



THÜNEN

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Report of Activities

PELAGIC FISH COMMITTEE

by

R.S. Bailey

1987

BELGIUM

(R. De Clerck)

No market sampling of pelagic fish has been carried out in 1987. Research vessel surveys with bottom trawl on the juvenile herring and sprat were continued as given in the table below.

The research was limited to density and length measurements.

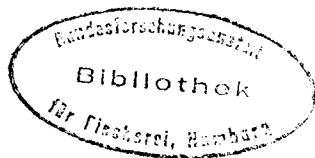
Research vessel catches.

Area	Season	Objectives
IV c Belgian coast	April and September	Recording densities of immature herring and sprat

FINLAND

(R. Parmanne & V. Sjöblom)

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



FRANCE

(A. Maucorps)

species : Herring

Area	season quarter	Type of fish	No of samples research		No of fish measured	No of fish aged	No of fish examined racially
			vessel	market			
IVa North western North Sea	1		3		3 060	258	
	3			2	415	141	
	4			1	126	60	
	4			2	438	130	
IVb Central North Sea	1		8		4 803	429	
	2			1	233	50	
	3			3	672	232	
	4			1	293	80	
IVc Southern + North Sea VIIId	1		2		825	163	
	2			3	646	195	
	3			1	148	52	
	4			5	1 226	403	

species : various

Area	Season	Type of fish	Research Vessel samples	Species	No. of fish measured
VIII a,b	Quarter 2-3	all	5	anchovy	1 150
			19	sardine	2 700
			5	sprat	700
			19	mackerel	2 900
			14	h.mackerel	4 250
			5	blue whit.	1 100
VIII a,b	Quarter 4	all	7	sardine	652
			31	mackerel	1 060
			101	h.mackerel	9 799
			77	blue whit.	16 591

Research Vessel Surveys

Area	Date	Objectifs
IV a,b,c	February 87	young Fish Survey
VIII a,b	17/03-04/04/87	Acoustic Survey

GERMAN DEMOCRATIC REPUBLIC

(L. Danke)

Blue Whiting

Sampling

Area	Season Quarter	No. of Samples		No. of fish	
		Research vessel	Commercial vessel	measured	aged
IIa	II		1	219	100
Vb ₁	II		1	202	100
IIa	III		2	200	200
Vb ₁	III		1	344	100
IVae	III	1		523	100
IIa	III	15		2420	886
Vb ₁	III	5		913	391

Research vessel survey

Area	Date	Objectives
Norwegian Sea Faroe Grounds North Sea Skagerrak	30.7.-8.9.1987	Acoustic survey, midwater trawling, hydrography

FEDERAL REPUBLIC OF GERMANY

(D. Sahrhage & H. Dornheim)

Species H E R R I N G

Sampling

Area	Season	Type of Fish	<u>No of Samples</u>		<u>No of fish</u>	
			Research Vessel	Commercial	measured	aged
Ila	II	adult	-	7	2169	135
VIa North	I	<u>ad.+juv.</u>	25	-	4056	392
VIa South	I	adult	3	-	818	98
VII b,c	I	adult	5	-	490	93
Celtic Sea + VIIj	I	<u>ad.+juv.</u>	6	-	996	98
We Channel	I	adult	6	-	635	187
North-western	I	<u>ad.+juv.</u>	14	-	8767	840
North Sea	III	<u>ad.+juv.</u>	29	-	5881	150
North-eastern	I	juvenile	10	-	648	98
North Sea	III	<u>ad.+juv.</u>	1	-	45	-
South Buchan	I	juvenile	13	-	2120	99
	III	<u>ad.+juv.</u>	4	-	784	148
Central North Sea	I	<u>ad.+juv.</u>	43	-	9041	174
	II	<u>ad.+juv.</u>	19	107	2703	-
	III	<u>ad.+juv.</u>	69	109	9190	326
	IV	<u>ad.+juv.</u>	1	41	1998	-
Southern North Sea	I	adult	1	-	95	-

Research Vessel Surveys

Area	Date	Objectives
North-western North Sea	02.02. - 02.03.87	ICES young fish survey
North-eastern North Sea		
South Buchan		
Central North Sea		
VIa North		
Central North Sea	23.02. - 05.03.87	Groundfish survey
Southern North Sea		

Area	Date	Objectives
Via North Via South VII b,c Celtic Sea + VIIj West Channel	05.03. - 24.03.87	Mackerel and other pelagic fish survey
Central North Sea	12.05. - 16.05.87	Young fish and shrimp survey
Central North Sea	03.06.87	Young fish and shrimp survey
North-western North Sea North-eastern North Sea South Buchan Central North Sea	29.06. - 07.08.87	Groundfish survey
North-western North Sea Central North Sea	31.08. - 22.09.87	Gear technology cruise
Central North Sea	09.09. - 10.09.87	Young fish and shrimp survey
Central North Sea	30.09. - 01.10.87	Young fish and shrimp survey
Central North Sea	05.11. - 16.11.87	Groundfish survey
Central North Sea	2. to 4. quarter	Shrimps by catch investigations

Species S P R A T

Sampling

Area	Season	<u>No of samples</u>		<u>no of fish</u>
		Research	Commercial	measured
N-North Sea IVa	I	3	-	58
Central North Sea IVb	I	21	-	1274
	II	17	103	6517
	III	31	91	1612
	IV	-	34	262
NW of Scotland VIa	I	2	-	12
English Channel VII d,e	I	2	-	139
S of Ireland VII g-k	I	1	-	8

