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International Council for the  
Exploration of the Sea

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Report of Activities

***DEMERSAL FISH COMMITTEE***

by

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**1989**

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## BELGIUM

(R. de Clerck)

Recording of densities and growth rates of the 1988 and 1989 year classes of sole, plaice, dab, flounder, cod and whiting was carried out. Two cruises were therefore undertaken according to the criteria of the International Demersal Young Fish Survey. The beam trawl survey was continued in order to estimate the stock size of adult flatfish in the southern North Sea in August. This was part of an international survey in collaboration with the Dutch and English Institutes.

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

### SAMPLING DATA FOR : SOLE 1989 BELGIUM

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	-	2	175	70
	2	-	6	667	142
	3	1	1	537	207
VIIIf,g	1	-	10	1 096	200
	2	-	4	325	150
	3	-	1	70	70
VIIa	1	-	9	1 126	237
	2	-	13	1 466	430
	4	6	-	28 815	1 795
VIIId,e	1/4	-	1	210	210
VIII	1/4	-	1	210	210

### SAMPLING DATA FOR : PLAICE 1989 BELGIUM

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	-	2	122	50
	2	-	6	382	90
	3	1	1	850	300
VIIIf,g	1	-	10	654	150
	2	-	4	214	90
	3	-	1	50	50
VIIa	1	-	9	519	100
	2	-	7	412	190
	4	3	-	120	120
VIIId,e	1/4	-	3	150	150

SAMPLING DATA FOR : **COD**

**1989**

**BELGIUM**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	-	7	340	340
	2	-	6	300	300
	3	-	4	200	200

SAMPLING DATA FOR : **WHITING**

**1989**

**BELGIUM**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	-	6	255	255
	2	-	7	300	300
	3	-	4	180	180



## DENMARK

(H.Gislason)

The R/V "Dana" made 11 cruises in 1989, most of which took place in the North Sea. Apart from participating in internationally coordinated surveys (1, 2, 7, 10) the surveys were aimed at investigating the effect of eutrophication and oxygen deficiency (3, 5, 11), sprat recruitment (8), sandeel biology (4) and food selection of whiting (9).

The sampling programme for the human consumption fishery was continued in 1989 at the same level as in previous years. The number of market samples is given in the tables as the number of boxes, each containing approximately 35 kg of fish.

The market samples reported for sandeel, Norway pout and whiting have been obtained from the industrial fishery. Each of these samples weigh between 5 and 10 kg. Compared to previous years, the number of samples from this fishery has decreased due to a decrease in the number of fishermen who allow samples to be taken from the catch.

### R.V "Dana" Cruises 1989

Cruise no	Period	Purpose	Area
1)	1 - 23 February	Int. Young Fish Survey 43 hauls, 61 IKMT	North Sea
2)	28 Febr. - 17 March	Baltic Young Fish Survey 54 hauls, 16 CTD, 27 Bongo	The Baltic
3)	18 - 22 March	Environmental investigations 15 hauls, 20 CTD, 4 HAPS	Kattegat
4)	15 - 28 April	Sandeel Investigations	North Sea
5)	1 - 13 May	Flatfish disease 41 hauls	North Sea, Skagerrak, Kattegat
6)	18 - 19 May	Course in hydroacoustics	Skagerrak
7)	19 July - 7 Aug.	Int. Herring Acoustic survey 33 hauls, 53 CTD	North Sea, Skagerrak
8)	9 - 25 August	Sprat recruitment 122 CTD, 170 MIK/biones	North Sea
9)	29 Aug. - 12 Sept.	Food selection by whiting	North Sea
10)	15 Sept. - 2 Oct.	Int. Herring Larval Survey 203 GULF, 2 CTD, 2 hauls	North Sea
11)	7 - 13 November	Environmental investigations 21 hauls, 27 CTD	Kattegat

SAMPLING DATA FOR : **WHITING**

**1989**

**DENMARK**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	43	5	2 463	1 196
	2	-	5	8	7
	3	-	17	456	394
	4	-	6	21	20
IIIa (N)	3	-	6	574	574
	4	-	3	28	22
IIIa (S)	1	-	7	219	213
	2	-	1	2	2
	3	-	11	2 720	2 720
	4	-	6	751	734

SAMPLING DATA FOR : **HADDOCK**

**1989**

**DENMARK**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	43	5	799	799
	2	-	4	333	332
	3	-	3	481	480
	4	-	5	337	333
IIIa (N)	1	-	5	1 072	1 070
	2	-	3	780	778
	3	-	9	1 210	1 207
	4	-	6	921	921
IIIa (S)	3	-	8	28	28
	4	-	1	1	-

SAMPLING DATA FOR : **COD**

**1989**

**DENMARK**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	43	11	1 462	1 196
	2	-	7	628	628
	3	-	11	918	917
	4	-	8	518	517
IIIa (N)	1	-	4	550	550
	2	-	5	415	414
	3	-	9	601	599
	4	-	10	790	790
IIIa (S)	1	-	12	977	974
	2	-	5	323	323
	3	-	11	317	300
	4	-	13	433	432

SAMPLING DATA FOR : **SAITHE** **1989** **DENMARK**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	43	-	5	-
	2	-	3	391	388
	3	-	3	362	362
	4	-	2	102	102
IIIa (N)	1	-	4	571	570
	2	-	2	229	229
	3	-	3	357	356
	4	-	2	136	136

SAMPLING DATA FOR : **NORWAY POUT** **1989** **DENMARK**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	43	1	1 391	768
	3	-	2	239	239
	4	-	8	1 146	1 146
IIIa (N)	3	-	4	81	81
	4	-	3	800	800
IIIa (S)	1	-	1	10	6

SAMPLING DATA FOR : **SANDEEL** **1989** **DENMARK**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	-	7	842	717
	2	-	50	5 680	4 727
	3	-	4	308	1
IIIa (N)	3	-	3	333	333

SAMPLING DATA FOR : **PLAICE** **1989** **DENMARK**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IV	1	43	4	1 886	926
	2	-	12	3 490	3 333
	3	-	21	3 764	3 724
	4	-	12	2 723	2 690
IIIa (N)	1	-	4	1 095	1 031
	2	-	6	1 812	1 584
	3	-	6	1 499	1 371
	4	-	5	1 428	1 350
IIIa (S)	1	-	13	2 369	2 293
	2	-	11	1 992	1 850
	3	-	9	1 900	1 790
	4	-	13	1 784	1 717

SAMPLING DATA FOR : **SOLE**

**1989**

DENMARK

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IIIa (S)	1	-	2	254	254
	2	-	2	274	274
	3	-	2	287	287
	4	-	3	317	317

## FAROEES

(J.Reinert)

The sampling programme for commercial catches of saithe, cod, haddock, ling, blue ling, Greenland halibut and redfish was continued in 1989. In addition samples of the species mentioned and tusk were taken from research vessel catches. The tables provide more details.

The following research cruises were made in 1989:

In January *R/V "Magnus Heinason"* carried out an exploratory fishery with bottom trawl in deeper waters S and SW of the Faroes for grenadier and black scabbard fish.

In February-March *R/V "Magnus Heinason"* continued the Faroese Groundfish Surveys to obtain information on the stock sizes of saithe, cod and haddock; see tables.

In March-April *R/V "Magnus Heinason"* and later in May *M/S "Snoddio"* carried out an exploratory fishery with bottom trawl for black scabbard fish S and SW of the Faroes.

In April *R/V "Magnus Heinason"* carried out a survey with midwater trawls around the Faroes for eggs and larvae of Atlantic halibut.

In May *R/V "Magnus Heinason"* carried out an 0-group Survey in Faroese Waters to get information on the year class strength of saithe. These surveys were continued in June-July to get information on the year class strength of cod, haddock, Norway pout and sandeel.

In May-June *R/V "Magnus Heinason"* carried out a combined acoustic and trawl survey to get information on the distribution of silversmelt in Faroese waters.

In May-June the commercial trawler Skarðhamar was chartered to carry out an exploratory fishery with bottom trawl around the Faroes for flatfish, particularly lemon sole.

In June-July the commercial longliner, *M/S "J.C.Svabo"* was chartered to carry out an exploratory fishery around the Faroes with traps for tusk and ling.

