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DEMERSAL FISH (NORTHERN) COMMITTEE

by A. Hylen

1973

Belgium

(P. Hovart)

Work at Sea

The RV "Hinders" continued the monthly cruises off the Belgian coast on 14 stations to determine the density and the composition of juvenile soles, plaice, dab, flounders, gadoids, shrimps and other species.

The joint programme with Holland and Germany (demersal young fish survey) was continued by two cruises.

Work on fish

The stock analysis by means of market sampling was continued. Age, length, weight, sex and weight of the gonads of cod, whiting, plaice and sole were determined. The areas studied are as follows : Cod - North Sea, whiting - North Sea, plaice - North Sea, English Channel, Bristol Channel and Irish sea; sole - North Sea, English Channel, Bristol Channel and Irish Sea.

Area / Species	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
Sole	1	-	12	1 230	200
	2	-	13	1 666	210
IV	3	-	11	1 413	190
	4	-	10	1 174	210
	1	-	6	624	210
	2	-	12	1 526	210
VIIa	3	-	4	387	130
	4	-	5	486	210
	1	-	10	1 090	210
	2	-	6	671	210
VIIf	3	-	7	829	210
	4	-	13	1 691	210
VIId,e	1	-	3	210	210

Species \ Area	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
Plaice IV	1	-	12	707	150
	2	1	12	820	169
	3	1	12	904	208
	4	-	10	663	150
VIIa	1	-	6	347	170
VIIf	1	-	10	586	170
VIId,e	1	-	1	70	70
Cod IV	1	-	10	287	220
	2	1	7	218	218
	3	1	7	190	190
	4	-	8	202	202
Whiting IV	1	-	9	271	115
	2	1	5	146	156
	3	1	7	214	184
	4	-	5	110	110
Haddock IV	1 - 4	-	9	373	-

Canada

(A.W. May)

A fuller report on research by Canada in 1973 on demersal fish species is contained in the Canadian research report to the Annual Meeting of ICNAF, May-June 1974.

Landings of the principal demersal species (cod, haddock, redfish, American plaice, greysole, yellowtail, Greenland halibut and pollock) from the NW Atlantic area by Canada in 1973 totalled about 500 000 tons, some 15 000 tons above the landings for the same species in 1972.

Landings of cod were lower in 1973 because of severe ice conditions in the northern area which hampered the traditional inshore cod fishery and because of a diversion of fishing effort to redfish in the Gulf of St. Lawrence. However, the decline in cod catches was more than offset by an increase in catches of redfish in the Gulf of St. Lawrence with mid-water trawls. Catches of pollock were greater than those in 1972.

In 1973, assessments were provided for the remaining cod stocks in areas from northern Labrador to the Scotian Shelf (ICNAF Subareas 2, 3 and 4); for the remaining American plaice stocks in ICNAF Subareas 2 and 3; for all major redfish and greysole stocks in ICNAF Subareas 2, 3 and 4; for all flounders combined in ICNAF Subarea 4; for silver hake in ICNAF Subarea 4; for the major Greenland halibut stock in ICNAF Subareas 2 and 3; for roundnose grenadier stock in ICNAF Subareas 2 and 3; for argentines in the southern part of ICNAF Subarea 4 and Subarea 5.

As a result of these assessments, international catch quotas for 1974 were agreed to by ICNAF for all stocks of demersal fish, which support directed fisheries, in ICNAF Subareas 2, 3 and 4.

To provide a data base for continued revision and updating of assessments for these demersal stocks, intensive research vessel surveys and commercial sampling of the various fisheries were conducted in 1973.

Associated biological data were collected for all species. Returns from tagging of yellowtail on the Grand Bank (Subarea 3) indicated limited movement from the area of tagging. Analyses of stomach contents of American plaice indicated that benthic invertebrates occurred more frequently than any other food type but that by weight capelin and sand launce were more important.

Studies on redfish were intensified in 1973 while studies on cod and haddock were conducted at the same level as in previous years.

Denmark

(O. Bagge)

Plaice

In July and August quantitative fishery for 0-group plaice was carried out in the Kattegat and the Sound. In the northern Kattegat the catches were about average, in the middle Kattegat, the southern Kattegat and in the Sound well above average.