Research Vessel Surveys

Area	Date	Objectives
N-North Sea IVa Central North Sea IVb NW of Scotland	02.02. - 02.03.87	ICES young fish survey
Central North Sea IVb Southern North Sea IVc	23.02. - 05.03.87	Groundfish survey
NW of Scotland VIa W of Ireland VII b,c English Channel VII d,e S of Ireland VII g-k Bay of Biscay VIII	05.03. - 24.03.87	Mackerel and other pelagic fish survey
Central North Sea IVb	12.05. - 16.05.87	Young fish and shrimp survey
Central North Sea IVb	03.06.87	Young fish and shrimp survey
N-North Sea IVa Central North Sea IVb	29.06. - 07.08.87	Groundfish survey

Area	Date	Objectives
Central North Sea IVb	09.09. - 10.09.87	Young fish and shrimp survey
Central North Sea IVb	30.09. - 01.10.87	Young fish and shrimp survey
Central North Sea IVb	05.11. - 16.11.87	Groundfish survey
Central North Sea IVb	2. to 4. quarter	Shrimps by catch investigations

Species MACKEREL

Sampling

Area	Season	Type of fish	No of samples		No of fish	
			Research	Commercial	measured	aged
N-North Sea IVa	I	juv.+ad.	7	-	252	25
	III	adult	7	-	663	-
Central North Sea IVb	I	juv.+ad.	9	-	12	-
	II	juv.+ad.	3	-	301	-
	III	juv.+ad.	19	-	2582	-
NW of Scotland VIa	I	juv.+ad.	22	1.	2120	289
W of Ireland VII b,c	I	adult	6	-	833	100
English Channel VII d,e	I	juv.+ad.	5	-	1308	100
S of Ireland VII g-k	I	juv.+ad.	28	-	4571	388
Bay of Biscay VIII	I	juv.+ad.	12	-	927	198

Research Vessel Surveys

Area	Date	Objectives
N-North Sea IVa	02.02. - 02.03.87	ICES young fish survey
Central North Sea IVb		
NW of Scotland VIa		
NW of Scotland VIa	05.03. - 24.03.87	Mackerel and other pelagic fish survey
W of Ireland VII b,c		
English Channel VII d,e		
S of Ireland VII g-k		
Bay of Biscay VIII		
N-North Sea IVa	29.06. - 07.08.87	Groundfish survey
Central North Sea IVb		

Species BLUE WHITING

Sampling

Area	Season	<u>No of samples</u> Research vessel	<u>No of fish</u>
NW of Scotland VIa	I	1	8
W of Ireland VII b,c	I	1	94
English Channel VII d,e	I	2	161
S of Ireland VII g-k	I	16	1478
Bay of Biscay VIII	I	5	444

Research Vessel Surveys

Area	Date	Objectives
N-North Sea IVa	02.02. - 02.03.87	ICES young fish survey
Central North Sea IVb		
NW of Scotland VIa		
NW of Scotland VIa	05.03. - 24.03.87	Mackerel and other pelagic
W of Ireland VII b,c		fish survey
English Channel VII d,e		
S of Ireland VII g-k		
Bay of Biscay VIII		

Species HORSE MACKEREL

Sampling

Area	Season	<u>No of samples</u> Research vessel	<u>No of fish</u> measured
Central North Sea IVb	III	16	2992
NW of Scotland VIa	I	11	60
W of Ireland VII b,c	I	5	107
English Channel VII d,e	I	5	297
S of Ireland VII g-k	I	27	4230
Bay of Biscay VIII	I	16	3014

Research Vessel Surveys

Area	Date	Objectives
N-North Sea IVa Central North Sea IVb NW of Scotland VIa	02.02. - 02.03.87	ICES young fish survey
NW of Scotland VIa W Ireland VII b,c English Channel VII d,e S of Ireland VII g-k Bay of Biscay VIII	05.03. - 24.03.87	Mackerel and other pelagic fish survey
N-North Sea IVa Central North Sea IVb	29.06. - 07.08.87	Groundfish survey

IRELAND

(J. Molloy)

Sampling

Species: Herring

Area	Season	Type of fish	No. of samples (market)	No. of fish (measured)	No. of fish aged	No. of fish examined racially
Via South	I,II,III, IV,V,VI, VII,VIII, X,XI,XII	Adult	41	9 617	1 934	1 934
VIIb,c	III,V,VII, VIII,IX,X, XI	Adult	17	3 663	697	697
VIIj+ Celtic Sea	VIII,IX,X, XI,XII	Adult	90	11 997	3 219	3 219
VIIa Irish Sea	VIII,IX	Adult	12	1 824	547	547

Species: Mackerel

Via South North West	I,II,IV, V,VI,VII, X,XI	Adult	52	4 073	1 666	-
VIIb,c West	I,II,IV, VII,IX	Adult	18	1 752	808	-
VIIj+ Celtic Sea	X,XI	Adult	3	131	73	-

Species: Horse Mackerel

Div 6+7	VII,VIII, IX,X,XI	Adult	16	886	229	
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Research Vessel Surveys

Area	Date	Objectives
VIIa	February	Young Herring Survey
Via	May	Mackerel egg survey for the Fishing Industry
Via+VII b,c,	October	Young mackerel survey
Via+ VIIb,c	Oct-Nov	Young herring survey

NETHERLANDS

(A. Corten)

Sampling data for Herring.