In October-November *R/V "Magnus Heinason"* carried out an exploratory fishery with bottom trawl in Faroese waters. Target species were mainly cod, saithe, ling, blue ling, redfish and Greenland halibut.

In November *R/V "Magnus Heinason"* carried out a trawl survey around the Faroes as part of a sampling programme to get more information on the population dynamics etc. of redfish (*Sebastes marinus*, *S. mentella*, *S. viviparus*).

In December *R/V "Magnus Heinason"* carried out an exploratory fishery with bottom trawl in deeper waters around the Faroes. Target species were mainly grenadier, black scabbard fish, silversmelt and saithe.

On all cruises with *R/V "Magnus Heinason"* biological samples were taken as a routine for most fish species from almost every haul and the measurements were entered into the vessel computer automatically. Since not all data have yet been edited, the number of samples and measurements by species for the 1989 can not be given at this stage except for the Faroese Groundfish surveys.

SAMPLING DATA FOR : **COD** 1989 FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1	150	*	467	38	5 400	500
	2	*	*		55	8 950	748
	3	*	*		31	4 676	448
	4	*	*		44	6 893	596

SAMPLING DATA FOR : **HADDOCK** 1989 FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1	150	*	293	19	5 325	249
	2	*	*		15	4 498	250
	3	*	*		16	5 508	300
	4	*	*		29	8 993	249

SAMPLING DATA FOR : **SAITHE** 1989 FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1	150	*	344	26	5 438	325
	2	*	*		42	11 296	299
	3	*	*		29	7 065	299
	4	*	*		26	5 422	299

SAMPLING DATA FOR : **BLUE LING** 1989 FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1	*	*		3	573	-
	2	*	*		4	92	92
	3	*	*		1	33	-
	4	*	*		2	151	-

SAMPLING DATA FOR : ***Sebastes marinus*** 1989 FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1	*	*		2	154	-
	2	*	*		2	367	-
	3	*	*		3	148	-
	4	*	*		-	-	-

SAMPLING DATA FOR : ***Sebastes mentella*** 1989 FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1	*	*		3	1932	-
	2	*	*		4	1406	-
	3	*	*		5	2302	-
	4	*	*		5	1667	-

SAMPLING DATA FOR : **TUSK**

**1989**

FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1/4	*	*		-	-	-

SAMPLING DATA FOR : **LING**

**1989**

FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1/4	*	*		2	120	-

SAMPLING DATA FOR : **GREENLAND HALIBUT**

**1989**

FAROES

		Research vessel			Market		
Area	Season	N Samples	N Measured	N Aged	N Samples	N Measured	N Aged
Vb	1/4	*	*		1	184	-

\* Not possible to quantify at this stage.

## FEDERAL REPUBLIC OF GERMANY

(G.Rauck)

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

A comprehensive sampling scheme, including length frequency measurements, otolith sampling, individual fish weights, tagging of fish, stomach sampling, as well as studies on fish density and distribution of demersal fish species was carried out during groundfish surveys.

The monthly sampling programme for the analysis of by-catch species in the shrimp fishery was continued, as well as the joint investigations in the Wadden Sea area of Niedersachsen and Schleswig-Holstein (Young Fish and Brown Shrimp Survey) in spring and autumn together with vessels from the Netherlands and Belgium.

Investigations on cod discards in the commercial fisheries and cod selectivity studies using different mesh openings were carried out in the German Bight.

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

Months	ICES area	Objectives
<b>R.V. "Walther Herwig"</b>		
January	IVb	Groundfish survey (fish disease)
Febr./March	IVa,b,c	IYFS
March	VIa,b	Groundfish and pelagic survey
May/June	IVb	Groundfish survey (fish disease)
June/July	IVa,b,c	Groundfish survey
Sept.-Dec.	XIVb	Groundfish survey
<b>R.V. "Solea"</b>		
January	IVb,c	Groundfish survey
February	IVb,c	Groundfish survey
May	IVb	Sole beam trawl survey
July	IVb	Groundfish and pelagic survey
August	IVb	Groundfish survey and fish disease
December	IVb,c	Groundfish survey



SAMPLING DATA FOR : COD

1989

F.R.G.

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
I	3	2 1)	310	-				
IIa	1	-	-	-		1	358	164
	3	3 1)	841	213				
	4	-	-	-		1	575	279
IIb	3	140 1)	44 036	1309				
	4	15 1)	2 877	-				
IVa	1	40 2)	460	444				
	2/3	42 2)	872	664				
IVb	1	175 2)	3 058	413				
	2	110 2)	197	-				
	2/3	154 2)	7 297	1 500	129 3)			
	3	102 2)	1 874	-				
	4	15 1)	386	-				
		27 2)	1 774	-				
IVc	1	3 2)	44					
IVb	1	12 4)	53					
	2	32 4)	109					
	3	5 4)	5					
	4	6 4)	10					
IVb	2	124 5)	135					
	3/4	124 5)	30					
VIa	1	18 2)	62	62				
	2	19 2)	121	121				
VIIb	2	2 2)	7	7				
VIIg-k	2	5 2)	15	15				
VIIe	2	3 2)	7	7				
XIV	1					8	3 928	176
	2					29	9 793	1 192
	3					1	448	238
	3/4	145 2)	11 117	1 843				

- 1) Samples taken on board of commercial trawler
- 2) Groundfish surveys
- 3) Tagged
- 4) Shrimp bycatch investigations
- 5) Young Fish and Brown Shrimp Survey

SAMPLING DATA FOR : **HADDOCK** **1989** **F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IIb	3	2 1)	654	178				
IVa	1	56 2)	7 002	653				
	2/3	26 2)	5 091	372				
IVb	1	69 2)	4 326	776				
	2/3	30 2)	3 168	846				
	3	3 2)	13	-				
IVa	1	36 2)	547	258				
	2	24 2)	3 553	587				
VIb	1	8 2)	1 506	324				
VIIb	2	3 2)	75	74				
VIIc	2	3 2)	14	10				
VIIg-k	2	4 2)	15	15				

SAMPLING DATA FOR : **WHITING** **1989** **F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IVa	1	49 2)	8 358	353				
	2/3	25 2)	3 542	575				
IVb	1	176 2)	10 067	853				
	2/3	98 2)	15 157	1 198				
	3	106 2)	6 289	-				
	4	27 2)	850	-				
IVc	1	2 2)	163	-				
	2/3	20 2)	1 300	-				
IVb	1	4 4)	6					
	2	40 4)	200					
	3	39 4)	147					
	4	14 4)	39					
IVb	2	124 5)	230					
	3/4	124 5)	469					
VIa	2	24 2)	2384	333				
VIIb	2	2 2)	10	10				
VIIe	2	7 2)	197	123				
VIIg-k	2	6 2)	60	60				

- 1) Samples taken on board of commercial trawler
- 2) Groundfish surveys
- 4) Shrimp bycatch investigations
- 5) Young Fish and Brown Shrimp Survey

SAMPLING DATA FOR : **BLUE LING** **1989** **F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
Vb	1	1	365	225		2	561	291
	4	-	-	-				
VIa,b	1	1	479	479				
XIV	3					4	1 645	807
	4	1	130	130		2	403	282

SAMPLING DATA FOR : **SAITHE** **1989** **F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IIa	1	-	-	-		4	2 183	1 081
	4	-	-	-		3	1 420	693
IVa	1	1	886	288		4	2 098	1 073
	2	-	-	-		10	4 537	2 373
	3	1	296	151		12	5 902	2 963
	4	-	-	-		5	2 888	1 368
VIa	1	1	790	471		4	1 651	945
VIa/VII	2	1	329	41				

SAMPLING DATA FOR : **POLLACK** **1989** **F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
VI	1	1	145	145				

SAMPLING DATA FOR : **SOLE** **1989** **F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IVb	1	110 2)	3 026	1 172		1	285	285
	2/3	12)	49					
	3	56 2)	510	-				
	4	-	-	-				
IVb	1	22 4)	156					
	2	113 4)	1 749					
	3	124 4)	2 253					
	4	16 4)	66					
IVb	2	5)	1 263					
	3	5)	1 095					

2) Groundfish surveys

4) Shrimp bycatch investigations

5) Young Fish and Brown Shrimp Survey

SAMPLING DATA FOR : **DAB**

**1989**

**F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IVa	1	10 2)	679	-				
IVb	1	138 2)	5 879	-				
	2/3	32 2)	1 665	-				
	3	84 2)	8 345	-				
	4	27 2)	2 111	-	2 031 3)			
IVc	1	2 2)	796	-				
	2/3	4 2)	144	-				
IVb	1	26 4)	901					
	2	97 4)	1 591					
	3	82 4)	1 855					
	4	48 4)	8 492					
IVb	2	124 5)	3 005					
	3/4	124 5)	5 526					

SAMPLING DATA FOR : **PLAICE**

**1989**

**F.R.G.**

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IVb	1	93 2)	3 697	1 714				
	2	110 2)	2 387	-				
	2/3	41 2)	749	-				
	3	109 2)	3 635	-				
	4	27 2)	94	-				
IVc	2/3	2 2)	33					
IVb	1	26 4)	3 874					
	2	140 4)	16 484					
	3	133 4)	8 396					
	4	49 4)	7 091					
IVb	2	124 5)	4 010	110				
	3	124 5)	6 400	140				

2) Groundfish surveys

3) Tagged

4) Shrimp bycatch investigations

5) Young Fish and Brown Shrimp Survey

SAMPLING DATA FOR : **FLOUNDER** 1989 F.R.G.

