June	50		5909	95
"	"		9	1233	128
"	July-Sept.	6		571	100
XIV	"	1		1	
Va	Oct.-Dec.	14		1363	
"	"		2	384	
Sub total		72	12	9760	323

Iceland - Sampling data for redfish. S. viviparus

Area	Season	No. of samples		No. of fish.	
		Research vessels	Market samples	Measured	Aged
Va	Apr.-June	48		2325	
"	July-Sept.	20		943	
"	Oct.-Dec.	43		2108	
Sub total		111		5376	
Grand total		685	58	65127	2043

IRELAND

(J.P. Hillis)

Port sampling of the commercial catch of cod, whiting and plaice in Divisions VIa and VIIa and of haddock in VIa continued, with stomach contents of cod and separate sampling of whiting from the Nephrops fishery in VIIa. Samples of mixed commercial species in the catch prior to sorting and in discards in the Killybegs based demersal fishery were also taken as shown in the table with a view to assessing the amount of fish discarded.

Plaice

Beam trawl surveys for juvenile plaice conducted in shallow water off the east coast of Ireland in May and September yielded the following numbers of fish:

Month	May	September		Total overall
No. of hauls	39	37		
Age-group	1	0	1	
Male	443	266	252	961
Female	403	217	246	866
Total	846	483	498	1 827

Numbers of commercial species in mixed samples
in the Killybegs, VIa, fishery

Season	No. of samples	S P E C I E S			
		Cod	Haddock	Whiting	Plaice
A: Catch prior to sorting					
1	1	-	5	128	14
2	1	-	2	85	1
3	2	-	51	427	7
4	1	-	47	213	10
Total	5		105	856	32
B: Discards					
1	2	2	14	190	84
2	1	-	22	96	6
3	3	-	151	420	35
4	1	-	4	111	14
Total	7	2	191	817	139

Ireland: Sampling data

Species	Division	Port	Season	No. of samples	Number of fish		
					Measured	Aged	Stomach contents
Cod	VIa	Killybegs	1	10	411	217	-
			2	4	131	79	-
			3	2	60	55	-
			4	5	196	105	-
		Greencastle	2	8	336	205	-
			4	10	432	259	-
		Total		39	1566	920	-
	VIIa	Howth	1	5	190	181	32
			2	5	114	112	114
			3	5	125	91	125
			4	2	64	14	15
		Dunmore East	1	6	158	133	-
			4	4	83	80	-
		Total		27	735	611	285
	VIIb,c	Galway	1	7	227	162	-
			4	1	43	(43)	-
			8	270	205	-	
OVERALL TOTAL				74	2371	1736	285
Haddock	VIa	Killybegs	1	8	346	230	-
			2	10	831	266	-
			3	3	307	168	-
			4	5	632	291	-
		Greencastle	2	4	503	238	-
			4	7	495	208	-
		OVERALL TOTAL				37	3114	1401	-

Numbers in brackets denote otoliths collected but not yet aged.

Species	Division	Port	Season	No. of samples	Number of fish				
					Measured	Aged			
Whiting	VIa	Killybegs	1	1	485	209			
			2	33	615	144			
			3	3	849	(197)			
			4	4	473	(136)			
		Greencastle	2	1	69	(49)			
			4	3	335	(137)			
		Total		15	2826	872			
		VIIa	Howth	1	1	185	56		
				2	2	381	150		
				4	1	77	61		
			Skerries	3	2	353	(107)		
				4	11	98	(49)		
	Dunmore East		1	2	514	(175)			
	Total		99	1608	598				
	VIIbc	Galway	1	5	557	(217)			
		Total		5	557	(217)			
		OVERALL TOTAL		29	4991	1687			
	Plaice	VIa	Killybegs	4	4	238	191	112	130
				2	6	486	275	110	78
				3	3	228	226	102	118
4				3	242	111	(96)	(79)	
Greencastle			2	3	229	317	109	140	
			4	3	71	73	(42)	(61)	
Total				22	1664	1193	571	606	
Both sexes						2857		1177	
VIIa			Howth	1	1	3	47	3	47
				2	2	49	180	40	68
				3	5	339	532	100	140
			Dunmore East	1	3	378	207	118	152
		4		6	382	486	110	148	
		Total		17	1151	1452	371	555	
Both sexes					2000		926		
OVERALL TOTAL			39	2815	2465	942	1161		
BOTH SEXES					5460		2103		

Numbers in brackets denote otoliths collected but not yet aged.

NETHERLANDS

(F. A. van Beek)

In 1982 the analysis of the North Sea stocks of cod, haddock, whiting, sole, plaice, turbot and brill and for Irish Sea and Gulf of Biscay sole by means of market samples were continued.

The market sampling is stratified on area basis (Figs 1 and 2). The number of fish measured and aged in each area are given in the tables.

In April and September/October two Demersal Young Fish Surveys were carried out in collaboration with Belgium and the Federal Republic of Germany.

These surveys have been carried out twice a year since 1969 with standard gears (3m and 6m beam trawls). These surveys cover the continental North Sea coast from Esbjerg to the English Channel including the Waddensea and the Zeeland Estuary. In addition the area between Esbjerg and Jammerbugt was sampled.

For the Netherlands R.V. "Tridens", R.V. "Stern", R.V. "Schollevaar" and the commercial cutter GO 29 participated in both surveys.