Area	Quarter of year	Type of fish	No. of Samples		No. of fish		
			research vessel	market	measured	aged	examined racially
NW North Sea	2	adult	-	15	2249	375	-
" " "	3	"	-	16	2273	400	-
" " "	4	"	-	2	302	50	-
South Buchan	2	"	-	2	333	50	-
" " "	3	"	-	5	581	125	-
Central North Sea	3	"	-	13	2136	325	-
" " "	4	"	-	4	735	100	-
Southern North Sea	1	"	-	8	1627	200	-
" " "	4	"	-	19	3429	475	-
Via North	2	"	-	5	666	125	-
" " "	3	"	-	11	1230	275	-
" " "	4	"	-	2	320	50	-
Via South + VII b,c	3	"	-	3	313	75	-
" " + " " "	4	"	-	8	1013	200	-
Total				113	17207	2825	-

Sampling data for Mackerel.

Area	Quarter of year	Type of fish	No. of Samples		No. of Fish		
			research vessel	market	measured	aged	examined racially
IVa Northern North Sea	3	adult	-	3	227	75	-
" " " "	4	"	-	9	575	225	-
IVb Central North Sea	3	"	-	2	160	50	-
IVc Southern North Sea	2	"	-	4	355	100	-
" " " "	3	"	-	2	257	50	-
" " " "	4	"	-	2	207	50	-
Via NW Ireland	1	"	-	4	366	100	-
" " " "	2	"	-	6	355	150	-
" " " "	3	"	-	1	81	25	-
" " " "	4	"	-	7	487	175	-
VII South of Ireland	1	"	-	11	658	275	-
" " " "	2	"	-	5	318	125	-
" " " "	3	"	-	1	108	25	-
" " " "	4	"	-	4	729	100	-
East Coast USA	2	"	-	4	214	100	-
Total				65	5097	1625	

Sampling data for Horsemackerel.

Area	Quarter of fish	Type of fish	No. of samples		No. of Fish		
			Research vessel	Market	measured	aged	examined racially
IVa Northern North Sea	4	adult	-	2	161	50	-
IVb Central North Sea	3	"	-	2	188	50	-
IVc Southern North Sea	2	"	-	1	140	25	-
" " " "	3	"	-	3	455	75	-
" " " "	4	"	-	1	130	25	-
Via NW Ireland	3	"	-	4	479	100	-
" " " "	4	"	-	7	645	175	-
VII South of Ireland	1	"	-	8	887	200	-
" " " "	2	"	-	5	714	125	-
" " " "	3	"	-	11	1679	275	-
" " " "	4	"	-	8	1116	200	-
Total				52	6594	1300	-

Herring/Research vessel surveys

Area	Dates	Objectives
IVa,b,c North Sea	2 feb - 28 feb	ICES Young Fish Survey
IVa Northern North Sea	7 sep - 8 sep	ICES Herring larval survey
IVb Central North Sea	1 sep - 29 oct	ICES Herring larval survey
IVc Southern North Sea	8 dec - 18 dec	ICES Herring larval survey
IVc Dutch Wadden Sea	2 mar - 29 apr	Herring larval survey

Mackerel/Research vessel surveys

Area	Dates	Objectives
VIIId-k	9 nov - 2 dec	ICES 0-group survey

NORWAY

(O. Dahl & I. Røttingen)

Herring (Clupea Harengus)
Sampling

Area	Season	Type of fish	Research vessel	Market	No. of fish measured	No. of fish aged	No. of fish exam. racially
Skagerrak	I	Mixed	1	-	70	70	70
IIla	II	Immat	3	-	300	300	300
	III	Immat	7	-	669	669	300
	IV	Immat	3	-	300	300	300
Northern North Sea	I	Adult	1	34	2994	745	745
	II	Adult	6	17	1928	857	670
IVa	III	Mixed	3	17	1327	332	293
	IV	Mixed	6	80	6371	683	300
Norwegian coast IVa	I	Mixed	5	64	5592	783	722
	II	Adult	-	67	5621	826	728
	III	Mixed	3	161	11656	1088	988
	IV	Mixed	1	311	21632	608	562
Norwegian fjords IVa	IV	Immat	11	-	1100	1100	-
Central North Sea	I	Immat	7	-	542	542	331
	II	Immat	9	-	900	900	400
IVb	II	Mixed	1	2	206	56	-
	III	Mixed	12	5	1615	1200	700
	IV	Mixed	6	90	7116	922	655
NW North Sea	III	Adult	-	18	1453	400	400
VIa	IV	Adult	-	2	151	-	-

Research vessel survey

Area	Season	Objectives
North Sea	Jan/Feb	Int. Young Fish survey. herring
The Norw. coast from Stavanger to Varangerfjord	Oct/Nov/Dec	Fish survey, 0-group sprat/herring
North Sea/Skagerrak	Nov/Dec	Herring acoustic survey

Tagging

Area	Season	Type of Tag	No tagged	Type of fish
North Sea	Mar	Int. steel	15992	Herring

Sprat (*Sprattus sprattus*)
Sampling

Area	Season	Type of fish	No. of samples Research vessel	Market	No. of fish measured	No. of fish aged
Skagerrak IIIIa	IV	Mixed	1	-	100	100
Central	II	Mixed	3	-	300	300
North Sea	III	Mixed	2	-	200	200
IVb	IV	Mixed	3	-	300	300
Norwegian fjords IVa	IV	Mixed	39	-	4000	-

Research vessel surveys

Area	Season	Objectives
North Sea	Jan/Feb	Int. Young Fish Survey, sprat
The Norw. coast from Stavanger to Varangerfjord	Oct/Nov/Dec	Fish survey, 0-group, sprat/herring