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IVb	2	161 2)	1 509					
	2/3	3 2)	40					
IVb	1	13 4)	238					
	2	126 4)	1 098					
	3	97 4)	516					
	4	31 4)	98					
IVb	2	124 5)	1 080					
	3	124 5)	642					

2) Groundfish surveys

4) Shrimp bycatch investigations

5) Young Fish and Brown Shrimp Survey

SAMPLING DATA FOR : **GREENLAND HALIBUT** 1989 F.R.G.

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other Nr	samp. Meas.	Aged	
XIV	3	5	25	25		4	595	
	4	22	258	258				

SAMPLING DATA FOR : *Sebastes marinus* 1989 F.R.G.

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IIa	1					2	403	100
	2					2	1 105	100
XIV	3	97	12 272	725				

SAMPLING DATA FOR : *Sebastes mentella* 1989 F.R.G.

		Research vessels				Market sampling		
		Nr of fish				Nr of fish		
Area	Season	Nr samp.	Meas.	Aged	Other	Nr samp.	Meas.	Aged
IIa	1					2	871	81
	2					1	227	76
	4					1	366	103
Vb	1					1	618	200
	4					5	2 445	484
XIV	3	65	9 032	625				

**FINLAND**

(E. Aro)

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

# FRANCE

(A.Souplet)

SAMPLING DATA FOR : **WHITING** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	12	-	2 484	536
IVb	1	28	-	2 848	697
IVc	1	10	-	1 133	562
	2	-	1	-	296
	4	-	1	-	399
VIIId	1	-	1	-	296
	2	-	1	518	328
	3	-	4	656	-
	4	-	3	355	123
	4	12	-	487	413
VIIIf,g	1	-	12	638	625
	2	-	12	1 249	617
	3	-	12	721	692
	4	-	12	658	609
VIIIa,b	1	-	12	561	-
	1	21	-	220	-
	2	-	8	315	-
	2	31	-	509	-
	3	-	7	377	-
	3	30	-	844	112
	4	-	8	235	-
	4	15	-	2 525	-

SAMPLING DATA FOR : **HADDOCK** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	12	-	2 457	931
IVb	1	8	-	377	220
VIa	1	-	33	2 509	-
	2	-	16	1 044	-
	3	-	30	1 913	-
	4	-	34	2 374	-
VIIIa,b	1	-	-	14	-

SAMPLING DATA FOR : COD

1989

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	12	-	227	220
IVb	1	22	-	521	439
IVc	1	13	-	148	135
	2	-	1	-	283
	3	-	1	-	405
	4	-	1	-	285
VIa	1	-	3	531	345
	2	-	3	438	320
	3	-	3	468	336
	4	-	3	394	259
VIIa	4	-	1	114	-
VIId	2	-	5	1 275	-
	3	-	4	249	-
	4	8	-	24	24
	4	-	2	121	-
VIIIf,g	1	-	3	955	278
	2	-	3	768	265
	3	-	3	1 159	326
	4	-	3	116	313

SAMPLING DATA FOR : SAITHE

1989

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	5	-	27	25
VIa	1	-	60	1 023	390
	2	-	60	2 058	482
	3	-	59	2 055	432
	4	-	60	1 900	390
VIa	1	-	3	531	345
	2	-	3	438	320
	3	-	3	468	336
	4	-	3	394	259



SAMPLING DATA FOR : **POUT**

**1989**

**FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVb	1	2	-	2	-
IVc	1	6	-	72	-
	2	-	1	-	311
	3	-	1	-	235
VIIId	1	-	4	212	-
	2	-	6	1 093	230
	3	-	3	366	341
	4	19	-	1 571	510
	4	-	1	241	-
VIIIa,b	4	-	-	4 663	548

SAMPLING DATA FOR : **POLLACK**

**1989**

**FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIe	1	-	2	896	89
	2	-	2	886	169
	3	-	2	950	140
	4	-	2	776	106
VIIIa,b	1	-	-	480	250
	2	-	-	494	263
	4	-	-	33	-

SAMPLING DATA FOR : **NORWAY POUT**

**1989**

**FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	12	-	1 074	67
IVb	1	3	-	370	92

SAMPLING DATA FOR : **HAKE**

**1989**

**FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	-	24	783	-
	2	-	13	358	-
VIIb,f,g,h	1	-	13	534	-
	2	-	8	208	-
	3	-	19	498	-
	4	-	22	764	-
VIIIa,b	1	-	61	2 688	-
	1	23	-	2 566	130
	2	-	67	3 419	-
	2	40	-	6 604	-
	3	-	52	3 388	-
	3	48	-	5 890	-
	4	-	50	2 464	-
	4	29	-	14 788	400

SAMPLING DATA FOR : LING

1989

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIe	1	-	2	1 103	-
	2	-	2	1 548	-
	3	-	2	1 279	-
	4	-	2	896	-
VIIIf,h,j	1	-	23	475	177
	2	-	41	815	348
	3	-	35	615	279
	4	-	25	193	207
VIIIa,b	4	-	-	40	40

SAMPLING DATA FOR : BLUE LING

1989

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIIf,g	1	-	8	136	-
		2	-	24	415
		3	-	2	38
					316

SAMPLING DATA FOR : MEGRIM

1989

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VII (- d,e)	1	-	-	5 688	240
	2	-	-	6 752	333
	3	-	-	3 802	387
	4	-	-	4 319	327
VIIIa,b	4	-	-	580	250

SAMPLING DATA FOR : RED GURNARD

1989

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIId	1	-	8	769	-
	2	-	6	1 100	390
	3	-	8	950	598
	4	34	-	493	492
	4	-	8	1 094	118
VIIIa,b	4	-	-	1 979	-

SAMPLING DATA FOR : BASS

1989

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIe	1	-	2	74	31
	2	-	2	187	49
	3	-	2	305	102
	4	-	2	138	30
VIIIa,b	4	-	-	20	-

SAMPLING DATA FOR : **BLUE WHITING** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIIa,b	4	-	-	12 585	-

SAMPLING DATA FOR : **PLAICE** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	8	-	29	13
IVb	1	21	-	1 243	537
IVc	1	11	-	281	263
	2	-	2	700	-
	3	-	1	468	-
	4	-	1	700	-
VIId	1	-	14	696	-
	2	-	30	3 329	439
	3	-	17	1 364	324
	4	22	-	319	226
	4	-	19	1 505	101
VIIIa,b	4	-	-	62	-

SAMPLING DATA FOR : **DAB** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	11	-	1 043	301
IVb	1	26	-	3 851	781
IVc	1	13	-	706	384
VIId	1	-	8	441	-
	2	-	19	1 738	112
	3	-	5	643	234
	4	22	-	664	400
	4	-	3	315	-

SAMPLING DATA FOR : **LEMON SOLE** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVa	1	11	-	307	197
IVb	1	13	-	38	27
IVc	1	3	-	4	-
VIId	4	7	-	83	62