Haddock, Whiting and Cod

On the "Dana" cruise in February length measurements and otoliths were collected.

Sole

The samplings in May from the west coast of Jutland have been continued and an age/length key has been worked out.

Cod

Tagging of cod has been carried out in the North Sea off Thorsminde; in March 309 individuals more than 70 cm and 154 cod caught on the Monkey Bank were tagged and transplanted to the Kattegat and released NW of Anholt.

551 cod were tagged in April and 569 in October in the Sound.

Federal Republic of Germany

(A. Meyer)

Continuation of the biological studies at sea on research ships and the markets with length measurements, collection of otoliths, maturity data and food.

Research trips: January - North Sea; February - North Sea; February - Baltic; April - North Sea, Baltic; May - North Sea, Baltic; June - Baltic; August - Baltic; August-September - Faroe/Iceland Ridge; September - North Sea; October - Baltic; November - North Sea; December - Baltic.

Sampling Data

Species Area	Season	Research Vessel Samples				Market Samples		
		No. of Samples	No. of Fish			No. of Samples	No. of Fish	
			Measured	Aged	Racial Invest.		Measured	Aged
Cod								
I	4	1	198	198				
IIa	1					6	1923	718
	2					2	778	224
IIIa	4	8	130	124				
IIIc	1	1				3	19036	2488
	2	2				3	13322	1033
	3	1				3	17936	1721
	4	2				3	20681	3598
IIId	1					3	3732	1588
	2					3	2615	125
	3					1	223	
	4					2	1717	828
IVa	1	20	423					
	3	30	328	189				
	4	17	214	214				
IVb	1	134	5997	816		41*	54	
	2	11	19			108*	13	
	3	44	214			131*	1	
	4	45	4616	526		55*	8	
Va	1					5	1726	788
	2					5	2105	633
	3					3	1261	478
	4					2	866	355
XIV	1					11	4376	2038
	2					6	2423	1249
	4					1	465	156

Sampling Data

Species Area	Season	Research Vessel Samples				Market Samples		
		No. of Samples	No. of Fish			No. of Samples	No. of Fish	
			Measured	Aged	Racial Invest.		Measured	Aged
Redfish								
IIa	1					4	970	
	2					1	470	
Va	1					14	3443	447
	2					16	4805	228
	3					16	3173	426
	4					12	2823	80
Vb	2					1	329	
	3					4	898	
	4					4	989	145
XIV	1					2	535	
	2					1	364	150
Whiting								
IIIa	4	2	244					
IVa	1	17	2097					
	3	8	478					
	4	12	1687					
IVb	1	52	6742					
	2	31	118					
	3	27	2248					
	4	23	2857					
Sole								
IVb	1	4	4			41*)	72	
	2	42	601			108*)	958	
	3	33	601			130*)	1053	
	4	17	97			*)	33	

Sampling Data

Species / Area	Season	Research Vessel Samples				Market Samples		
		No. of Samples	No. of Fish			No. of Samples	No. of Fish	
			Measured	Aged	Racial Invest.		Measured	Aged
Plaice								
IVb	1	61	2997	51		46*)	3656	1572
	2	52	480	20		115*)	6207	469
	3	43	1221	428		136*)	6011	536
	4	28	1212	65		56	1967	644
Dab								
IVa	3	2	2					
IVb	1	26	2477			41*)	2282	
	2	26	1439			108*)	1790	
	3	19	847			130*)	1830	
	4	19	692			55	2487	
Flounder								
IVb	1	13	248					
	2	19	128					
	3	7	14					
	4	4	5					

*) Samples from by-catch in the German shrimp fishery.

France

(G.Lefranc)

Travail en mer

En mars 1973, des chercheurs embarqués à bord du NO "Thalassa" ont dressé dans le sud de la Mer du Nord, dans un secteur délimité par les méridiens 0°30'E et 5°30'E et le parallèle 54°30'N un inventaire numérique des principales espèces commerciales (merlan, morue et poissons plats) et établi les compositions en tailles et en âges de ces captures. Les conséquences de l'utilisation de différents maillages (50, 60 et 70 mm intérieur de maille) sur la composition des captures ont été étudiées; des coefficients de sélectivité déterminés par la méthode des traicts alternés; les périmètres thoraciques de 1 091 morues ont été mesurés.