Mackerel (*Scomber scombrus*)
Sampling

Area	Season	Type of fish	No. of samples Research vessel	Market	No. of fish measured	No. of fish aged
Norwegian Sea, IIa	III	Mixed	-	1	100	100
Skagerrak IIIa	II	Mixed	6	1	200	200
	III	Mixed	3	-	300	300
Northern North Sea IVa	II	Mixed	16	1	900	900
	III	Mixed	12	18	2700	1900
	IV	Mixed	-	10	1000	700
Central North Sea IVb	II	Mixed	6	-	600	600
	III	Mixed	3	-	200	200

Research vessel survey

Area	Season	Objectives
North Sea	Jun-Jul	Fish survey
North Sea/Skagerrak	Nov-Dec	Fish survey, 1-group mackerel

Tagging

Area	Season	Type of tag	No. tagged	Type of fish
North Sea - Skagerrak, IVa, IIIa	Aug	Int. steel	20 890	Mackerel

Herring (*Clupea harengus*) North of 62°N
Sampling

Area	Season	Type of fish	No. of samples Research vessels	Market	No. of fish measured	No. of fish aged	No. of fish exam. rac.
I Barents Sea	I	Mixed	3		23		
IIa	I	Mixed	61	22	7047	3121	
Norw. Sea and Coastal areas	II	"	23	1	2402	1140	
	III	"	12		982	307	
	IV	"	39	27	4789	2604	
IIb Svalbard	I	Mixed	1		69	20	
Total			139	50	15312	7192	

Research vessel surveys

Area	Date	Objectives
Norwegian coast IIa	February-March	Experimental fishing, acoustic survey of spawning stock
Norwegian coast IIa	April-May	Tagging
Norwegian Sea/ coastal waters IIa	April-May	Herring larvae
Norwegian Sea IIa	June-July	Acoustic survey
Norwegian Sea IIa Barents Sea I	August	O-group distribution
Norwegian coast IIa	September	Acoustic survey
Norwegian coast I/IIa	November-December	O-group survey

Tagging

Area	Season	Type of tags	No. tagg.	Type of fish	Recoveries
Norw. coast IIa	II	internal	44000	adult	

Capelin (Mallotus villosus)

Sampling

Area	Season	Type of fish	No. of samples Research vessels	Market	No. of fish measured	No. of fish aged	No. of fish exam.rac.
Barents Sea							
I - IIa - IIb	I	Mixed	21		1563	599	
	II	"	5		210	136	
	III	"	64		4401	1524	
	IV	"	65		4044	429	
Jan Mayen							
Va	I	Spawn.		13	1300	1146	
XIVa	III	Adult	17	12	2090	1455	
Total			172	25	13608	5289	

Research vessel surveys

Area	Date	Objectives
Barents Sea I,II	5/1 - 26/1	Acoust.surv.prespawners
Barents Sea I,II	20/6 - 10/7	Larval survey
Barents Sea I,II	4/9 - 16/10	Acoust.surv.total stock
Norwegian Sea II,XIVa	27/7 - 17/8	Acoust.surv.matures

Blue whiting (Micromesistius potassou)

Sampling

Area	Season	Type of fish	No. of samples Research vessels	Market	No. of fish measured	No. of fish aged	No. of fish exam.rac.
Barents Sea	I	Mixed	2		254	50	
Norwegian Sea	I	"	18		1422	211	
	II	"	24		1974	414	
IIa	III	"	28		1482	621	
	IV	"	25		582	108	
Northern Norwegian Sea, IIb	III	"	4		142	0	
	IV	"	3		84	38	
North Sea	II	"	6	2	812	368	
IVa	III	"	4	3	378	215	
IVb	IV	"	2	1	322	50	
West of The British Isles, Faroes	I	"	7		700	694	
	II	"	10	3	1250	988	
	III	"					
Vb, VIa, VIb, VIIbc, VIIghik.	IV	"					
Total			133	9	9402	3757	

Research vessel surveys

Area	Date	Objectives
a) West of The British Isles, Faroes. Vb, VIa, VIb, VIIbc, Vghik.	16 March-12 April	Acoustic assessment and structure of the blue whiting stock.
b) Northern North Sea, Norwegian Sea IVa, IIa.	9 June - 23 July	Blue whiting and herring. Acoustic observations and structure of stocks.

Great silver smelt (Argentina silus)

Sampling

Area	Season	Type of fish	No. of samples Research vessels	Market	No. of fish measured	No. of fish aged	No. of fish exam.rac.
Norw. coast	I	Mixed	20	3	1961	875	
IIa	II	"	25	6	2266	923	
	III	"	12		611	89	
	IV	"	20		636	0	
North Sea	II	"	5	1	212	86	
Iva	III	"	1		85	0	
	IV	"	3		232	0	
West of The British Isles, VIIbc	I	"	1		34	0	
Total			87	10	6124	1973	

Research vessel surveys

Area	Date	Objectives
Norwegian Sea IIa	20 March -12 April	Greater silver smelt and redfish. Acoustic observations and structure of stocks.

Polar cod (Boreogadus saida)

Sampling

Area	Season	Type of fish	No. of samples Research vessels	Market	No. of fish measured	No. of fish aged	No. of fish exam. rac.
Barents Sea I, II	I		6		600	144	
	II		0		0	0	
	III		93		7751	1420	
	IV		96		6148	1464	
Total			195		14499	3028	

Research vessel surveys

Area	Date	Objectives
Barents Sea I, II	5/1 - 26/1	Acoustic survey
Barents Sea I, II	6/9 - 18/11	Acoustic surv. tot. stock

PORTUGAL

(C. Afonso Dias)

Sampling on pilchard (Sardina pilchardus, Walb.)