SAMPLING DATA FOR : **SOLE** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IVb	1	2	-	2	-
IVc	1	2	-	3	-
	2	-	2	1 347	-
	3	-	1	484	-
	4	-	2	1 027	-
VIId	1	-	17	672	-
	2	-	48	4 369	252
	3	-	41	3 625	467
	4	2	-	6	-
	4	-	34	3 504	118
VIIa,b	1	-	38	1 921	-
	1	22	-	633	233
	2	-	50	2 405	-
	2	38	-	517	282
	3	-	36	2 207	-
	3	33	-	394	251
	4	-	40	2 090	-
	4	30	-	350	350

SAMPLING DATA FOR : **WHITE ANGLER\*** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VII+VIII (-VIId,e)	1	-	-	2 600	256
	2	-	-	2 580	250
	3	-	-	2 540	245
	4	-	-	2 834	267
VIIIa,b	1	-	31	819	-
	1	10	-	18	-
	2	-	30	563	-
	2	23	-	60	-
	3	-	16	394	-
	3	19	-	27	-
	4	-	13	308	-
	4	16	-	114	65

\**Lophius piscatorius*

SAMPLING DATA FOR : **BLACK ANGLER\*** **1989** **FRANCE**

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VII+VIII (-VIId,e)	1	-	-	1 920	165
	2	-	-	1 900	168
	3	-	-	1 905	160
	4	-	-	1 970	183
VIIIa,b	4	-	-	54	50

\**Lophius budegassa*

SAMPLING DATA FOR : **RED MULLET**

**1989**

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIIa,b	1	-	7	439	-
	2	-	10	650	-
	2	38	-	371	-
	3	-	5	248	-
	4	-	10	544	-
	4	27	-	120	-

SAMPLING DATA FOR : **NEPHROPS**

**1989**

FRANCE

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VIIIa,b	1	-	6	388	-
	1	15	-	1 960	-
	2	-	4	528	-
	2	29	-	5 184	-
	3	-	4	630	-
	3	29	-	3 165	-
	4	-	4	473	-
	4	22	-	1 252	-

# GERMAN DEMOCRATIC REPUBLIC

(B.Vaske)

SAMPLING DATA FOR : *Sebastes mentella* 1989 G.D.R.

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Commercial	Measured	Aged
IIa	1	-	7	1 216	294
IIb	1	-	9	1 203	496
XII	2	-	12	3 161	499
	3	1	-	378	98
XIVa	2	15	11	7 096	1 497

SAMPLING DATA FOR : GREENLAND HALIBUT 1989 G.D.R.

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Commercial	Measured	Aged
IIb	3	-	4	-	178

## ICELAND

(S.A.Schopka)

The biological sampling programme and research work carried out on demersal fish was following the same lines as in previous years, i.e. based on research vessel data and market samples.

Most of the research vessel sampling was collected during the extensive groundfish survey (600 stations) in March 1989. This survey was made simultaneously on board of five stern trawlers of the same type.

Market samples were collected at the headquarters of the Marine Research Institute in Reykjavík and the five branches of MRI located at other important fishing harbours. Also fishery inspectors collected a considerable amount of data on demersal fish both at the market and on board of commercial fishing vessels.

The numbers of fish sampled by species are shown in the tables.

SAMPLING DATA FOR : COD				1989		ICELAND
		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	1 308		90 498	4 747	
			90	15 549	2 505	
	2	124		23 439	952	
			47	4 770	2 011	
	3	169		35 414	1 306	
			22	1 456	1 130	
	4	246		25 868	1 889	
			32	4 456	500	
Total		1 847	191	201 450	15 040	

SAMPLING DATA FOR : HADDOCK				1989		ICELAND
		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	959		62 654	2 555	
			25	3 213	1 102	
	2	53		8 339	332	
			17	1 943	702	
	3	57		10 395	299	
			10	1 462	223	
	4	112		9 577	967	
			14	2 174	203	
Total		1 181	66	99 757	6 383	

SAMPLING DATA FOR : **SAITHE** **1989** ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	445		3 621	1 162	
			23	2 561	903	
	2	17		2 236	300	
			10	943	498	
	3	20		3 080	199	
			15	1 615	601	
	4	35		4 495	201	
			6	463	200	
Total		517	54	19 014	4 064	

SAMPLING DATA FOR : **WHITING** **1989** ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	105		2 750		4 562
Total		105		2 750		4 562

SAMPLING DATA FOR : **LING** **1989** ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	148		292	188	
Total		148		292	188	

SAMPLING DATA FOR : **BLUE LING** **1989** ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	74		494	193	
	4	1		1		
Total		75		495	193	

SAMPLING DATA FOR : **TUSK** **1989** ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	280		1 353	563	
	4	1		3		
Total		281		1 356	563	



SAMPLING DATA FOR : *Sebastes marinus* 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	550		54 308		123 442
			6	497	378	
	2	1		145		
			2	333	181	
	3	12		3 737		
			5	1 765	178	
	4	40		1 834		955
			13	3 729	159	
Total		603	26	66 348	6 383	124 397

SAMPLING DATA FOR : *Sebastes mentella* 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	36		1 381		108
			8	2 409	326	
	2	4		1 158		
			1	279		
	3	4		853		
	4	2		642		
			6	917	138	
Total		46	15	7 640	464	1 108

SAMPLING DATA FOR : *Sebastes viviparus* 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	23				276
			1	25		
	2		1	7		
	3		4	74		
	4		7	64		
Total		23	13	170		276

SAMPLING DATA FOR : SILVERSMELT 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	70		2 285	997	2 652
	4	3		10		
Total		73		2 295	997	2 652

SAMPLING DATA FOR : CATFISH 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	489		15 463	2 203	
			1	192	100	
	2		5	544	200	
	3		2	98	100	
	4	31		250		
Total		520	8	16 547	2 603	

SAMPLING DATA FOR : LUMPSUCKER 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	271		1 975		
			1	54		
	2		41	4 603		
Total		271	42	6 632		

SAMPLING DATA FOR : WITCH 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	167		2 083		
			6	562	300	
	2	1		229		
			2	197	100	
	4	5		10		
Total		173	10	3 351	500	

SAMPLING DATA FOR : GREENLAND HALIBUT 1989 ICELAND

		Nr of samples		Nr of fish		
Area	Season	Res. vessels	Market	Measured	Aged	Counted
Va	1	64		1 555	13	793
			3	268		
	2	76		2 409	328	
			7	819	970	
	3	83		1 397	208	91
Total		223	21	8 710	1 619	884

# IRELAND

(E. Fahy)

SAMPLING DATA FOR : COD 1989 IRELAND

			Nr of fish			
Area	Season	Nr samples	Aged	Weighed	Meas. only	Total nr
VIa-N	1/4	74	233	2432	029 2 272	
VIa-S	1/4	56	361	3652	068 2 433	
VIIa-N	1/4	11	440	443345	788	
VIIa-S	1/4	23	288	299793	1 092	
VIIb	1/4	95	417	4191	563 1 882	
VIIg	1/4	3	-	- 78	78	

SAMPLING DATA FOR : HADDOCK 1989 IRELAND

			Nr of fish			
Area	Season	Nr samples	Aged	Weighed	Meas. only	Total nr
VIa-N	1/4	53	224	2243	319 3 543	
VIa-S	1/4	36	302	3022	727 3 032	
VIb	1/4	5	79	80816	896	
VIIb	1/4	39	83	921	527 1 619	

SAMPLING DATA FOR : WHITING 1989 IRELAND

			Nr of fish			
Area	Season	Nr samples	Aged	Weighed	Meas. only	Total nr
VIa-N	1/4	17	-	1402	530 2 670	
VIa-S	1/4	29	-	2696	854 7 123	
VIIa-N	1/4	13	-	3031	892 2 195	
VIIa-S	1/4	20	-	3263	609 3 935	
VIIb	1/4	23	-	2833	935 4 218	
VIIg	1/4	6	-	-1	362 1 362	

SAMPLING DATA FOR : HAKE 1989 IRELAND

			Nr of fish			
Area	Season	Nr samples	Aged	Weighed	Meas. only	Total nr
VIa-S	1/4	28	-	-643	643	
VIIb	1/4	38	-	-990	990	
VIIg	1/4	34	-	-2	265 2 265	
VIIj	1/4	22	-	5241	951 2 475	

SAMPLING DATA FOR : **SOLE** **1989** IRELAND

			Nr of fish		
Area	Season	Nr samples	Aged	Weighed Meas. only	Total nr
VIIa-N	1/4	7	-	-1 852	1 852