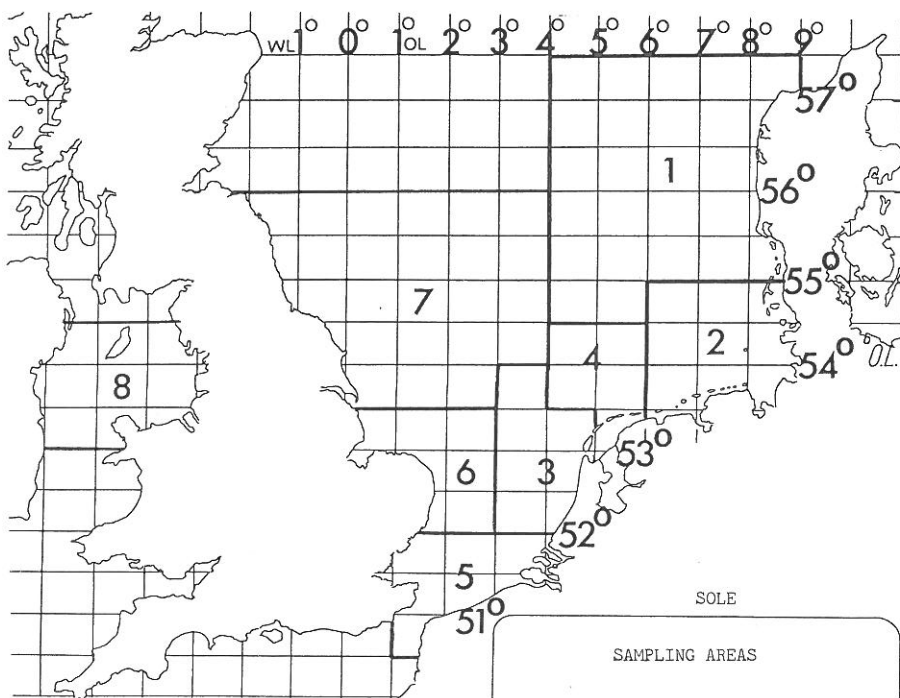
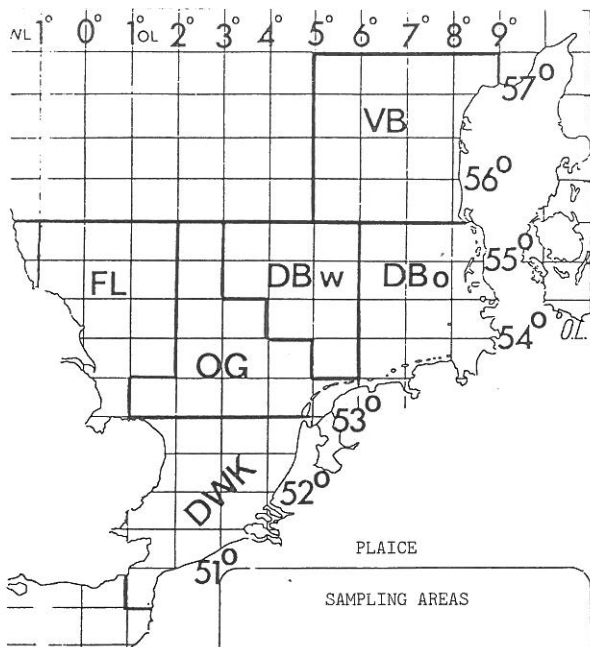
In the Easter Scheldt every month a survey was carried out on R.V. "Schollevaar" in order to investigate the tidal migration and vertical distribution of juvenile flatfish.

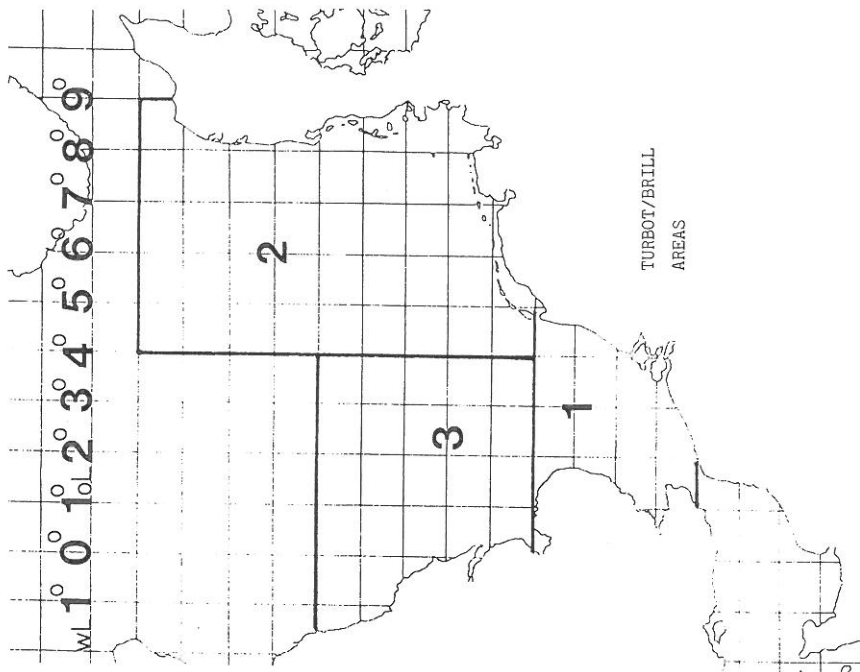
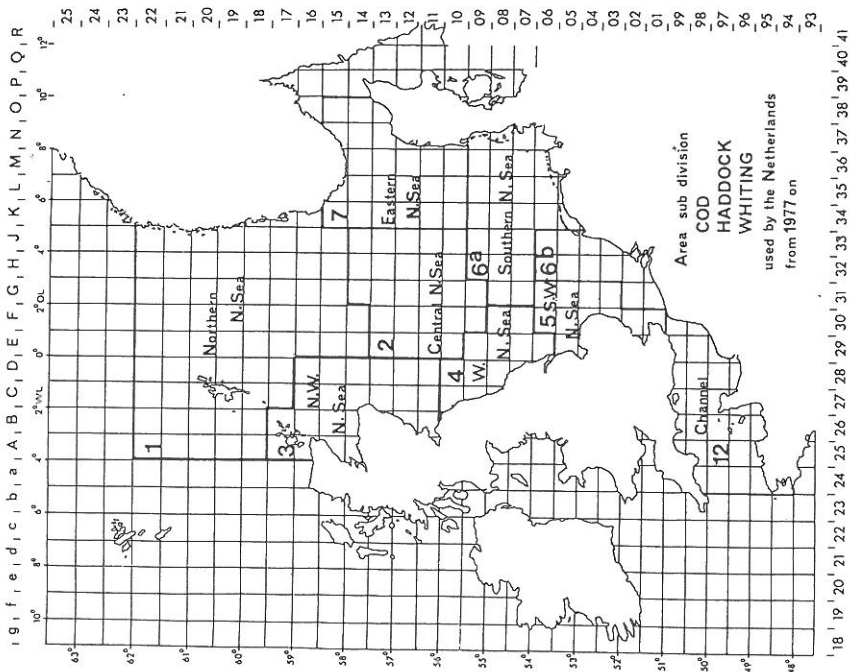
Regularly scientists and assistants go to sea with commercial vessels in order to measure the size distribution and to estimate the level of discards for the commercial species. In 1982 5 trips were made on beam trawl vessels. On 3 of these trips the survival of discarded fish, handled with a new developed catch grader was investigated. Further 3 trips were made with vessels fishing with otter trawl or pair trawl.