Region	Quarter	Type of fishes	N. Samples		N. fishes measured		N. fishes aged	N. fishes examined racially
			R. vessel	Market	R. vessel	Market		
IX a	1 st	-AII		99		8.152	511	
	2 nd			155		13.755	340	
	3 rd		6	187	1.836	15.509	556	
	4 th		26	159	5.311	14.116	1211	
	TOTAL		32	600	7.147	51.532	2.618	

Scomber scombrus (L.)

SAMPLING

Area	Season	Type of fish	Nr. of samples		Nr. of fish measured	Nr. of fish aged (otoliths)	Nr. of fish examined racially
			research vessel	market			
IX a	1st quarter	all	-	149	10 527	70	-
	2nd quarter		-	180	12 606	187	-
	3rd quarter		-	161	11 545	168	-
	4th quarter		-	98	7 124	123	-
	TOTAL		-	588	41 802	548	-

Scomber japonicus (Houttuyn)

SAMPLING

Area	Season	Type of fish	Nr. of samples		Nr. of fish measured	Nr. of fish aged (otoliths)	Nr. of fish examined racially
			research vessel	market			
IX a	1st quarter	all	-	35	1 593	136	-
	2nd quarter		-	53	2 989	226	-
	3rd quarter		-	33	2 291	169	-
	4th quarter		5	28	1 884	43	-
	TOTAL		5	149	8 757	574	-

Sampling on blue whiting Micromesistius poutassou (Risso)

Region	Quarter	Type of fishes	N. Samples		N. fishes measured		N. fishes aged	N. fishes examined racially
			R. vessel	Market	R. vessel	Market		
IX a	1 st	All	-	82	-	6786		
	2 nd		-	88	-	7324		
	3 rd		-	50	-	4172		
	4 th		55	29	3411	2581		
	TOTAL		55	248	3411	20805		

SPECIES: trachurus trachurus (L.).

SAMPLING

Area	Season	Type of fish	Nr. of samples		Nr. of fish Measured	Nr. of fish aged (Otoliths)
			R/V	Market		
IXa	1st quarter	All	22	257	28 839	605
	2nd "			277	29 778	342
	3rd "			214	17 262	212
	4th "		37	106	17 262	1 325
	TOTAL		59	854	93 141	2 484

RESEARCH VESSEL SURVEYS

Area	Date	Objective
Div IXa (partial)	24-2-87 a 2-3-87	Collection of fecundity data and prospection on spawning grounds
Div IXa	3-24 Oct	Estimation of abundance and biomass indices by stratified bottom trawl survey
Div IXa (south)	30-11-6-12 Dez	Collection of further biological data

SPAIN

(C. Porteiro & M.A. Rodriguez)

Espèce: Sardina pilchardus

Région	Trimestre	Type de poisson	No. d'échantillons Bateau	Marché	No. de poissons Mesuré	agé
VIIIc	1	Adultes	15	16	4,6201	600
	2	et	5	12	821	-
	3	imma-	-	33	1,645	-
	4	tures	-	66	4,014	-
IXa	1	Adultes	2	31	3,025	226
	2	et	-	39	3,302	160
	3	imma-	-	34	2,992	100
	4	tures	-	28	2,348	255
27°N-26°N	3	Adultes	-	79	13,957	227
	4	et immat.	-	34	5,952	-
22°N-26°N	3	Adultes	-	21	2,796	125
	4	et immat.	-	-	-	-

Espèce: Engraulis encrasicolus

VIIIh, c	1	Adultes	-	2	215	475
	2	et	8	26	994	-
	3	imma-	-	-	-	-
	4	tures	-	4	510	200

Espèce: Trachurus trachurus

VIIIb	1	Adultes	-	-	3	209
	2	et	-	-	4	64
	3	imma-	-	-	5	81
	4	tures	-	-	11	640
VIIIc	1	Adultes	43	43	6,806	-
	2	et	45	31	5,221	331
	3	imma-	-	32	2,224	-
	4	tures	-	32	1,937	-
IXa	1	Adultes	21	2	1,368	-
	2	et	-	15	1,166	-
	3	imma-	-	13	1,122	-
	4	tures	-	9	639	-

Espèce: Scomber scombrus

VIIIc	1	Adultes	39	11	965	-
	2	et	-	16	1,444	-
	3	imma-	-	3	65	-
	4	tures	-	3	130	-
	1	Adultes	19	3	250	-
	2	et	-	1	63	-
	3	imma-	-	-	-	-
	4	tures	-	1	17	-

Espèce: Micromesistius poutassou

Région	Trimestre	Type de poisson	No. d'échantillons		No. de poissons	
			Bateau	Marché	Mesuré	agé
VIIIc	1	Adultes	39	20	4,395	-
	2	et	-	16	1,168	-
	3	imma-	-	14	1,118	-
	4	tures	-	10	723	-

IXa	1	Adultes	21	11	3,397	501
	2	et	-	16	1,795	-
	3	imma-	-	17	2,188	347
	4	tures	-	16	1,835	154

Campagnes de navires de recherche

Région	Date	Objectif
VIIIc	22 fév.-	Estimation acoustique de l'abondance et les compositions par groupe d'âge et de taille de stocks de <u>Sardina pilchardus</u> .
IXa	13 mars	

SWEDEN

(O. Hagström)