La "Thalassa" a d'autre part, prospecté en avril-mai les fonds de 200 à 500 m et plus, entourant Rockall, les accores nord de l'Ecosse, le seuil Wyville Thomson, et le sud du Banc des Faeroe; de nombreuses données biologiques et biométriques concernant les espèces pêchées et surtout la lingue bleue ont été collectées. Des facteurs de conversion poids plein, poids vide ont été calculés pour la lingue bleue et le lieu noir.

Travail au laboratoire

1. Laboratoire de Boulogne-sur-Mer

   Parallèlement à l'étude des données et échantillons recueillis au cours des campagnes, des relevés statistiques concernant les apports de lieu noir, de merlan et de morue sont poursuivis.

   Une étude statistique et biologique du lieu noir en provenance de la Mer du Nord septentrionale, des Faeroe, des accores ouest et des Shetlands et Hébrides a débuté courant 1973.

   L'incompatibilité existant actuellement entre la taille marchande du merlan fixée à 23 cm et l'emploi du maillage réglementaire de 70 mm a fait l'objet de plusieurs rapports.

   L'étude de l'influence du maillage sur la qualité commerciale du merlan a trouvé sa conclusion.

   L'examen des premiers résultats obtenus à la suite des marquages de morue dans la région de Forty Miles montre que ces poissons s'éloignent très peu du lieu de libération et restent pour plus de 80% localisés à l'interieur d'une aire circonscrite par un cercle de 60 milles de rayon.

2. Laboratoire de Lorient

   Merlan - poursuite du travail débuté en octobre 1972 sur le merlan de la Mer d'Irlande : analyse du stock au moyen de l'échantillonnage des captures commerciales.

   Lieu noir, églefin, morue, sole - un relevé mensuel des captures des catégories commerciales de ces différentes espèces a été poursuivi.

Echantillonnage

Région	Saison 1973	Nb. échantillons		Nb. de Poissons mesurés	Nb otolithes prélevés
		Bateau de Recherche	Marché		
MORUE					
IVc	mars	23	-	2 130	226
IVb	mars	11	-	603	
VIId	mars	2	-	52	
VIb	avril-mai	2	-	8	8
VIa	avril-mai	1	-	1	1
MERLAN					
IVc	mars	22	-	27 431	348
IVc	mars	11	-	11 206	
VIId	mars	1	-	373	
VIIa	jan.,fév.,mars	-	9	1 004	88
VIIa	avr.,mai,juin	-	4	595	67
VIIa	juil.,août,sept.	-	3	372	96
VIIa	oct.,nov.,déc.	-	4	460	111
EGLEFIN					
VIb	avril-mai	23	-	2 337	-
Vb	avril-mai	4	-	223	-
VIa	avril-mai	1	-	1	-
LIEU NOIR					
VIa	avril-mai	7	-	43	340
VIb	avril-mai	21	-	334	
Vb	avril-mai	4	-	10	
Vb_2	avril-mai	9	-	186	
POUTASSOU					
VIa	avril-mai	10	-	280	-
VIa	avril-mai	25	-	1 800	-
Vb_1	avril-mai	6	-	218	-
Vb_2	avril-mai	8	-	394	-
MERLU					
VIa	avril-mai	3	-	6	-
VIb	avril-mai	3	-	6	-
LINGUE BLEUE					
VIa et Vb	avril-mai	-	-	1 187	99
SEBASTES					
Vb	avril-mai	-	-	260	-
PLIE					
IVb	mars	10	-	223	-
IVc	mars	18	-	806	-
LIMANDE					
IVb	mars	9	-	2 377	-
IVc	mars	21	-	9 260	-
VIId	mars	1	-	231	-

Iceland

(J. Jónsson)

The research vessels "Bjarni Sæmundsson" and "Hafthor" were all the year engaged in work on demersal species. Besides work at Iceland, the "Bjarni Sæmundsson" made two trips to East Greenland waters.