SAMPLING DATA FOR : **PLAICE** **1989** IRELAND

			Nr of fish		
Area	Season	Nr samples	Aged	Weighed Meas. only	Total nr
VIIa-N	1/4	15	-	2751 756	2 031
VIIa-S	1/4	17	-	3172 048	2 365

SAMPLING DATA FOR : **MEGRIM** **1989** IRELAND

			Nr of fish		
Area	Season	Nr samples	Aged	Weighed Meas. only	Total nr
VIa-N	1/4	1	-	- 0	0
VIa-S	1/4	49	-	-6 276	6 276
VIb	1/4	1	-	-124	124
VIIb	1/4	20	-	-3 571	3 571
VIIg	1/4	20	-	-4 186	4 186
VIIj	1/4	22	-	791 042	1 121

SAMPLING DATA FOR : *Lophius budegassa* **1989** IRELAND

			Nr of fish		
Area	Season	Nr samples	Aged	Weighed Meas. only	Total nr
VIa-N	1/4	2	-	- 13	13
VIa-S	1/4	83	-	-277	277
VIIb	1/4	54	-	-688	688
VIIg	1/4	20	-	2737	737
VIIj	1/4	26	-	68282	350

SAMPLING DATA FOR : *Lophius piscatorius* **1989** IRELAND

			Nr of fish		
Area	Season	Nr samples	Aged	Weighed Meas. only	Total nr
VIa-N	1/4	17	-	-273	273
VIa-S	1/4	128	-	-3513	3513
VIb	1/4	5	-	-126	126
VIIb	1/4	78	-	-1411	1411
VIIg	1/4	38	-	381494	1532

## THE NETHERLANDS

(F. van Beek)

In 1989 the market sampling of landings of the Dutch fleet from the North Sea was continued for the following species: brill (*Scophthalmus rhombus*), cod (*Gadus morhua*), plaice (*Pleuronectes platessa*), sole (*Solea solea*), turbot (*Scophthalmus maximus*) and whiting (*Merlangius merlangus*). For roundfish the market sampling was stratified on a Roundfish Area basis. For the other species samples were stratified by harbour. All samples were also stratified by market category. The tables below indicate the level of sampling.

In Januari, March and May, surveys were carried out on board of R.V. "Tridens" (3 weeks) and R.V. "Isis" (2 weeks) in the southern and central North Sea with the standard GOV trawl within the framework of pilot multispecies program.

In February, R.V. "Tridens" (5 weeks) and R.V. "Isis" (3 weeks) participated in the International Young Fish Survey (IYFS). These surveys, carried out since 1965, estimate the relative abundance of 1 and 2 year old herring and roundfish.

In the period January-April, R.V. "Tridens" (2 weeks), R.V. "Isis" (6 weeks) and a chartered vessel (3 weeks) carried out cod and plaice egg-surveys in the North Sea. A combined egg survey in the period April-July on sole and horse mackerel was carried out by R.V. "Isis" (10 weeks) in the southern North Sea. The aim of these surveys is to estimate the egg production and stock size of these species in this area.

In July, 1083 dabs (*Limanda limanda*) were tagged along the Dutch coast, north of Terschelling by R.V. "Isis" (2 weeks)

On board of R.V. "Isis", 303 young sole (range 20-26 cm) were tagged along the Danish coast with the Peterson mini tag in June (2 weeks).

In September-October, R.V. "Tridens" (3 weeks), R.V. "Isis" (4 weeks), R.V. "Stern" (3 weeks) and R.V. "Schollebaar" (2 weeks) participated in the Demersal Young Fish Surveys (DYFS). These surveys estimate the relative abundance of brown shrimp and juvenile plaice and sole in the continental nursery areas. The surveys are carried out since 1969 in collaboration with Belgium and the Federal Republic of Germany. On board of the Tridens, the SNS (Sole Net Survey) program was carried out simultaneously. In April, a SNS survey was carried out on a reduced station grid by R.V. "Tridens" (3 weeks).

In August, a Beam Trawl Survey (BTS) was carried out by R.V. "Isis" (4 weeks) in the southern North Sea in collaboration with Belgium in order to investigate the abundance and distribution of adult plaice and sole in these areas. A similar survey on a reduced station grid was carried out by R.V. "Tridens" in April in combination with the SNS survey.

In October-November, R.V. "Tridens" (3 weeks) and R.V. "Isis" (3 weeks) carried out a survey in the southern North Sea with the GOV trawl directed to roundfish. This survey has been held since 1980 (Dutch Groundfish Survey).

SAMPLING DATA FOR : COD

1989 THE NETHERLANDS

		Market		Research vessels
Area *	Season	Measured	Aged	Aged
NRFA 1	1	-	-	140
NRFA 2	1	-	-	35
	2	93	-	-
NRFA 3	1	-	-	39
NRFA 5	1	110	-	3
	2	426	50	-
	3	77	-	-
	4	-	-	4
NRFA 6	1	1 532	300	123
	2	838	260	-
	3	458	150	-
	4	2 274	150	569
NRFA 7	1	-	-	3
	4	44	-	56
Total	1/4	5 808	910	972

SAMPLING DATA FOR : HADDOCK

1989 THE NETHERLANDS

		Market		Research vessels
Area *	Season	Measured	Aged	Aged
NRFA 1	1	-	-	194
NRFA 2	1	-	-	98
NRFA 3	1	-	-	141
NRFA 6	4	-	-	4
Total	1/4	-	-	437

\* North Sea Roundfish Sampling Areas

SAMPLING DATA FOR : **WHITING** **1989** **THE NETHERLANDS**

		Market		Research vessels
Area *	Season	Measured	Aged	Aged
NRFA 1	1	-	-	128
NRFA 2	1	-	-	114
	2	37	-	-
NRFA 3	1	-	-	104
NRFA 5	1	106	-	88
	2	274	50	-
	3	530	100	-
	4	-	-	69
NRFA 6	1	1 582	200	155
	2	875	100	-
	3	548	100	-
	4	1 920	200	959
NRFA 7		-	-	92
Total	1/4	5 872	750	1 709

SAMPLING DATA FOR : **NORWAY POUT** **1989** **THE NETHERLANDS**

		Market		Research vessels
Area *	Season	Measured	Aged	Aged
NRFA 1	1	-	-	77
NRFA 2	1	-	-	34
NRFA 3	1	-	-	36
Total	1/4	-	-	147

\* North Sea Roundfish Sampling Areas

SAMPLING DATA FOR : **PLAICE** **1989** **THE NETHERLANDS**

		Market		Research vessels
Area	Season	Measured	Aged	Aged
IV	1	-	1 378	-
	2	-	1 010	1 241
	3	-	1 015	468
	4	-	960	1 614
Wadden-sea	4	-	-	248
Zeeland estuary	4	-	-	124
Total	1/4	-	4 363	3 695

SAMPLING DATA FOR : **SOLE** **1989** **THE NETHERLANDS**

		Market		Research vessels
Area	Season	Measured	Aged	Aged
IV	1	-	901	-
	2	-	1 427	635
	3	-	799	306
	4	-	772	723
Wadden-sea	4	-	-	65
Zeeland estuary	4	-	-	62
Total	1/4	-	3 899	1 791

SAMPLING DATA FOR : **TURBOT** **1989** **THE NETHERLANDS**

		Market		Research vessels
Area	Season	Measured	Aged	Aged
IV	1	709	98	-
	2	672	72	16
	3	665	138	84
	4	977	160	85
Zeeland estuary	4	-	-	1
Total	1/4	3 023	468	186

SAMPLING DATA FOR : **BRILL** **1989** **THE NETHERLANDS**

		Market		Research vessels
Area	Season	Measured	Aged	Aged
IV	1	482	99	-
	2	346	32	33
	3	477	96	64
	4	475	131	67
Zeeland estuary	4	-	-	7
Total	1/4	1 780	358	171

SAMPLING DATA FOR : **DAB** **1989** **THE NETHERLANDS**

		Market		Research vessels
Area	Season	Measured	Aged	Aged
IV	2	-	-	740
	3	-	-	370
	4	-	-	1 467
Wadden-sea	4	-	-	154
Zeeland estuary	4	-	-	57
Total	1/4	-	-	2 788



SAMPLING DATA FOR : FLOUNDER 1989 THE NETHERLANDS

		Market		Research vessels
Area	Season	Measured	Aged	Aged
IV	1	-	276	-
	2	-	104	-
	3	-	135	347
	4	-	-	175
Lake	2	-	161	-
IJsselmeer	3	-	142	-
Lake	2	-	139	-
Haringvliet	3	-	92	-
Total	1/4	-	1 049	522

## NORWAY

(T.Jakobsen & O.M.Smedstad)

### Sub-areas I and II.

Routine research surveys were carried out as in previous years, accounting for most of the activity at sea. In addition, there was some activity linked to short term projects, mostly concerning the spawning process and distribution of eggs. A new experiment which may be developed into a routine, was to use 15 commercial trawlers for a one-week bottom trawl survey in the Barents Sea/Svalbard area.