SAMPLING

HERRING

Area	Season	Type of fish	No. of Samples		No. of Fish		No. of Fish
			Research	Market	Measured	Aged	examined racially
Kattegat	I, II, III		10	44	14 309	1 923	1 923
	IV, V, VI		-	46	10 117	1 231	938
	VII, VIII, IX		-	36	10 277	616	616
	X, XI, XII		-	39	10 181	1 248	787
Skagerrak	I, II, III		10	3	4 107	1 257	1 005
	IV, V, VI		-	16	3 151	718	663
	VII, VIII, IX		-	9	2 982	542	542
	X, XI, XII		-	11	2 542	638	493
Total			20	204	57 666	8 173	6 965

RESEARCH VESSEL SURVEYS

Area	Season	Objectives
Kattegat, Skagerrak, Baltic	II, III	Investigation on young fish; herring larvae and stock separation

UNITED KINGDOM
ENGLAND AND WALES

(P.O. Johnson)

Sampling: Herring

ICES Div (Area)	Quar- ter	Type	No. of Samples		No. measured	No. sampled
			R.V.	Comm.		
IVa (N. North Sea)	3	imm./mat.	1	-	170	82
IVb(E of 3°E)	1	juv./mat.	21	-	4,145	595
IVb(W of 3°E)	1	juv.	-	1	340	-
(West Central	1	imm.	-	1	182	93
North Sea)	1	juv./imm.	24	-	3,362	716
	2	imm./mat.	2	-	543	-
	3	mat./spent	-	3	316	316
	3	imm/mat.	11	-	4,482	1,368
IVc	1	juv./imm.	14	-	2,076	323
(South North	1	mat.spent	2	-	433	199
Sea)	4	juv./spent	12	-	1,025	246
(Wash-Thames	2	spent/mat.	-	1	85	43
Coastal)	3	juv.	13	-	1,923	-
	4	mat.	-	1	204	100
(Thames Stock)	1	mat.	-	2	326	210
	4	mat.	-	3	559	375
VIId	1	mat.	-	1	173	122
(East Channel)	4	mat.	-	1	176	122

Sampling: Sprat

ICES Div (Area)	Quar- ter	Type	<u>No. of Samples</u>		No. measured	No. sampled
			R.V.	Comm.		
IVb(E of 3 ⁰ E) (East Central North Sea)	1	imm./mat.	26	-	1,503	431
IVb(W of 3 ⁰ E) (West Central North Sea)	1	imm./mat.	16	-	879	247
	1	mat.	-	1	175	-
IVc (South North Sea)	1	imm./mat.	14	-	1,764	368
	1	mat.	1	-	202	88
	4	mat.	5	-	919	180
(Wash-Thames Coastal)	3	imm.	13	-	1,697	-
VIId (East Channel)	1	mat.	-	1	262	104
VIIe (West Channel)	1	mat.	-	1	116	75
	4	mat.	-	4	207	117

Sampling: Mackerel

ICES Div (Area)	Quar- ter	Type	<u>No. of Samples</u>		No. measured	No. sampled
			R.V.	Comm.		
VIId, e, f	1	juv./mat. spent	3	14	2,195	517
	2	maturing	-	1	338	333
	3	mat./spent	-	2	258	165
	4	juv./spent	3	2	687	363
VIIh	1	juv./mat. spent	12	-	1,200	231
	4	juv./spent	12	-	1,200	100
VIIj	1	juv./mat. spent	23	-	2,300	282
	4	juv./spent	23	-	2,300	223
VIIg	1	juv./spent	6	-	22	-
VIII	1	juv./mat.	17	-	1,700	253

Sampling: Pilchard

ICES Div (Area)	Quar- ter	Type	No. of Samples		No. measured	No. sampled
			R.V.	Comm.		
VIIe	1	mixed	3	2	500	158
	4	mixed	3	1	400	121

Sampling: Horse Mackerel

VIIe	1	not exam.	3	2	500	158
	4	"	3	2	400	121
VIIg	1	"	3	-	300	-
	4	"	3	-	300	-
VII	1	"	6	-	12	-
VIIh	1	"	12	-	1,200	-
	4	"	12	-	1,200	-
VIIj	1	"	23	-	2,300	-
	4	"	23	-	2,300	-
VIII	1	"	17	-	1,700	-

Herring/Sprat

Research Vessel Surveys

Area	Dates	Objectives	Vessel
IVc/VIIId (S. North Sea/ E. Channel)	6-16 Jan	Herring larval survey	Cirolana
IVb/IVc (Central and S. North Sea)	23 Jan - 20 Feb	International Young Fish Survey (including juvenile herring/sprat abundance and distribution)	Cirolana
IVc (Wash-Thames coastal)	17-26 Jul	Inshore 0-group herring survey	Dawn- Hunter (charter)
IVb (Central N. Sea)	25 Aug - 7 Sep	Acoustic Survey for "Banks" spawning herring	Clione
IVb (Central N. Sea)	22 Sep - 12 Oct	Herring larval survey	Cirolana

Mackerel

VIIe (W. Channel)	1-6 Feb	Square mesh selectivity Experiments	Silver Harvester (charter)
VIIg-j (Celtic Sea- SW Approaches)	3-26 March	Juvenile and adult mackerel distribution. (Part of multi-species survey)	Cirolana
VIIg-j (Celtic Sea- SW Approaches)	25 Nov - 20 Dec	Juvenile mackerel distribution. (Part of multi-species survey)	Cirolana

Additional Research Activities

Fecundity Investigations
Otolith Li Measurements

UNITED KINGDOM
SCOTLAND

(R.S. Bailey)