The distribution of the mature cod on its way to the spawning grounds and during the spawning was studied by means of echosounding, tagging and actual fishing on key positions. Besides that, the "environment" of the cod was studied by a dense net of hydrographical stations together with measurements of the phytoplankton production and the distribution and density of zooplankton.

The abundance of the immature population of cod on the nursery grounds mainly in the cold water area was studied by numerous trawling experiments and tagging.

The research programme described for the cod was also applied to the stock of haddock.

As for other demersal species, the investigations were carried out in more or less the same way as in previous years. Of special interest was the pelagic trawling for redfish, but the results have until now been of negligible economic importance.

The number of fish sampled is shown in the following table which deals with fish sampled from the commercial fishery and from research vessel catches.

Sampling

Species	Otoliths	Length and Sex Mat.	Length only	Tagged	Area
Cod	15 010	2 700	63 009	3 494	Iceland
-	1 947	-	2 253	1 174	E. Greenland
Haddock	4 084	1 461	25 748	1 379	Iceland
Saithe	149	-	222	-	-
Whiting	498	-	1 941	-	-
Ling	221	-	195	-	-
Blue Ling	205	-	191	-	-
Grenadier	164	-	496	-	-
Plaice	2 355	-	706	3 505	-
Greenl. Halibut	1 768	-	4 262	4 223	-
Halibut	227	-	503	-	Iceland
-	-	-	119	-	E. Greenland
S. marinus	205	5 370	11 870	-	Iceland
-	500	5 524	2 020	-	E. Greenland
S. mentella	-	997	383	-	Iceland
-	276	-	198	-	E. Greenland
-	439	-	-	-	Greenland Sea
S. viviparus	-	370	943	-	Iceland
Catfish	1 780	2 755	-	-	Iceland
Lumpsucker	795	2 103	22	-	Iceland

Ireland

(F.A. Gibson)

An intensive study of cod, plaice and black sole stocks in Irish waters was started in 1973. The first few years of work with cod and black sole will be devoted to an understanding of the biology of these two hitherto unstudied species in our waters. In 1974, haddock will be added to the three mentioned above.

Since 1970, a confined programme of research into the biology of skates, rays, blue shark, tope and monkfish has been in progress, involving tagging, age, growth and analysis of food intake. Preliminary results suggest that skate and monkfish may be virtually sedentary; rays are essentially local in habitat; and that blue shark and tope wander over a wide area of the eastern Atlantic. Some evidence has been found of thornback ray in certain bays of the west of Ireland, which though maturing at a size much smaller than those elsewhere recorded, never appear to grow as large as thornbacks in parts of Europe.

A limited tagging programme has been carried out with flounders in the Irish Sea and this has enabled some growth and feeding data to be collected.

A routine research vessel cruise to study whiting distribution in the western Irish Sea was carried out in October 1973.

Netherlands

(J. F. de Veen)

Work at Sea

The RV "Tridens" made 14 cruises in the Committee's area of which 11 were mainly or partly devoted to work within the scope of the Demersal Fish (Northern) Committee. The corresponding numbers of cruises by RV "Willem Beukelsz" were 23 and 12. The RV "Stern" and "Schollevaar" made together 23 cruises devoted to demersal topics in the Netherlands estuaries. The RV "Tridens", "Willem Beukelsz", "Stern" and "Schollevaar" made two joint cruises (in April and October) to analyse the stocks of juvenile sole, plaice, dab, flounder, gadoids, shrimp and other organisms in the nurseries of Belgium, Holland, Germany and part of Denmark in cooperation with the Belgian research cutter "Hinders" and the German RV "Neptun" and Büsum 45 "Hai".

Work on Fish

Plaice

The stock analysis by means of market sampling was continued. Analysis of the catches of the young fish cruises in the Southern and Central North Sea continental coastal areas revealed that the 1972 year class is poor and the 1973 year class of far above average strength.

Sole

The stock analysis by means of market sampling of soles from different localities in the North Sea, the Irish Sea, the Bristol Channel was continued. One cruise in April was made to the Irish Sea and the Bristol Channel for census and tagging purposes. An analysis of the catches of undersized sole in the Belgian, Dutch and German coastal areaswas made in April and October in order to be able to predict commercial catches. Both year classes 1972 and 1973 appeared to be poor sp that we have now four year classes in succession since 1970 of below normal strength. A research programme on factors influencing recruitment to the North Sea sole stock was initiated. To this end a plankton sampling device for the bottom layers was developed and proved to be satisfactory in catching sole larvae and very small soles.