The abundance of young cod and haddock and redfish species in the Barents Sea was investigated during a combined acoustic and stratified bottom trawl survey in January-March. The distribution and abundance of spawning cod was investigated by acoustic surveys in the Lofoten area in February-March. Combined with shrimp investigations, the distribution of young cod and haddock was studied in the central Barents Sea in April-May and in the Svalbard area in July-August. The distribution and abundance of cod, haddock, redfish, and Greenland halibut was investigated in the Svalbard area in September-October. Part of this study was included in a multi-species acoustic survey carried out together with U.S.S.R. vessels during the same period, when the distribution of cod, haddock, redfish and some pelagic species was investigated also in the Barents Sea.

Stomach samples from cod and haddock were collected on all routine surveys for cod/haddock in the Barents Sea and at Svalbard. Stomachs were also sampled on other surveys in the Barents Sea in April-June.

In November a bottom trawl survey with 15 commercial trawlers was carried out during one week in the Barents Sea under the supervision of the Institute of Marine Research. The results of the experiment were promising and the intention is to repeat the survey next year.

About 2000 spawning cod of the coastal type were tagged in the Porsangerfjord southeast of North Cape in April-May. Also during this cruise the distribution of eggs of the coastal cod from spawning grounds in the Finnmark fjords was studied, and samples were taken of commercial landings of cod.

Investigations on cod larvae in the Lofoten area were carried out in April-May. The post-larvae were studied in July-August. In August-September the International 0-group Survey, aimed primarily at cod, was carried in the Barents Sea and adjacent waters in cooperation with U.S.S.R. vessels.

Studies on the spawning of haddock were carried out in April-May.

Investigations on the vertical distribution of saithe eggs were carried out in March-April. An 0-group (post-larvae) survey for saithe was carried out north of 62° N up to the Lofoten islands in April-May, and an acoustic survey for saithe (including also redfish) was carried out on the coastal banks from North Cape down to 62° N in November.

The sampling programme for commercial catches of cod, haddock, saithe, redfish and Greenland halibut was continued.

Sub-area IV.

The distribution and abundance of I- and II-group gadoids was studied in January-February as part of the International Young Fish Survey. During the annual acoustic survey for saithe in February, weather conditions prevented the programme from being carried out. In April, the distribution of saithe post-larvae in the North Sea was studied. The distribution and abundance of sandeel in the North Sea was investigated during a survey in April. The sampling of commercial catches of saithe, sandeel and Norway pout was continued.

**POLAND**

(J.Janusz and M.Liwoch)

No biological samples were collected in the northeast Atlantic area by Poland.

## PORTUGAL

(F.Cardador)

During 1989 the National Institute of Fisheries Research (INIP) has continued the National Sampling Programme at the main fishing ports. The main objective of this sampling programme is to provide length frequency distributions of the landings of the commercial species.

INIP has conducted two groundfish surveys on board of the R/V "NORUEGA". These surveys covered the entire coast and the main goal was to estimate distribution and indices of abundance and recruitment of the most important species. Those surveys took place in summer (July/August) and in autumn (October/November).

A special survey took place in September on board of R/V "NORUEGA" to delineate and to map the topography of the bottom of some areas off the Portuguese coast. Some fishing operations were realized with bottom trawl nets mainly directed to shellfish.

Also, groundfish surveys on board of R/V "MESTRE COSTEIRO" were carried out in June, July, September and December, in order to estimate the distribution and catch rates of monkfish and cephalopods along the south-west and south coast of Portugal.

The following tables present the sampling data collected for hake (*Merluccius merluccius*), black scabbard fish (*Aphanopus carbo*), three species of seabreams (*Boops boops*, *Pagellus acarne* and *Spondyllosoma cantharus*) and monkfish (*Lophius budegassa* and *L. piscatorius*).

SAMPLING DATA FOR : HAKE				1989	PORTUGAL
		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
Xa	1	-	213	19 962	
	2	-	197	20 075	
	3	136	158	24 345	
	4	111	177	16 587	
Total		247	745	80 969	

SAMPLING DATA FOR : BLACK SCABBARF FISH 1989					PORTUGAL
		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IXa	1	-	35	2 700	
	2	-	20	1 960	
	3	-	31	2 908	
	4	-	14	1 320	
Total		-	100	8 888	

SAMPLING DATA FOR : *Boops boops* 1989 PORTUGAL

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IXa	1	-	30	1 516	
	2	-	34	1 772	
	3	21	32	2 671	
	4	29	33	2 555	
Total		50	129	8 514	

SAMPLING DATA FOR : *Pagellus acarne* 1989 PORTUGAL

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IX	1	-	27	2 109	
	2	-	32	2 717	
	3	19	37	4 042	
	4	19	36	4 509	
Total		38	132	13 377	

SAMPLING DATA FOR : *Spondyliosoma cantharus* 1989 PORTUGAL

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IX	1	-	23	386	
	2	-	26	1 001	
	3	8	27	744	
	4	4	25	1 204	
Total		12	101	3 335	

SAMPLING DATA FOR : MONKFISH\* 1989 PORTUGAL

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
IXa	1	-	90	1 501	
	2	12	80	951	
	3	32	79	1 021	
	4	11	61	615	
Total		55	310	4 088	

\* *Lophius budegassa* & *Lophius piscatorius*

## SPAIN

(F.J.Pereiro)

In 1989 two groundfish surveys have been conducted, one covering the continental shelf of Galicia (IXa North + VIIIc West) and the other one Division VIIIc. The main aim of these two bottom trawl surveys was to estimate recruitment indices of hake and abundance indices of the demersal species (e.g. hake, megrim, monk) in these waters. The first survey took place in September (12-27) and the second one in October (2 -18). Both were carried out by R/V "F.de P.Navarro".

Over the year a sampling programme at sea was developed to investigate the species composition, length distribution and discards of the total Spanish fleet fishing in Subarea VII. The number of hauls per quarter sampled and the number of fish measured on board are shown by species in the table below.

SPECIES	Quarter	1	2	3	4
	Nr hls sampled	-	40	67	69
<i>Merluccius merluccius</i>	-	3 805	3 255	5 004	
<i>Lepidorhombus whiffiagonis</i>	-	6 485	8 646	4 763	
<i>Lepidorhombus boscii</i>	-	1 603	916	2 011	
<i>Lophius budegassa</i>	-	1 089	4 105	1 203	
<i>Lophius piscatorius</i>	-	1 062	1 295	1 155	

Numbers of samples and numbers of fish measured and aged on board of research vessels and in the market sampling programme are given in the next tables.