In the framework of the multispecies research the chartered cutter KW 34 carried out surveys, using the GOV trawl, in the southern North Sea and in the German Bight in the 2nd, 3rd and 4th quarter. These surveys provide also important information about the distribution of juvenile cod and whiting.

In February and March R.V. "Tridens" participated in the International Young fish Survey (IYFS).

In June R.V. "Tridens" participated in the International O-group Gadoid Survey. This survey was held for the 9th consecutive year.





SAMPLING DATA FOR SOLE 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
Gulf of Biscay	1st quarter		-	
	2nd "		-	
	3rd "		150	
	4th "		-	
1	1st quarter		151	-
	2nd "		300	29
	3rd "		100	-
	4th "		150	110
2	1st quarter		50	-
	2nd "		300	172
	3rd "		150	-
	4th "		50	270
3	1st quarter		150	-
	2nd "		300	107
	3rd "		99	-
	4th "		50	64
4	1st quarter		101	-
	2nd "		300	141
	3rd "		100	-
	4th "		100	122
5	1st quarter		49	-
	2nd "		297	168
	3rd "		100	-
	4th "		100	316
6	1st quarter		100	
	2nd "		148	
	3rd "		100	
	4th "		200	
TOTAL ANNUALLY				

SAMPLING DATA FOR SOLE 1982 (continued)

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
7	1st quarter		151	
	2nd "		169	
	3rd "		50	
	4th "		100	
Irish Sea	1st quarter		-	
	2nd "		396	
	3rd "		-	
	4th "		-	
Dutch Waddensea	1st quarter			-
	2nd "			74
	3rd "			-
	4th "			112
Zeeland estuary	1st quarter			-
	2nd "			172
	3rd "			-
	4th "			83
	1st quarter			
	2nd "			
	3rd "			
	4th "			
	1st quarter			
	2nd "			
	3rd "			
	4th "			
	1st quarter			
	2nd "			
	3rd "			
	4th "			
TOTAL ANNUALLY			4561	1940

SAMPLING DATA FOR PLAICE 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
D.W.K.	1st quarter		421	-
	2nd "		207	530
	3rd "		123	-
	4th "		85	445
O.G.	1st quarter		420	-
	2nd "		201	162
	3rd "		211	-
	4th "		255	210
Flamborough	1st quarter		490	-
	2nd "		279	-
	3rd "		209	-
	4th "		137	-
D.B. (W)	1st quarter		420	-
	2nd "		210	233
	3rd "		70	-
	4th "		140	232
D.B. (O)	1st quarter		479	-
	2nd "		70	613
	3rd "		279	-
	4th "		140	644
V.B.	1st quarter		349	-
	2nd "		140	290
	3rd "		137	-
	4th "		140	364
Dutch Waddensea	1st quarter			-
	2nd "			349
	3rd "			-
	4th "			405
Zeeland	2nd quarter			117
Estuary	4th "			74
TOTAL ANNUALLY			5612	4668

SAMPLING DATA FOR DAB 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of samples		Number of fish to be Aged
		Research vessel	Market	
III a	1st quarter			
	2nd "	1	-	46
	3rd "			
	4th "	1	-	48
IV b	1st quarter			
	2nd "	11	-	541
	3rd "			
	4th "	11	-	460
IV c	1st quarter			
	2nd "	8	-	482
	3rd "			
	4th "	10	-	382
VII a	1st quarter			
	2nd "			
	3rd "			
	4th "			
VIII Gulf of Biscay	1st quarter			
	2nd "			
	3rd "			
	4th "			
Dutch Waddensea	1st quarter			
	2nd "	3	-	85
	3rd "			
	4th "	4	-	81
Zeeland Estuary	1st quarter			
	2nd "	3	-	28
	3rd "			
	4th "	2	-	49
TOTAL ANNUALLY		54	-	2202

SAMPLING DATA FOR BRILL 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
1	1st quarter	45	40	-
	2nd "	273	20	11
	3rd "	48	20	-
	4th "	87	60	29
2	1st quarter	-	50	-
	2nd "	68	59	23
	3rd "	55	67	-
	4th "	244	50	33
3	1st quarter	155	61	
	2nd "	157	40	
	3rd "	315	37	
	4th "	315	56	
Dutch Waddensea	1st quarter			-
	2nd "			5
	3rd "			-
	4th "			3
Zeeland Estuary	1st quarter			-
	2nd "			-
	3rd "			-
	4th "			4
	1st quarter			
	2nd "			
	3rd "			
	4th "			
	1st quarter			
	2nd "			
	3rd "			
	4th "			
TOTAL ANNUALLY		1762	560	108

SAMPLING DATA FOR TURBOT 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
1	1st quarter	55	71	-
	2nd "	394	42	32
	3rd "	90	30	-
	4th "	76	116	16
2	1st quarter	-	120	-
	2nd "	106	120	55
	3rd "	190	160	-
	4th "	502	113	63
3	1st quarter	236	118	-
	2nd "	297	76	-
	3rd "	598	97	-
	4th "	517	82	-
Dutch Waddensea	1st quarter			-
	2nd "			2
	3rd "			-
	4th "			2
Zeeland Estuary	1st quarter			-
	2nd "			-
	3rd "			-
	4th "			-
	1st quarter			
	2nd "			
	3rd "			
	4th "			
	1st quarter			
	2nd "			
	3rd "			
	4th "			
TOTAL ANNUALLY		3061	1145	170

SAMPLING DATA FOR COD 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
ROUND FISH AREA 1	1st quarter	-	-	149
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	-	-	-
2	1st quarter	-	-	173
	2nd "	-	-	-
	3rd "	88	50	-
	4th "	64	-	-
3	1st quarter	-	-	41
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	-	-	-
4	1st quarter	207	94	-
	2nd "	-	-	-
	3rd "	165	50	-
	4th "	287	50	-
5	1st quarter	251	50	-
	2nd "	607	150	-
	3rd "	869	100	-
	4th "	299	100	-
6	1st quarter	2754	277	254
	2nd "	2689	301	285
	3rd "	1924	155	196
	4th "	2076	240	206
7	1st quarter	-	-	-
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	187	-	-
TOTAL ANNUALLY	1982	12.467	1.617	1.304

SAMPLING DATA FOR WHITING 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
ROUND FISH AREA 1	1st quarter	-	-	184
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	-	-	-
2	1st quarter	-	-	153
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	38	-	-
3	1st quarter	-	-	130
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	-	-	-
4	1st quarter	71	-	-
	2nd "	-	-	-
	3rd "	101	-	-
	4th "	83	-	-
5	1st quarter	378	50	-
	2nd "	338	50	-
	3rd "	568	100	-
	4th "	214	-	-
6	1st quarter	2329	150	178
	2nd "	2300	150	194
	3rd "	2294	150	189
	4th "	1860	148	144
7	1st quarter	-	-	-
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	-	-	-
NORTH SEA TOTAL ANNUALLY	1982	10.574	798	1.172

SAMPLING DATA FOR HADDOCK 1982.