The following numbers of flatfish were tagged :

Sole:	Irish Sea, 1 700 adults,	Dutch nurseries, 500 juveniles
Plaice:		Dutch nurseries, 2 200 juveniles
Flounder:		Dutch nurseries, 1 000 adults and juveniles

Cod, haddock and whiting

The stock analysis by means of market sampling was continued.

Cod

The year class 1972 appears to be good and the year class 1973 poor in the Central and Southern North Sea.

Sampling Data : see following pages.

The Netherlands 1973

Sampling data for Sole

area	season	No. of samples for age-determination only		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV b	1st quarter	-	2	450	150	150
	2nd quarter	3	31	1575	1630	1630
	3rd quarter	-	4	1200	200	200
	4th quarter	5	3	1275	350	350
IV c	1st quarter	-	2	2325	100	100
	2nd quarter	4	21	2550	1185	1185
	3rd quarter	-	2	1275	100	100
	4th quarter	3	3	1425	235	235
VII a	1st quarter	-	-	-	-	-
	2nd quarter	5	2	150	441	441
	3rd quarter	-	-	-	-	-
Dutch Waddensea	2nd quarter	5	-	6	67	67
	4th quarter	5	-	1498	69	69
Zeeland estuary	2nd quarter	-	-	37	-	-
	4th quarter	3	-	699	60	60
Total annually		33	71	14465	4587	4587

The Netherlands 1973

Sampling data for Plaice

area	season	No. of samples for age-determination only		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV b	1st quarter	-	35	2049	2450	2450
	2nd quarter	3	5	770	505	505
	3rd quarter	-	5	1540	350	350
	4th quarter	9 + 9	5	1260	1344	1344
IV c	1st quarter	-	36	2601	2520	2520
	2nd quarter	5 + 2	1	1820	531	531
	3rd quarter	-	3	1050	210	210
	4th quarter	5	3	1190	411	411
Dutch Waddensea	2nd quarter	-	-	2322	-	-
	4th quarter	5 + 7	-	4412	333	333
Zeeland estuary	2nd quarter	3	-	390	190	190
	4th quarter	4 + 1	-	1607	175	175
Total annually		53	93	21011	9019	9019

The Netherlands 1973

sampling data for Cod

area	season	No. of samples for age-determination only		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	2	3	615	289	-
	2nd quarter	-	2	550	150	-
	3rd quarter	1	1	100	125	-
	4th quarter	-	2	310	100	-
IV b	1st quarter	2	2	400	237	-
	2nd quarter	-	2	330	100	-
	3rd quarter	1	2	1040	214	-
	4th quarter	-	3	740	145	-
IV c	1st quarter	6	5	1560	581	-
	2nd quarter	-	4	1470	268	-
	3rd quarter	-	6	920	303	-
	4th quarter	-	3	950	160	-
Total annually		12	36	8985	2672	-

Sampling data for Saithe

area	season	No. of samples only for age-determination		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	-	3	720	218	-
	2nd quarter	-	-	385	-	-
	3rd quarter	1	-	200	85	-
	4th quarter	-	2	425	100	-
IV b	1st quarter	-	-	-	-	-
	2nd quarter	-	-	-	-	-
	3rd quarter	-	-	-	-	-
	4th quarter	-	-	-	-	-
Total annually		1	5	1730	403	-

Sampling data for Whiting

area	season	No. of samples for age-determination only		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	1	2	550	117	-
	2nd quarter	-	3	425	150	-
	3rd quarter	1	1	200	122	-
	4th quarter	-	2	540	100	-
IV b	1st quarter	1	1	250	99	-
	2nd quarter	-	2	750	100	-
	3rd quarter	1	3	1200	225	-
	4th quarter	-	1	410	50	-
IV c	1st quarter	2	3	1500	264	-
	2nd quarter	-	4	900	200	-
	3rd quarter	-	4	1000	200	-
	4th quarter	-	3	1200	150	-
Total annually		6	29	8925	1777	-