### SAMPLING DATA FOR : HAKE 1989 SPAIN

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VI	1		2	434	
	4		8	581	
VII	1		27	6 139	
	2		29	6 916	
	3		28	5 978	
	4		33	7 354	
VIIIa,b	1		53	7 373	
	2		77	8 733	
	3		48	7 345	
	4		57	10 851	
VIIIc	1		67	5 694	
	2		96	9 608	
	3	29	71	16 554	
	4	40	72	8 317	
IXa	1		36	3 725	
	2		25	2 740	
	3	19	20	6 678	
	4		19	2 593	

SAMPLING DATA FOR : *L. whiffiagonis*

1989

SPAIN

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VI	4		2	434	
VII	1		26	4 473	
	2		23	4 447	
	3		24	3 722	
	4		27	4 234	
VIIIa,b	1		12	2 066	
	2		15	1 526	
	3		18	2 569	
	4		22	1 982	
VIIIc	1		19	415	
	2		30	2 651	
	3	27	38	3 667	
	4	35	30	2 474	
IXa	3	4		5	

SAMPLING DATA FOR : *Lepidorhombus boscii*

1989

SPAIN

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VII	1		26	346	
	2		23	620	
	3		24	1 116	
	4		27	998	
VIIIa,b	1		7	46	
	2		15	274	
	3		18	398	
	4		22	528	
VIIIc	1		19	1 039	
	2		30	1 764	
	3	27	38	3 948	
	4	35	30	2 705	
IXa	1		12	1 017	
	2		10	1 018	
	3	16	9	1 284	
	4		12	1 317	



SAMPLING DATA FOR : *Lophius piscatorius* 1989 SPAIN

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VI	4		1	82	
VII	1		20	1 178	
	2		21	1 376	
	3		21	1 526	
	4		25	1 237	
VIIIa,b	1		17	1 318	
	2		52	2 119	
	3		28	1 437	
	4		33	1 541	
VIIIc	1		25	477	
	2	19	34	1 248	
	3	33	27	568	
	4		34	1 080	
IXa	1			7	
	2			29	
	3	6		8	
	4			161	

SAMPLING DATA FOR : *Lophius budegassa* 1989 SPAIN

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VII	1		20	1 794	
	2		21	1 917	
	3		22	1 495	
	4		21	1 563	
VIIIa,b	1		17	1 732	
	2		42	2 353	
	3		27	1 604	
	4		33	1 854	
VIIIc	1		25	460	
	2		35	771	
	3	8	26	272	
	4	19	34	514	
IXa	1		5	377	
	2		4	208	
	3	6	2	52	
	4		11	490	

SAMPLING DATA FOR : *Pagellus bogaraveo*

1989

SPAIN

		Nr of samples		Nr of fish	
Area	Season	Res. vessels	Market	Measured	Aged
VII	3		1	45	
VIIIa,b	1		2	31	
	2		8	307	
	3		1	31	
VIIIc	1		16	468	
	2		20	731	
	3		17	307	
	4		9	193	

## SWEDEN

(P-O.Larsson)

Sweden took part in the International Young Fish Survey in the North Sea and Division IIIa.

A transfer experiment with plaice was evaluated. About 2500 captured plaice from the northern Kattegat were moved to the northern Skagerak coast of Sweden and released after tagging. Most of them were 2 years old (15-30 cm, average ca 22 cm; fig 1). The recaptures reveal an immediate southward migration along the Swedish coast to the southern Skagerak followed by a westward movement all the way out into the North Sea (fig 2). Some late recaptures, not included in fig 2, were reported from England. Plaice recaptured in the western Skagerak were in some cases reported to be spawning.

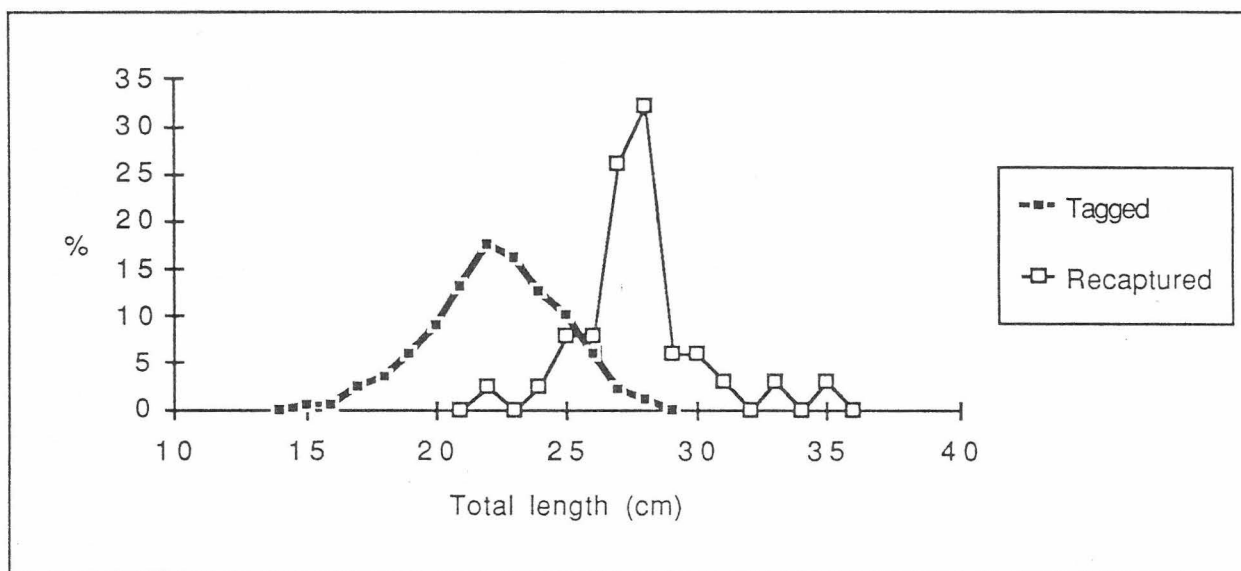


Figure 1. Length frequency distribution of tagged and recaptured plaice.

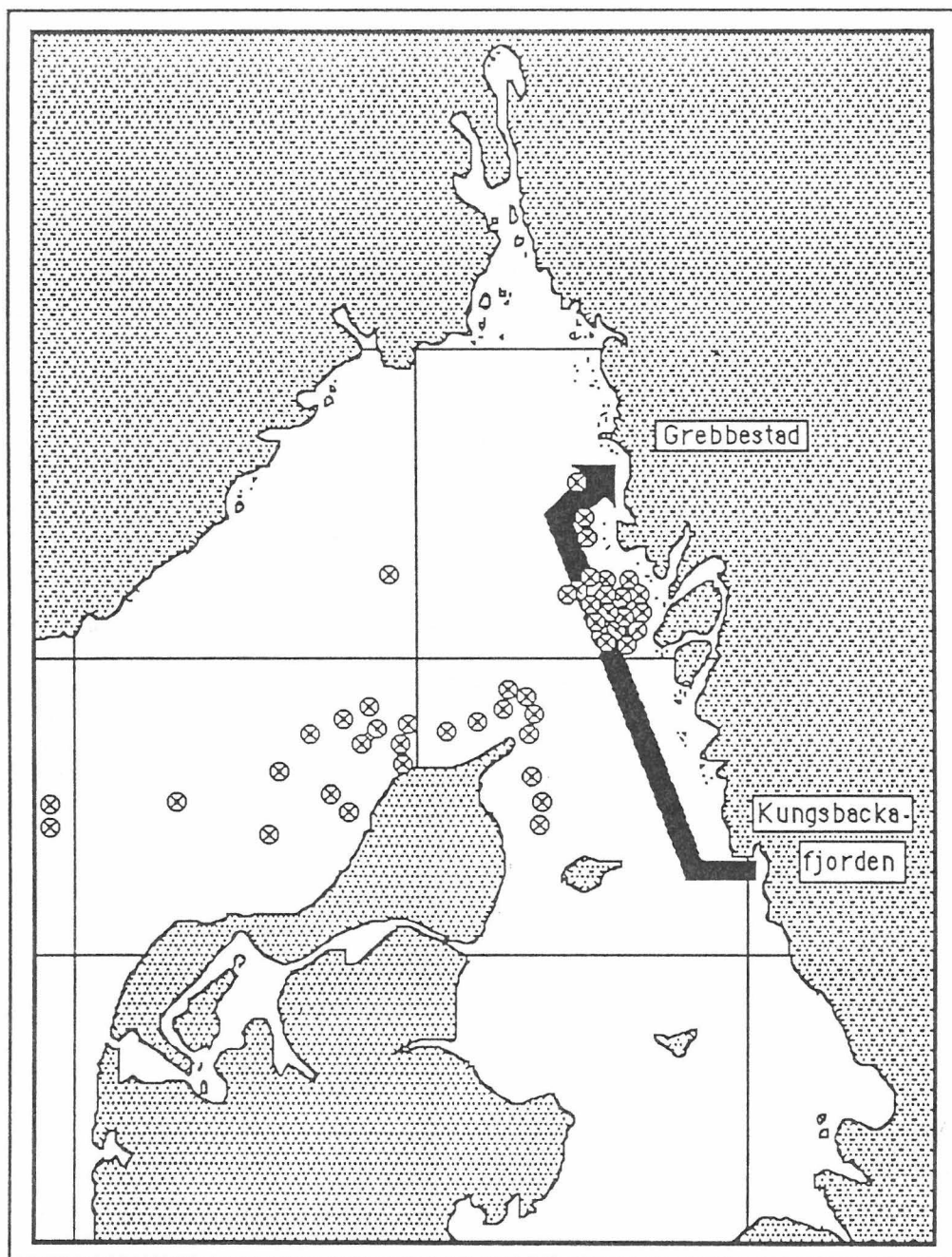


Figure 2. Transfer of plaice (arrow) and subsequent recaptures.