- THE NETHERLANDS -

AREA	PERIOD	No. of fish sampled		
		M A R K E T		Res. Vessel
		measured	aged	aged
ROUND FISH AREA 1	1st quarter	-	-	300
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	-	-	-
2	1st quarter	-	-	212
	2nd "	-	-	-
	3rd "	31	-	-
	4th "	-	-	-
3	1st quarter	-	-	225
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	-	-	-
4	1st quarter	24	-	-
	2nd "	-	-	-
	3rd "	58	-	-
	4th "	140	-	-
5	1st quarter	-	-	-
	2nd "	78	50	-
	3rd "	139	75	-
	4th "	-	-	-
6	1st quarter	188	30	50
	2nd "	547	119	73
	3rd "	1115	175	73
	4th "	315	50	35
7	1st quarter	-	-	-
	2nd "	-	-	-
	3rd "	-	-	-
	4th "	137	-	-
NORTH SEA TOTAL ANNUALLY	1982	2.772	499	968

NORWAY
(C.J. Rørvik)

Sub-areas I and II

The research activities at sea were nearly the same in 1982 as in the last years. The distribution of young cod and haddock were investigated during a combined acoustic and stratified bottom trawl survey in the Barents Sea in February - March. Two commercial trawlers were hired to participate in the stratified bottom trawl survey together with one research vessel. The investigations on the distribution and the drift of cod egg and larvae were continued in March - April with surveys in the Lofoten and Vesterålen area. In August - September the annual international 0-group fish survey were carried out in the Barents Sea and adjacent areas. In September - October the distribution and abundance of cod, haddock, redfish, Greenland halibut and blue whiting were investigated in the Bear Island - West Spitsbergen area with one research vessel and one commercial trawler. The distribution of spawning cod in Lofoten and off Møre were investigated during two surveys. The distribution of silver smelt along the Norwegian coast were investigated during one survey in April - May and during another one in October - November. Tagging experiments of the major roundfish species continued.

Sub-area IV

The sampling of Recommendation 2 Fisheries in Division IVa was continued. As part of the international surveys the distribution and abundance of I- and II-group gadoids were studied in February.

SPECIES AREA	Season	RESEARCH VESSEL					MARKET			
		Aged		Measured		Tagged	Aged		Measured	
		No.of samples	No.of fish	No.of samples	No.of fish		No.of samples	No.of fish	No.of samples	No.of fish
<u>Cod</u>										
I	1	34	1389	156	13924	1392	3	299	8	1170
	2						21	1927	21	5219
	3					1311	28	2398	33	6420
	4						25	2387	32	7238
IIa	1	37	1458	197	15464	838	66	5880	35	10763
	2	27	1684	1	406	5197	36	3435	23	5472
	3					59	8	572	3	298
	4			2	218	1910	15	1419	21	4103
IIb	2	4	498	11	4493		1	100	7	556
	3	33	1197	136	4530	2000				
	4	5	120				2	199	2	398
IVa	1	11	161				1	55		
	2						1	51	25	360
	4					158				
IVb	1			20	421					
<u>Haddock</u>										
I	1	26	815	104	2519		1	99	4	680
	2	1	100				5	330	5	1259
	3	1	100				17	1614	9	1215
	4						8	738	7	1550
IIa	1	28	659	175	4560		11	1098	11	3077
	2	1	77				6	462	5	785
	3						6	503	5	412
	4						10	926	19	2032
IIb	2						1	100		

SPECIES AREA	Season	RESEARCH VESSEL				Tagged	MARKET			
		Aged		Measured			Aged		Measured	
		No.of samples	No.of fish	No.of samples	No.of fish		No.of samples	No.of fish	No.of samples	No.of fish
<u>Haddock contd</u>										
IVa	1	12	504	18	3982				17	185
	2								30	293
	3								8	266
	4								3	377
IVb	1	6	178	17	381					
<u>Saithe</u>										
I	2						3	290	6	843
	3						7	536	7	378
IIa	1			74	992		3	303	16	3003
	2			1	404	375	13	1300	10	2158
	3						24	2229	6	769
	4						21	2001	21	4382
IVa	1						2	180	17	2247
	2						3	250	27	2150
	3								47	1608
	4						11	990	28	2610
<u>Greenland Halibut</u>										
I	1			53	371					
	2						3	66	5	137
	3						5	160		
IIa	2						3	298	3	815
	3						4	259		
IIb	2			2	172		2	92	6	70
	3	4	356	92	2468		5	500	9	2422

[illegible]

SPECIES AREA	Season	RESEARCH VESSEL					MARKET			
		Aged		Measured		Tagged	Aged		Measured	
		No.of samples	No.of fish	No.of samples	No.of fish		No.of samples	No.of fish	No.of samples	No.of fish
<u>Silver smelt</u>										
IVa	1								4	59
	2								32	287
	3								38	350
	4								10	87
<u>Sandeel</u>										
IVa	1								6	613
	2	12	527	10	1090		6	332	14	1419
IVb	1			4	99					
	2	9	426	9	940		9	546	20	2017
<u>Long rough dab</u>										
I	1			84	6818					
	2								5	652
	3								11	614
	4								6	330
IIa	1			61	2542					
IIb	2								4	819
	3			70	3910					
IVa	1			14	159					
IVb	1			17	120					

POLAND

(J. Janusz & A. Paciorkowski)

Due to low quotas and minor catch no samples from the 1982 Polish demersal fishery within the ICES area were collected.