The Netherlands 1973.

sampling data for Haddock

area	season	No. of samples for age-determination only		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	1	2	900	131	-
	2nd quarter	-	3	550	150	-
	3rd quarter	1	1	350	123	-
	4th quarter	-	2	570	101	-
IV b	1st quarter	1	2	600	156	-
	2nd quarter	-	2	1100	100	-
	3rd quarter	1	2	1300	187	-
	4th quarter	-	3	730	175	-
IV c	1st quarter	-	-	-	-	-
	2nd quarter	-	-	-	-	-
	3rd quarter	-	-	-	-	-
	4th quarter	-	-	-	-	-
Total annually		4	17	6100	1123	-

Norway

(A. Hylen)

Subareas I and II

Fish sampling was carried out on the same scale as in 1972. Stock assessment programmes of Arcto-Norwegian cod and haddock, saithe and Greenland halibut have continued.

In February and March the distribution of Arcto-Norwegian cod in Lofoten was charted at three stages during the spawning season. Mature cod were tagged in March in the same area.

The distribution of young cod and haddock in the southeastern Barents Sea was charted in March during a survey of spawning capelin. In August the distribution and abundance of young cod, haddock and redfish was studied in the West Spitsbergen-Bear Island area and in the Barents Sea. In September a survey of 0-group fish of commercially important species was carried out in the same area as part of the International 0-group Survey.

Young saithe were tagged in June at the Norwegian coast in the southern part of Division IIa. Cod, haddock and young saithe were tagged during August in the coastal waters of Northern Norway.

The abundance of 0-group saithe was studied in September at selected localities at the Norwegian coast.

Subarea IV

The sampling of commercial catches from the Recommendation 4 fisheries in Division IVa and the southern part of Division IIa was carried out throughout the whole year. A total of 124 landings from Division IVa and 83 from Division IIa were analysed.

Surveys of the distribution and abundance of the most important Recommendation species were undertaken in May, October, and November in Subarea IV.

Young saithe were tagged in June at the Norwegian west coast.

NORWEGIAN SAMPLING DATA 1973

SPECIES	AREA	SEASON	NO. OF SAMPLES		NO. OF FISH		
			R/V	Market	Measured	Aged	Tagged
COD	I	1	20	1	2 116	5 622	-
		2	1	51	17 933	-	-
		3	40	13	4 925	902	1 027
		4	1	19	5 619	400	-
	IIb	3	20	-	1 267	751	-
	IIa	1	25	229	45 081	548	3 595
		2	-	3	196	1 522	-
		3	6	2	151	1 575	344
		4	-	8	1 965	693	-
HADDOCK	I	1	14	11	857	197	-
		2	1	26	6 646	1 202	-
		3	30	8	4 013	1 666	1 328
		4	1	12	3 123	414	-
	IIb	3	2	-	118	99	-
	IIa	1	4	2	368	175	-
		2	-	-	-	-	-
		3	7	7	1 211	187	870
		4	-	8	1 647	349	-
SAITHE	I	2	1	12	2 767	769	-
		3	-	21	6 790	770	750
		4	-	2	648	100	-
	IIa	1	2	-	42	42	-
		2	-	5	2 877	444	1 200
		3	1	9	3 826	681	1 671
		4	-	9	4 555	901	-
	IVa	2	1	4	2 452	435	1 500
		3	-	-	-	-	-
		4	1	-	109	99	-
GREENLAND HALIBUT	I	3	5	-	752	258	-
	IIb	2	9	-	1 216	517	-