## UNITED KINGDOM (England and Wales)

(C.T.Macer)

The market sampling programme was continued in 1989. Details of number of fish measured and otolithed are available on request.

The following research vessel cruises took place in 1989:

- R.V. "CIROLANA" participated in the North Sea International Young Fish Survey in February, and carried out bottom trawl surveys in the western Celtic Sea in March and in the North Sea in August/September.
- Data for gastric evacuation studies were collected in December.
- Plaice fecundity studies were made on R.V. "CORYSTES" in January in the southern North Sea, and sole spawning was investigated in the Bristol Channel in April and in the eastern Irish Sea and Bristol Channel in September.
- A survey to measure the distribution and abundance of commercial flatfish species in the eastern English Channel was carried out in August.
- A survey for 0- and 1-group gadoids was made in the north-western Irish Sea in September.
- Vessels were chartered to carry out trawl surveys along the north Wales coast in June and October/November, and to obtain data on the timing of ovulation in Irish Sea sole in May.
- Hatchery reared sole were released into the Irish Sea in September and wild sole were tagged. Sole were also surveyed in the western English Channel in September.
- An inshore beam trawl and push net survey took place between Flamborough Head in the North sea to Swanage Bay in the English Channel to collect data for juvenile year class determination.
- The incidence of fish diseases in the north-eastern Irish Sea was investigated in September.

## UNITED KINGDOM (Scotland)

(R.Cook)

Monitoring of the main demersal species by Scotland is undertaken through three main sampling activities. These are market sampling of fish landed by the commercial fishery, sampling fish caught but discarded at sea and annual trawl surveys by the Department's research vessels. Most of the data collected are used by the ICES Roundfish Working Group (RFWG) and Industrial Fish Working Group.

During 1989 sampling continued at the same level as in previous years. port samples are stratified by month, gear type and sea area. The numbers of fish sampled summarised by ICES sub-areas and Divisions are given in the table below.

	North Sea (IV)		West of Scotland (VIa)		Rockall (VIb)	
Species	measured	aged	measured	aged	measured	aged
Cod	57 157	12 958	11 750	4 114	653	434
Haddock	108 630	12 560	26 667	4 768	7 760	1 236
Whiting	77 306	7326	26 157	3 612	-	-
Saithe	15 433	6 811	8 166	3 155	502	328
Lemon sole	22 806	2 989	3 504	798	1 463	282
Plaice	20 145	3 764	4 955	791	-	-
Sandeel	*9 322	*1 123	7 579	905	-	-

\*: mostly from Shetland.

In 1989, approximately 70 commercial vessels were sampled for discards. This amounted to a total of 604 individual hauls in the North Sea and 167 to the West of Scotland. Discard sampling, like port sampling is stratified by gear type and sea area but because of resource limitations sampling is undertaken on a quarterly basis. Aggregate numbers of fish sampled are given below.

	North Sea (IV)		West of Scotland (VIa)		
Species	measured	aged	measured	aged	
Cod	12 960	2657	813	305	
Haddock	53 446	3767	5 694	705	
Whiting	42 769	3666	10 202	1 019	
Saithe	414	209	209	12	

The following bottom trawl surveys were carried out for groundfish:

Vessel	Area	Period	Comment
Scotia	North Sea (IV)	February	IYFS Commitment
Scotia	West of Scotland (VIa)	March	Indices used by RFWG
Scotia	North Sea (IV)	August	SGFS, indices used by RFWG
Scotia	Rockall (VIb)	September	Indices used by RFWG
Clupea	Clyde (VIa)	November	New survey, results not yet available

In addition, a commercial vessel was chartered in August for a survey of recruiting sandeels at Shetland.

**U.S.A**

(V.Anthony and B.Rothschild)

The U.S.A. had no fisheries and no research activity on demersal fish in the ICES area in 1988. Activities in the Northwest Atlantic have been reported to NAFO.

# U.S.S.R

(G.I.Lukka)

In 1989, as previously, trawl, trawl-acoustic and ichthyoplankton surveys were conducted to assess abundance and biomass of the main commercial fish species, and the potential recruitment of cod, haddock, redfish and other fish species in the Barents Sea and adjacent waters.

Investigations were continued to determine the influence of hydrological conditions and food supply on fish distribution and behaviour. Population structure, dynamics of their biological characteristics and migration patterns of major commercial fishes were studied. The investigations of the food web between fish stocks were in progress.

The tables present the information collected during 1989

SAMPLING DATA FOR : COD		1989		U.S.S.R.
		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	1	31 836	2 985	617
	2	22 418	2 107	300
	3	58 282	5 422	3 082
	4	22 166	2 745	1 152
IIb	1	678	150	-
	2	6 265	852	638
	3	487	75	-
	4	6 502	1 593	866
IIa	1	49 791	4 648	1 968
	2	7 939	1 419	663
	3	1 100	346	100
	4	2 899	887	113
Total	1/4	210 362	23 339	9 499

SAMPLING DATA FOR : HADDOCK		1989		U.S.S.R.
		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	1	13 170	1 510	384
	2	5 340	674	600
	3	18 446	1 729	1 208
	4	4 209	813	639
IIb	2	381	25	-
	3	5	-	-
	4	274	77	77
IIa	1	6 149	820	353
	2	3 869	792	371
	3	885	75	-
	4	1 829	589	341
Total	1/4	54 557	7 104	3 973



SAMPLING DATA FOR : **REDFISH** **1989** **U.S.S.R.**

		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	1	791	125	-
	2	2 582	-	-
	3	4 048	200	-
	4	2 069	182	132
IIb	1	564	150	-
	2	8 289	675	600
	3	731	-	-
	4	3 707	200	200
IIa	1	4 266	976	551
	2	9 580	1 485	950
	3	1 866	75	-
	4	6 486	584	359
Total	1/4	44 979	4 652	2 792

SAMPLING DATA FOR : **GREENLAND HALIBUT** **1989** **U.S.S.R.**

		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	2	189	25	-
	3	50	-	-
	4	273	55	38
IIb	1	1 439	300	-
	2	1 322	149	24
	3	5 840	800	300
	4	6 350	1 192	602
IIa	1	760	350	300
	2	262	67	67
	3	901	100	-
	4	6 996	994	496
Total	1/4	24 382	4 032	1 827

SAMPLING DATA FOR : **SAITHE** **1989** **U.S.S.R.**

		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	1	4	-	-
	2	66	-	-
	3	51	25	-
IIa	1	554	75	20
	2	340	45	-
	3	7	-	-
	4	8	-	-
Total	1/4	1 030	145	20

SAMPLING DATA FOR : **WOLFFISHES** **1989** **U.S.S.R.**

		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	1	389	-	-
	2	286	4	3
	3	947	387	1
	4	291	180	180
IIb	2	238	22	22
	3	98	-	-
	4	574	278	277
IIa	1	4	-	-
	2	115	61	59
	3	28	23	-
	4	114	6	6
Total	1/4	3 084	961	548

SAMPLING DATA FOR : **LONG ROUGH DAB** **1989** **U.S.S.R.**

		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	1	72	-	-
	2	1 133	-	-
	3	4 734	326	-
	4	6 233	300	-
IIb	2	632	25	-
	3	1 389	150	-
	4	5 084	578	273
IIa	1	4	-	-
	2	446	150	150
	3	654	50	-
	4	1 822	253	200
Total	1/4	22 203	1 832	623

SAMPLING DATA FOR : **PLAICE** **1989** **U.S.S.R.**

		Nr of fish		
Area	Season	Measured	Feeding investigations	Aged
I	1	115	-	-
	2	23	-	-
	3	1 025	184	167
	4	11	79	-
Total	1/4	1 174	263	167

Grand Total	361 771	42 218	19 449
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