PORTUGAL

(F. Cardador)

The biological sampling programme on board research vessels and fish markets for demersal species has been continued by INIP (Instituto Nacional Investigação das Pescas). These investigations include mainly length frequency measurements, otoliths/scales sampling and maturity studies.

During 1982 three groundfish surveys on board the R/V "Noruega" were carried out along the Portuguese coast (Div. IVa). In April and September the main objective of the cruises was to estimate the abundance and distribution of the demersal resources. The last cruise (October/November) was directed towards hake and horse-mackerel juveniles.

The tables present the sampling data concerning hake (Merluccius merluccius), pouting (Trisopterus luscus), and seabream.

The data for seabream concern mainly the following species : Boops boops, Pagellus acarne, P. bogaraveo, Diplodus vulgaris, Sparus pagrus and Spondyliocoma cantharus.

Sampling Data for Hake (Merluccius merluccius)

AREA	Season (quarter)	No. of samples		No of fish		
		Research vessels	Market samples	Measured	Aged *	Racial **
IXa	1 st	5	341	18 320	104	-
	2 nd	57	240	27 365	1 029	-
	3 rd	78	345	23 939	749	-
	4 th	158	343	23 685	1 638	-
	Year 1982	298	1 269	93 329	3 520	

*Age reading being carried on ** No racial investigation in INIP

Sampling data for Pouting (Trisopterus luscus)

AREA	Season (quarter)	No. of samples		No. of fish		
		Research vessels	Market (1) samples	Measured	Aged *	Racial ** invest.
IXa	1 st	0	308	18 583	556	-
	2 nd	23	249	16 364	173	-
	3 rd	14	267	17 565	22	-
	4 th	2	294	18 430	15	-
	Year 1982	39	1 118	70 942	766	

(1) Market data from 3rd and 4th quarter are preliminary.

* Otoliths collected, not read. ** No racial investigation in INIP

SAMPLING DATA FOR SEABREAMS

AREA	Season (quarter)	No of samples		No of fish		
		Research vessels	Market samples	Measured	Aged*	Racial** invest.
IXa	1 st	-	7	117	-	-
	2 nd	29	63	5 686	226	-
	3 rd	25	79	4 769	158	-
	4 th	38	92	3 814	-	-
	Year 1982	92	241	14 366	384	-

* including otoliths and scales collected, not read (Boops boops and Pagellus acarne)

** No racial studies in INIP

SPAIN

(R. Robles)

Instituto Español de Oceanografía (I.E.O.)

Routine Monitoring of Demersal Fish Landings

Landings of hake, monkfish (*Lophius piscatorius* and *Lophius budegassa*), megrim (*Lepidorhombus boscii* and *Lepidorhombus wiffiagonis*) and red sea bream were sampled at the major Spanish ports to obtain length and some length-at-age data from all areas fished by Spanish fleets (see the table).

Research Vessel Activities

The R/V "Cornide de Saavedra" carried out two trawl surveys of demersal fish on the Galician shelf.

Area	Dates	Objectives
IXa + VIIIc	19 - 29 Sept.	Recruitment estimates for hake and other biological research
IXa + VIIIc	16 Nov. - 12 Dec.	

Spanish scientists participated also in three international surveys carried out by the English R/V "G.A. Reay" in January, the Federal Republic of Germany R/V "Walther Herwig" in February and the English R/V "Cirolana" in March-April while working in Spanish waters.

The opportunity was taken during all these surveys to collect samples of gonads, stomachs and otoliths of the most important species in the demersal fisheries.

In African waters, the I.E.O. Laboratory of Tenerife (Canary Islands) has continued its work collecting biological data from the Canarian Archipelago, northwest Africa, Gabonese waters, and Senegalese waters. The table on pages 62 and 63 presents the data.

HAKE

1982

Area / Quarter	Research vessel		Market		Aged
	Samples	Fish measured	Samples	Fish measured	
VIa					
1			2	122	
2			3	231	
3			1	34	
4			-	-	
VIIbcjk					
1			5	1053	
2			18	4260	
3			14	4202	
4			11	3368	
VIIIab					
1			7	707	
2			17	2156	
3			17	2213	
4			17	2207	
VIIIc					
1			25	3036	
2			57	8529	50
3	21	7499	69	7629	150
4	21	7513	51	4874	
IXa					
1			58	9772	100
2			52	9738	50
3	15	12175	44	6696	150
4	12	3374	32	5097	100

MEGRIM	Area / Quarter	Research vessel		Market	
		Samples	Fish measured	Samples	Fish measured
1982	L. boscii	VIIbcjk			
		1		-	-
		2		13	501
		3		16	1206
		4		14	977
	VIIIab				
		1		-	-
		2		-	-
		3		9	87
		4		16	330
	VIIIc				
		1		-	-
		2		19	1076
		3	21	24	1415
		4	19	17	862
	IXa				
		1			
		2			
		3	15	24	
		4	6	59	

<u>MONKFISH</u>		<u>Research vessel</u>		<u>Market</u>	
1992	Area / Quarter	Samples	Fish measured	Samples	Fish measured
<u>L. piscatorius</u>	VIIbck				
	1			-	-
	2			13	959
	3			15	1224
	4			12	1147
	VIIIab				
	1			-	-
	2			3	150
	3			11	498
	4			13	1100
	VIIIc				
	1			-	-
	2			16	362
	3	21	843	29	1088
	4	21	466	13	587
	IXa				
	1				
	2				
	3	15	108		
	4	11	113		

<u>MONKFISH</u>		<u>Research vessel</u>		<u>Market</u>	
1982	Area	Fish		Fish	
	Quarter	Samples	measured	Samples	measured
<u>L. budegassa</u>	VIIbc,jk				
	1			-	-
	2			13	936
	3			15	1372
	4			12	926
	VIIIab				
	1			-	-
	2			3	78
	3			11	201
	4			13	892
	VIIIc				
	1			-	-
	2			16	326
	3	21	110	29	401
	4	8	12	13	209
	IXa				
	1				
	2				
	3	15	145		
	4	7	46		

MEGRIM 1982	Area / Quarter	Research vessel		Market	
		Samples	Fish measured	Samples	Fish measured
<u>L. wiffiagonis</u>	VIIbcjk				
	1			-	-
	2			13	4103
	3			16	4638
	4			14	4158
	VIIIab				
	1			-	-
	2			2	164
	3			9	666
	4			16	856
	VIIIc				
	1			-	-
	2			19	656
	3	21	253	24	496
	4	14	56	17	544
	IXa				
	1				
	2				
	3	15	34		
	4	2	5		