Norwegian sampling in the areas where industrial trawl fisheries take place

SPECIES	AREA	SEASON	NO. OF SAMPLES		NO. OF FISH		
			R/V	Market	Measured	Aged	Tagged
COD	IVa	2	11	-	40	-	-
		4	10	-	376	252	-
HADDOCK	IIa	2	-	15	44	-	-
		3	-	11	34	-	-
	IVa	1	-	43	293	-	-
		2	8	20	570	220	-
		3	-	18	323	-	-
		4	13	10	1 857	187	-
SAITHE	IVa	2	8	-	78	42	-
		4	9	-	326	50	-
WHITING	IVa	2	7	-	259	220	-
		4	12	-	532	50	-
NORWAY POUT	IIa	1	-	13	1 420	-	-
		3	-	4	409	-	-
		4	-	3	309	-	-
	IVa	1	-	47	3 186	-	-
		2	11	29	3 538	425	-
		3	-	19	1 330	-	-
		4	14	15	2 835	460	-
BLUE WHITING	IIa	1	-	2	278	-	-
		2	-	27	1 918	-	-
		3	-	13	704	-	-
		4	-	2	50	-	-
	IVa	1	-	44	3 323	-	-
		2	6	31	2 664	-	-
		3	-	19	1 859	-	-
		4	8	13	2 711	448	-
SILVER SMELTS	IIa	1	-	2	88	-	-
		2	-	20	859	-	-
		3	-	12	60	-	-
		4	-	1	158	-	-
	IVa	1	-	43	1 441	-	-
		2	7	28	204	71	-
		3	-	19	514	-	-
		4	8	9	1 049	25	-
SILVERY POUT	IIa	2	-	5	427	-	-
		3	-	2	100	-	-
	IVa	2	4	-	64	-	-
		4	4	-	48	48	-
GREENLAND HALIBUT	IIa	2	17	-	1 388	240	-

Poland

(W. Cieglewicz and J. Netzel)

Baltic: The samples of cod, flounder and plaice were taken from landings. Quantitative catches of juvenile cod were carried out in March on the RV "Dr Lubecki".

North Sea: The samples of cod, haddock, whiting and saithe were taken by the RV "Wieczno" and scouting vessels.

Northeast Arctic: The samples of cod, haddock, saithe and Greenland halibut were taken by scouting vessels.

Sex and sexual maturity were observed for all species mentioned on the enclosed table.

Area / Species	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
COD					
Baltic (25)	1	-	12	5 129	1 100
	2	-	9	4 301	900
	3	-	6	2 514	600
	4	-	4	2 011	400
	March	1	-	1 061	366
Baltic (26)	1	-	12	5 264	1 200
	2	-	4	1 281	400
	3	-	3	1 987	300
	4	-	3	2 171	300
	March	1	-	1 596	648
IVa	-	5	-	1 234	564
IVb	-	3	-	968	294
I and IIb	-	10	-	8 534	1 350
HADDOCK					
IVa	-	20	-	8 498	1 912
IVb	-	14	-	4 468	1 392
VIa	-	10	-	9 732	937
VIIg-k	-	1	-	329	100
I and IIb	-	5	-	1 974	301
WHITING					
IVa	-	6	-	2 915	629
IVb	-	6	-	2 153	600
VIa	-	3	-	834	303
VIIg-k	-	1	-	214	108

Area Species	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
SAITHE					
IVa	-	7	-	10 659	697
I and IIb	3/4	1	-	305	100
FLOUNDER	1	-	2	460	200
Baltic(25)	2	-	-	-	-
	3	-	5	1 070	493
	4	-	3	825	300
Baltic (26)	1	-	9	1 170	803
	2	-	4	400	880
	3	-	5	346	333
	4	-	3	161	160
PLAICE					
IIId	-	-	3	230	230
GREENLAND HALIBUT					
IIb	3/4	30	-	17 721	-

Portugal

(J. de Ataíde and M. L. Dias)

The studies concerning this Committee's area were limited to samples of cod caught by the commercial fishing boats in the ICNAF area (Subareas 1 and 3). Data have been obtained on length, stage of maturity, age and age at first maturity (see table). Theyá are being processed for later analysis.

Sampling for Gadus morhua

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
ICNAF 1	2	-	13	3 699	600	-
	3	-	12	4 026	450	-
ICNAF 3	2	-	5	2 012	50	-
	3	-	28	7 111	1 200	-

Spain

(O. Cendrero)

No relevant research was carried out except that in the ICNAF area.

Sweden

(G. Otterlind)

In the Baltic, investigations have been made on cod along the same lines as in previous years. The sampling for age determination comprises about 2 000 fish. The abundance of cod eggs and larvae indicate a very good recruitment to the stock in the southern Baltic, but probably a poor one in the central Baltic proper.