HERRING

Sampling

Area	Season	Type of Fish	No of Samples		No of Fish	
			Research Vessel	Market	Measured	Aged
South Buchan	Jan-Mar	Juv	6	0	950	21
		Mixed	7	0	2325	166
	July-Sept	Adult	1	10	1887	409
		Mixed	11	0	2367	335
Central North Sea	Jan-Mar	Juv	5	0	660	7
		Mixed	17	0	4202	345
	July-Sept	Adult	5	1	1007	82
		Mixed	15	0	3546	254
North Western North Sea	Jan-Mar	Juv	13	0	2293	94
		Adult	3	1	1033	293
		Mixed	25	0	6492	682
	April-June	Adult	9	8	3704	1045
	July-Sept	Adult	28	92	17450	3452
		Mixed	24	0	9087	2911
	Oct-Dec	Adult	2	6	1351	605
North Eastern North Sea	Jan-Mar	Juv	2	0	4	0
		Mixed	1	0	157	38
	April-June	Adult	8	0	1754	460
	July-Sept	Adult	4	0	53	0
Vla North	Jan-Mar	Adult	15	2	2525	481
		Mixed	22	0	4539	821
	July-Sept	Adult	0	13	1987	400
	Oct-Dec	Juv	1	0	1	0
		Adult	32	30	10864	1942
		Mixed	8	0	2062	419
Vla South	Jan-Mar	Adult	4	0	712	108
		Mixed	2	0	495	94
	Oct-Dec	Adult	8	0	465	110

HERRING (cont)

Area	Season	Type of Fish	No of Samples		No of Fish	
			Research Vessel	Market	Measured	Aged
Via Clyde	Jan-Mar	Adult	4	0	1084	403
		Mixed	4	0	935	391
	April-June	Adult	0	21	2949	407
	July-Sept	Adult	0	13	1936	133
	Oct-Dec	Adult	0	15	2223	292
VIIb	Oct-Dec	Adult	5	0	644	113

SPRAT

Sampling

Area	Quarter	No of Samples		No of Fish	
		Research	Commercial	Measured	Aged
North Western North Sea	1	24		3464	393
	2	1		3	-
	3	9		487	64
	4		1	245	43
North Eastern North Sea	1	1		1	1
Central North Sea	1	11		1268	90
	3	5		163	42
South Buchan	1	12		2163	136
	2		7	1823	44
	3	3		79	24
Via North	1	26		2105	227
	4	14	3	2129	247
Via South	1	3		24	-
	4	4		289	38
Clyde	1	3		624	93
	4		1	129	43
VIIIb	4	1		3	-

Research Vessel Surveys

Area	Date	Objectives
Northern and Central North Sea	January	Sprat trawling survey ¹
Northern and Central North Sea	February	Sprat trawling survey ¹

¹ In accordance with C. Res. 1981/2:22.

M POUTASSOU

Sampling

Area	Season	Type of Fish	No of Samples		No of Fish		
			Research Vessel	Market	Measured	Aged	Examined racially
Via	Jan-Mar	Mature	10	-	12	0	0

MACKEREL

Sampling

Area	Season	Type of Fish	No of Samples		No of Fish	
			Research Vessel	Market	Measured	Aged
IVa	Jan-Mar	Imm	4		57	24
Northern North Sea	April-June	Adult	3		186	121
	July-Sept	Imm/adult	37	1	625	345
	Oct-Dec	Imm/adult	3	13	1289	315
IVb	Jan-Mar	Imm	2		3	3
Central North Sea	July-Sept	Imm/adult	20	2	542	219
VIa	Jan-Mar	Imm/adult	18	10	3662	969
West of Scotland	April-June	Imm/adult		3	245	94
	July-Sept	Imm/adult	5	14	1706	389
	Oct-Dec	Imm/adult	40	59	5804	1733
Vb	July-Sept	Adult		1	74	59
Faroes	Oct-Dec	Imm/adult		2	126	113
VIIa	Oct-Dec	Adult		1	77	0
Irish Sea						
VIIb	Oct-Dec	Imm/adult	5		169	84
West of Ireland						

Research Vessel Surveys

Area	Date	Objectives
Northern and Central North Sea	April/May	Mackerel and herring acoustic trawling survey
West of Scotland	November	Mackerel and herring acoustic trawling survey
West of UK	December	Mackerel recruit survey

Other Research Activities

Investigation of mackerel otolith morphometrics with a view to stock discrimination (ICES CM 1986/H:7)

Mackerel fecundity investigations.

U.S.S.R.

(S.A. Studenetsky)

SAMPLING

Area : Quarter : Month : Type of fish: No.of age :No.of fish												
:		:	:	:	: samples measured : aged							
1	:	2	:	3	:	4	:	5	:	6	:	7

Blue whiting

I	III	Sep	Feeding	-		23	-
Grand total				-		23	-
IIa	I	Jan	Prespawning	2		165	100
		Feb	Spawning	-		104	-
Total				2		269	100
	II	May	Feeding	4		18026	300
		Jun	Feeding	5		39043	500
Total				9		57069	800
	III	Jul	Feeding	11		36006	700
		Aug	Feeding	11		22657	769
		Sep	Feeding	12		5628	200
Total				34		64291	1669
	IV	Oct	Feeding	-		68	-
		Nov	Feeding	-		7	-
Total				-		75	-
Grand total				45		121704	2569
IIb	III	Sep	Feeding	-		97	-
	IV	Oct	Feeding	-		17	-
Grand total				-		114	-
IVa	I	Feb	Spawning	-		940	-
		Mar	Postspawning	-		77	-
Grand total				-		1017	-
Vb _I	I	Jan	Prespawning	4		12400	200
		Feb	Spawning	1		862	-
		Mar	Postspawning	-		611	-
Total				5		13873	200
	II	Apr	Postspawning	2		2343	200
		May	Feeding	1		2805	100
		Jun	Feeding	-		628	-
Total				3		5776	300