<u>RED SEA BREEM</u>		<u>Research vessel</u>		<u>Market</u>		
1982	Area / Quarter	Samples	measured	Samples	measured	Aged
<u>P. bogaraveo</u>	VIIbcjk					
	1			-	-	
	2			6	438	
	3			11	778	
	4			1	36	
	VIIIab					
	1			-	-	
	2			-	-	
	3			1	35	
	4			1	103	
	VIIIc					
	1			26	5473	-
	2			34	2897	65
	3			24	1287	107
	4	5	625	21	1356	78
	IXa					
	1					
	2					
	3					
	4	-	-	1	88	

Species	Area	Quarter	At sea		Market		Aged
			Samples	Fish measured	Samples	Fish measured	
<u>Pagellus coupei</u>	0°52'N- -3°54'S	II	42	4517			
<u>Dentex congoensis</u>	"	"	"	3133			
<u>Dentex polli</u>	"	"	"	649			
<u>Sparus ehrenbergi</u>	"	"	"	334			
<u>Pagurus gibbiceps</u>	"	"	"	99			
<u>Pseudupeneus prayensis</u>	"	"	"	870			
<u>Argyrosomus hololepidotus</u>	"	"	"	308			
<u>Merluccius merluccius</u>	26° N- 22°30'N	I,II,IV	47	-	64670		1964
<u>Merluccius senegalensis</u>	"	"	18	-	32971		531
<u>Pagellus erithrynus</u>	"	"	638	-	2479		
<u>Pagellus coupei</u>	"	"	5801	-	1087		
<u>Pagellus acarne</u>	"	"	2982	-	3114		
<u>Dentex macrophthalmus</u>	"	"	61				
<u>Dentex canariensis</u>	"	"	99		3129		
<u>Dentex gibbosus</u>	"	"	129		3836		
<u>Dentex maroccanus</u>	"	"	666				
<u>Spondyliosoma cantharus</u>	"	"	729		8356		
<u>Diagrama mediterraneum</u>	"	"			7682		
<u>Boops boops</u>	"		2510				
<u>Sparus pagrus</u>	"	"	113		2082		
<u>Diplodus senegalensis</u>	"	"	4302				
<u>Diplodus vulgaris</u>	"	"	236				

.../...

Species	Area	Quarter	At sea Samples Fish measured	Market Samples Fish measured	Aged
- <u>Serranus</u> <u>acricauda</u>	Canary Región	I,II,III	8	409	
- <u>Sparus</u> <u>pagrus</u>	"	"	8	230	
- <u>Diplodus</u> <u>sargus</u>	"	"	6	80	
- <u>Sarria</u> <u>salga</u>	"	"	8	428	
- <u>Sparisoma</u> <u>cretense</u>	"	"	8	475	
- <u>Merluccius</u> <u>polli</u>	15°55'N -12°25'N	IV	98	14222	
- <u>Merluccius</u> <u>senegalensis</u>	"	"	98	1225	

Instituto de Investigaciones Pesqueras (I.I.P.) of Vigo

Studies on arctic cod, red sea bream and pouting have been carried out by researchers of this laboratory.

SWEDEN

(B. Sjöstrand)

Sweden took part in the International Young Herring Survey in the North Sea and the Skagerrak. However, it has no activities on which to report owing to reduced opportunities.

United Kingdom
(England and Wales)
A.C. Burd

Sampling 1982

COD

Area	Research vessel			Market		
	No. of samples	No. of fish		No. of samples	No. of fish	
		Measured	Otolithed ¹		Measured	Otolithed
North Sea	+	+	1 607	835	127 514	7 968
West of Scotland	+	+	39	59	7 567	842
Rockall	+	+	120	-	-	-
Irish Sea	+	+	203	76	10 238	1 429
Eastern English Channel	+	+	-	39	977	76
Western English Channel)			-	-	-
Bristol Channel	)	+	72	4	367	-
SE of Ireland	)			1	151	-
Little Sole Bank)			-	-	-
Great Sole Bank	)	+	1	-	-	-
West of Great Sole Bank)			-	-	-
Biscay	+	+	1	-	-	-

HADDOCK

Area	Research vessel		Market			
	No. of samples	No. of fish	No. of samples	No. of fish		
		Measured	Otolithed ¹	Measured	Otolithed	
North Sea	+	+	1 494	389	56 118	3 241
West of Scotland	+	+	104	63	8 057	815
Rockall	+	+	370	-	-	-
Bristol Channel	)	+	1	-	-	-
SE of Ireland)			-	-	-

WHITING

Area	Research vessel		Market				
	No. of samples	No. of fish	No. of samples	No. of fish			
		Measured		Otolithed ¹	Measured	Otolithed	
North Sea	+	+	1	910	290	24 298	2 345
West of Scotland				-	1	86	-
Irish Sea	+	+		479	95	11 023	939
Eastern English Channel				-	11	338	67
Western English Channel	)				118	13 616	397
Bristol Channel	104			220	2	200	-
SE of Ireland	106A				-	-	-
Little Sole Bank	107A				-	-	-
Great Sole Bank	107D				-	-	-
West of Great Sole Bank	107E			4	-	-	-
	107F				-	-	-
	107G				-	-	-
	107H				-	-	-
	107J				-	-	-
	107K				-	-	-

SAITHE

Area	Research vessel			Market	
	No. of samples	No. of fish		No. of samples	No. of fish
		Measured	Otolithed ¹		
North Sea	+	+	302	56	5 704
West of Scotland	+	+	16	39	4 500
Rockall	+	+	60	-	-

HAKE

Area	Research vessel			Market	
	No. of samples	No. of fish		No. of samples	No. of fish
		Measured	Otolithed ¹		
West of Scotland				14	1 613
Irish Sea				23	3 511
Western English Channel				12	1 397

PLAICE

Area	Research vessel			Market		
	No. of samples	No. of fish		No. of samples	No. of fish	
		Measured	Otolithed ¹		Measured	Otolithed
North Sea	+	+	174	204	36 577	3 519
Irish Sea	+	+	283	63	9 872	1 185
Eastern English Channel	+	+	281	69	3 512	261
Western English Channel	)			108	13 149	1 283
Bristol Channel	)			15	774	196
SE of Ireland	+	+	49	-	-	-
Little Sole Bank)			-	-	-

SOLE

Area	Research vessel			Market		
	No. of samples	No. of fish		No. of samples	No. of fish	
		Measured	Otolithed ¹		Measured	Otolithed
North Sea	+	+	-	118	13 145	911
Irish Sea	+	+	78	48	6 257	273
Eastern English Channel	+	+	221	75	4 231	197
Western English Channel	+	+	6	90	13 671	615
Bristol Channel	)			13	1 876	38
SE of Ireland	+	+	14	1	105	-
Little Sole Bank	+	+	1	1	77	-

LEMON SOLE

Area	Research vessel			Market	
	No. of samples	No. of fish		No. of samples	No. of fish
		Measured	Otolithed ¹		Measured Otolithed
Irish Sea	+	+	68	-	-
Western English Channel 107A				98	13 965
Bristol Channel 107E)				10	1 403
SE of Ireland 107F)	+		42	-	-
Little Sole Bank 107G)				1	90
Great Sole Bank 107H)				-	-
West of Great Sole Bank 107J)	+		10	-	-
				-	-

SPURDOG

Area	Research vessel			Market	
	No. of samples	No. of fish		No. of samples	No. of fish
		Measured	Otolithed ¹		Measured Otolithed
North Sea				108	7 451
West of Scotland 104				23	2 314
					-

¹Otolithed - not necessarily aged.

SKATES AND RAYS

Area		Research vessels		Market	
		No. of samples	No. of fish measured	No. of samples	No. of fish measured
Irish Sea	107A	+	+	46	4 798
English Channel E	107D	+	+		
English Channel W	107E	+	+		
Bristol Channel	107F	+	+		
SE of Ireland	107G	+	+		
Little Sole Bank	107H	+	+		
North Sea	104A	+	+		
North Sea	104B	+	+		
North Sea	104C	+	+		

SANDEELS

Area	No. of samples		No. of fish	
	Research vessel	Market	Measured	Otolithed
North Sea 104B	0	4	700	303

NORWAY POUT

Area	No. of samples		No. of fish	
	Research vessel	Market	Measured	Otolithed
North Sea 104A	9	0	15 200	508

RELEASE OF ENGLISH TAGGED FISH IN ICES AREAS DURING 1982

Species	Region					Total
	104C	107D	107E	107F	107J	
Plaice	1 885	1 036	29	-	-	2 950
Cod	4 782	-	-	-	-	4 782
Sole	5 152	2 981	-	-	-	8 133
Flounder	67	-	-	-	-	67
Bass	-	1 051	-	381	-	1 432
Anglerfish	-	-	-	-	12	12
TOTAL	11 886	5 068	29	381	12	17 376

RESEARCH VESSEL SURVEYS, 1982

Area	Month	Objectives
North Sea	January	Plaice spawning survey
"	"	"
"	"	Plaice tracking
"	February	International Young Fish Survey
"	February/March	Pre-recruit gadoid tagging
Eastern English Channel	"	Groundfish survey
North Sea	March	Norway pout/gadoid survey
North Sea	June	0-group gadoid survey
Western Channel	June/July	Groundfish and fish egg and larvae survey
North Sea	July	Plaice midwater trawling
"	"	Plaice summer feeding
Rockall	"	Deep-water stocks
North Sea	August	Groundfish survey
North Sea	September	0-group flatfish survey
Irish Sea	"	Young gadoid survey
Western Channel	"	Orientation and behaviour of plaice
North Sea	October	Norway pout/gadoid survey
Irish Sea	November	Groundfish survey
Eastern Channel	December	Groundfish survey

Scotland

(A. Saville)

1. Research Vessel Activities

FRV 'Explorer' participated in the 1982 International Young Fish Survey in the North Sea in February and FRV 'Scotia' carried out a similar survey, covering all of VIa, in February - March. Trawl surveys of demersal fish were also carried out in the North Sea by 'Scotia' in August and by 'Explorer' in October. 'Scotia' also carried out a trawl survey of Division VIb, predominantly for haddock, in May 1982; and one of Division IVa in December 1982 for Norway pout. On the latter some experimental work was also done using vertically divided trawls.

In June 1982 'Explorer' participated in the International O-group Gadoid Survey in the North Sea and 'Clupea' carried out a sandeel tagging experiment at Shetland.

Numbers of cod, haddock and whiting measured and aged during these research vessel cruises are given in Table 1.

2. Routine Monitoring of Demersal Fish Landings

Landings of cod, haddock, whiting, saithe, plaice and lemon sole were sampled at the major Scottish ports to obtain length and length at age data from all areas fished by the Scottish fleets. The numbers of cod, haddock, whiting and saithe measured and aged are given in Table 2.

3. Measurement of Discarding Rates

Sixty-six trips were done on Scottish commercial fishing vessels, during which 876 hauls were sampled, to estimate the numbers of cod, haddock, whiting, and other species discarded at each age. The numbers of each species measured and aged during these trips are given in Table 3.

4. Tagging Experiments

As in 1981 sandeel was the only demersal fish species tagged in 1982. Over seven thousand A. marinus were tagged in the Shetland area in May 1982. Of these 124 tags were recovered in that year and an additional 121 tags from releases made in earlier years.

5. Other Activities

The remainder (about 13000) of the whiting stomachs collected during the 1981 ICES Stomach Sampling Project were analysed in 1982. All of these data have now been filed on the computer and programmes are being written to access them in appropriate formats. Small numbers of stomachs from mackerel, saithe and large cod were collected in 1982 and sent to the appropriate species coordinators.

6. Sampling of Sandeel and Norway Pout

Samples of sandeels and Norway pout were obtained both from research vessels and from commercial landings. The numbers of these species measured and aged are given in Table 4.

Table 1 Scottish Research Vessel Sampling, 1982

Month	Area	Cod		Haddock		Whiting	
		Otol	Meas	Otol	Meas	Otol	Meas
February	N Sea	387	428	756	12552	532	12294
February	VIa	183	195	592	7919	598	7932
May	VIb	107	132	854	99551	-	-
August	N Sea	963	411	1944	33658	1303	17708
October	N Sea	384	501	1388	23050	715	16911

Table 2 Scottish Sampling of Commercial Landings, 1982

Cod		Haddock		Whiting		Saithe	
Meas	Otol	Meas	Otol	Meas	Otol	Meas	Otol
53526	15470	136798	17048	98880	10316	18172	8082

Table 3 Scottish Sampling of Discards, 1982

Cod		Haddock		Whiting		Other Species	
Meas	Otol	Meas	Otol	Meas	Otol	Meas	Otol
8188	2207	57247	5217	34230	4038	50670	-

Table 4 Scottish Sampling of Sandeels and Norway Pout, 1982

Species and Areas	Number of samples		Number of fish	
	Research Vessel	Commercial	Measured	Aged
Sandeels Sub-area IV	12	173	42988	2101
Norway Pout Sub-area IV	102	-	16822	774
Sandeels Division VIa	-	33	8322	1054
Norway Pout Division VIa	-	1	165	83

U.S.A.