1	2	3	4	5	6	7
Vb ₁	III	Jul	Feeding	1	698	100
		Aug	Feeding	-	749	-
	Total			1	1447	100
Grand total				9	21096	600
Vb ₂	II	Apr	Postspawning	-	1365	-
		May	Feeding	-	1630	-
		Jun	Feeding	1	-	100
Grand total				1	2995	100
Vla	I	Feb	Spawning	2	-	200
		Mar	Postspawning	2	1129	200
	Total			4	1129	400
	II	Apr	Postspawning	4	2436	300
Grand total				8	3565	700
Vlb	II	Apr	Postspawning	1	-	100
Grand total				1	-	100
VIIb,c	I	Jan	Prespawning	1	916	100
		Mar	Postspawning	3	2965	200
	Total			4	3881	300
	II	Apr	Postspawning	1	2161	100
Grand total				5	6042	400
VIIg-k	I	Jan	Prespawning	-	1119	-
		Feb	Spawning	2	2254	200
		Mar	Postspawning	6	14199	500
Grand total				8	17572	700
<u>Capelin</u>						
I	I	Jan	Prespawning	1	644	50
		Feb	Prespawning	1	1076	100
		Mar	Prespawning	4	11007	350
	Total			6	12727	500
	II	Apr	Spawning	-	2451	-
		May	Postspawning	-	27	-
	Total			-	2478	-
	III	Jul	Feeding	-	220	-
		Aug	Feeding	1	369	20
		Sep	Feeding	7	1430	126
	Total			8	2019	146
	IV	Oct	Feeding	-	1978	-
		Nov	Feeding	-	372	-
	Total			-	2350	-
Grand total				14	19574	646

1	2	3	4	5	6	7
	:	:	:	:	:	:
IIa	III	Sep	Feeding	-	32	-
	IV	Oct	Feeding	-	322	-
Grand total				-	354	-
IIb	I	Jan	Prespawning	1	-	100
	II	Apr	Postspawning	1	100	100
	III	Sep	Feeding	2	1876	200
	IV	Oct	Feeding	1	67	100
		Nov	Feeding	1	-	100
Total				2	67	200
Grand total				6	2043	600
<u>Polar cod</u>						
I	I	Jan	Prespawning	17	16083	900
		Feb	Spawning	-	49	-
		Mar	Postspawning	1	732	100
Total				18	16864	1000
	II	Apr	Feeding	2	2833	200
		May	Feeding	1	667	100
		Jun	Feeding	-	379	-
Total				3	3879	300
	III	Jul	Feeding	3	5396	300
		Aug	Feeding	1	-	100
		Sep	Feeding	8	10445	630
Total				12	15841	1030
	IV	Oct	Prespawning	7	6772	421
		Nov	Prespawning	-	281	-
Total				7	7053	421
Grand total				40	43637	2751
IIb	III	Jul	Feeding	2	100	200
		Sep	Feeding	5	6142	500
Total				7	6242	700
	IV	Oct	Prespawning	1	568	100
Grand total				8	6810	800
<u>Mackerel</u>						
IIa	II	Jun	Feeding	-	1621	-
	III	Jul	Feeding	7	27365	700
		Aug	Feeding	10	15229	750
Total				17	42594	1450
Grand total				17	44215	1450

1	:	2	:	3	:	4	:	5	:	6	:	7
Vb _I		II		Jun		Feeding		1		3578		100
		III		Jul		Feeding		1		1268		100
				Aug		Feeding		1		-		100
		Total						2		1268		200
Grand total								3		4846		300
<u>Atlanto-Scandian herring</u>												
I		I		Jan		Feeding		3		232		47
				Mar		Feeding		2		919		-
		Total						5		1151		47
		II		Apr		Feeding		-		694		-
Grand total								5		1845		47
IIa		I		Jan		Prespawning		5		1899		191
				Feb		Prespawning		16		1091		450
				Mar		Spawning		11		5257		455
		Total						32		8247		1096
		II		Apr		Spawning		7		11269		555
				May		Postspawning		4		3197		400
				Jun		Feeding		1		861		100
		Total						12		15327		1055
		III		Jul		Feeding		15		1275		466
				Aug		Feeding		3		1151		201
		Total						18		2426		667
Grand total								62		26000		2818
Vb _I		II		Jun		Feeding		-		39		-
Grand total								-		39		-

RESEARCH VESSEL SURVEYS

Survey area	Period	Investigations
Barents Sea	Feb-Apr	Observations over distribution, spawning and migrations of capelin
West Ireland shelf, the Hebrides, Faroe and Shetland Islands	Feb-Apr	Acoustic survey of blue whiting stock on spawning grounds
Norwegian Shallows	Jan-Apr	Study of the Atlanto-Scandian herring spawning efficiency and stock assessment
SW Barents Sea	Apr-Jun	Survey of demersal and pelagic fish larvae
Faroe Islands, off-shore Norwegian Sea, Norwegian zone	Jul-Aug	Acoustic survey of blue whiting stocks on feeding grounds
Barents Sea and adjacent waters	Aug-Sep	International O-group fish survey
Barents Sea	Sep-Oct	International acoustic survey of the Barents Sea capelin, polar cod and herring stocks
Norwegian Sea	Nov-Dec	Observations over distribution of Atlanto-Scandian herring and blue whiting