(M.P. Sissenwine)

The USA did not fish in the Northeast Atlantic during 1982. Therefore, there are no biological samples to report. Although the USA did not conduct research on demersal fish within the Northeast Atlantic during 1983, it did contribute scientifically through participation in ICES working groups and Statutory Meetings and by written scientific contributions to ICES committees.

USA research on demersal fish of the Northwest Atlantic continues along the same lines as in previous years. The research is multifaceted including the (1) collection of harvesting statistics, (2) collection of biological samples, (3) standardized bottom trawl surveys, (4) ichthyoplankton surveys, and (5) analysis. More emphasis is placed on the multispecies problem (both technological and biological interactions) than ever before. Results now indicate that predation by fish on juveniles may have a significant effect on recruitment.

A more complete report of USA research in the Northwest Atlantic is presented annually to NAFO.

U.S.S.R.

(S. A. Studenetsky)

The Barents, Norwegian and Greenland Seas

In 1982 investigations were carried out to determine the abundance of the main commercial fish by the total trawl survey method. Possible recruitment of cod, haddock, redfish and other fish stocks was estimated by means of juvenile fish assessment in the area of the Barents Sea and adjacent Waters. The amount, quality and peculiarities of ichthyoplankton distribution and conditions of juvenile fish survival were studied.

Research was carried out to determine the relationship between differences of fish distribution and behaviour on the one hand, and hydrological conditions and the nutritive base on the other hand. Methods of fishery forecasting were improved on this basis.

Materials of age/length composition, distribution and feeding pattern of cod, haddock, catfish, Greenland halibut and other fish in the main ICES areas I, IIa and IIb were collected this year. Data collected in 1981 by research, scouting and fishing vessels are presented in the following tables.

Data on cod sampling, 1982.

A R E A	Season	Number of specimens		A G E D
		measured	Sampled for feeding	
Soviet area	I	31948	5518	956
	II	10212	1452	755
	III	48582	2893	1202
	IV	8036	2146	306
Spitsbergen area	I	322	175	-
	II	56526	1933	850
	III	9755	3218	667
	IV	3353	995	16
Norwegian area	I	41086	8109	2274
	II	15817	3190	912
	III	2080	393	77
	IV	39	25	-
Total		227786	30047	8015

Data on haddock sampling , 1982.

A R E A	Season	Number of specimens		
		measured	Sampled for feeding	A G E D
Soviet area	I	3658	493	333
	II	620	89	-
	III	918	75	-
	IV	951	110	10
Spitsbergen area	I	-	-	-
	II	10	-	-
	III	14	1	1
	IV	1269	100	59
Norwegian area	I	20924	4235	1862
	II	6377	1100	926
	III	1	-	-
	IV	-	-	-
Total		35042	6203	3191

Data on redfish sampling, 1982.

A R E A	Season	Number of specimens		A G E D
		measured	Sampled for feeding	
Soviet area	I	13285	1846	996
	II	3112	185	-
	III	506	75	-
	IV	4667	125	100
Spitsbergen area	I	8675	1660	160
	II	9724	824	300
	III	48593	5631	3507
	IV	4825	125	100
Norwegian area	I	48626	4428	2384
	II	94539	6791	2410
	III	20563	2237	1582
	IV	-	-	-
Total		257115	23927	11539

Data on Greenland halibut sampling, 1982.

A R E A	Season	Number of specimens		A G E D
		measured	Sampled for feeding	
Soviet area	I	852	162	-
	II	535	240	-
	III	44	-	-
	IV	218	-	-
Spitsbergen area	I	16	-	-
	II	5209	1000	450
	III	8052	875	600
	IV	1348	130	-
Norwegian area	I	2168	288	300
	II	2045	224	300
	III	233	25	-
	IV	-	-	-
Total		20720	2944	1650

Data on saithe sampling, 1982.

A R E A	Season	Number of specimens		A G E D
		measured	Sampled for feeding	
Soviet area	I	59	25	-
	II	23	-	-
	III	345	25	-
	IV	21	-	-
Spitsbergen area	I	-	-	-
	II	-	-	-
	III	3	-	-
	IV	26	-	-
Norwegian area	I	5087	848	600
	II	3484	559	300
	III	3	-	-
	IV	-	-	-
Total		9051	1457	900

Data on catfish sampling, 1982.

A R E A	Season	Number in specimens		A G E D
		measured	Sampled for feeding	
Soviet area	I	696	3I	-
	II	64I	5I	43
	III	52	-	-
	IV	467	-	-
Spitsbergen area	I	I	-	-
	II	288	5	-
	III	228I	60	-
	IV	I35	-	-
Norwegian area	I	62I	-	-
	II	449	47	46
	III	I27	-	-
	IV	-	-	-
Total		5758	I94	89

Data on plaice sampling, 1982.

A R E A	Season	Number of specimens		A G E D
		measured	Sampled for feeding	
Soviet area	I	1525	100	-
	II	13837	2489	1637
	III	590	75	300
	IV	11542	900	300
Spitsbergen area	I	-	-	-
	II	-	-	-
	III	-	-	-
	IV	-	-	-
Norwegian area	I	2	-	-
	II	3	-	-
	III	-	-	-
	IV	-	-	-
Total		27499	3564	2237

Data on long rough dab sampling , 1982.

A R E A	Season	Number of specimens		A G E D
		measured	Sampled for feeding	
Soviet area	I	I6877	597	22I
	II	I0598	I900	-
	III	797	-	-
	IV	II823	I3I	-
Spitsbergen area	I	72	-	-
	II	29II	50	-
	III	II82I	350	300
	IV	858	-	-
Norwegian area	I	7456	I58	33
	II	II092	5I5	I5
	III	562	-	-
	IV	-	-	-
Total		74867	370I	569