United Kingdom

1. England and Wales

(D.J. Garrod)

1. Region I Fisheries

Stock assessment programmes have continued. RV"Cirolana" carried out five cruises in the area during the year. Three in the Northeast Arctic, a codling survey, 13 March - 3 April, in the S. Barents Sea, a survey of distribution of fish in the Bear Island, Spitsbergen, Hopen Island between 24 May - 20 June, and in August-September a survey of the distribution of 0-group fish in the Barents Sea was undertaken as part of the international programme. One cruise was made to the west of Iceland where immunogenetic studies of cod were continued. At Faroe a survey of 0-group fish was carried out at the beginning of July.

2. Region II Fisheries

The programme of sampling commercial landings at all the major fishing ports was maintained at the same level as previous years, in addition a start was made on an intensive inshore sampling programme at many of the minor inshore fishing ports. The new programme is designed to give a more detailed knowledge of the abundance and distribution of the inshore stocks around the coast of England and Wales. The first phase of the programme covered the area between Flamborough Head and Berwick on the N.E. coast and will be extended to cover the whole of the coastline.

This shore based programme was supported by a number of research cruises carrying out egg and larval surveys, tagging and trawl surveys to determine the seasonal distribution of the main commercial species.

In the central North Sea an 0-group gadoid survey was carried out in June as part of the international programme.

Two surveys to assess the commercial potential of the deep water grounds between 400 and 650 fathoms on the edge of the continental slope to the west of U.K. were carried out during the year by RV "Cirolana" in April-May and by a chartered commercial fishing vessel "Swanella" during August-September. This work will continue in 1974.

Region	Species	Cod	Ray	Lemon Soles	Sole	Spurdog	Whiting	Total by Region
	Plaice							
IVA		611				852		1463
IVB								
IVC	53	9					3	65
VIA								
VIIA				80	289			369
VIID	103	47	7	44	63			264
VIIE								
VIIF								
Total by Species	156	667	7	124	352	852	3	2161

RELEASE OF TAGGED FISH 1973 - ICES REGIONS

SAMPLING DATA FOR COD

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
I-IIA-IIB	Spread throughout the year		307	66971	2572	
VA	"		437	91521	2127	178
VB	"		139	18368	1196	
VIA	"		48	7426	606	
IV	"		380	68892	2530	
VIIA	"		89	16204	1602	
VIIB	"		1	60	20	
VIIF	"		13	1857	281	
VIIG	"		2	427	38	

SAMPLING DATA FOR PLAICE

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
I	Spread throughout the year		13	2914	11	
VA	"		50	8596	388	
VB	"		2	110	-	
IV	"		395	83698	3961	
VIIA	"		96	19693	1945	
VIIE	"		47	8257	859	
VIIF			22	5688	460	
VIIG			1	260	28	

SAMPLING DATA FOR HADDOCK

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
I-IIA-IIB	Spread throughout the year		246	47898	1189	
VA	"		240	37485	1092	
VB	"		98	18290	98	
IV	"		163	25086	201	
VIA	"		30	6042	478	
VIIA	"		28	4283	-	
VIIF	"		8	1228	-	
VIIG	"		2	320	-	

SAMPLING DATA FOR COALFISH

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
I-IIA-IIB	Spread throughout the year		70	7084	501	
VA	"		85	5424	876	
VB	"		58	5435	521	
IV	"		52	5426	439	
VIA	"		64	6673	516	
VIIA			3	221	9	
VIIB			1	106	-	

SAMPLING DATA FOR WHITING

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
VB	Spread throughout the year		2	140	-	
IV	"		183	18393	642	
VIIA	"		90	10787	1355	
VIIE	"		53	7305	357	
VIIF	"		13	1402	154	
VIIG	"		1	88	-	

SAMPLING DATA FOR SOLE

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
IV	Spread throughout the year		142	15476	753	
VIIA	"		43	9715	434	
VIIE	"		59	11645	253	
VIIF	"		11	2849	81	

SAMPLING DATA FOR LEMON SOLE

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
VIIE	Spread throughout the year		49	7072	193	

SAMPLING DATA FOR TURBOT

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
IV	Spread throughout the year		109	5483	2	

SAMPLING DATA FOR HAKE

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
IV	Spread throughout the year		10	1996	-	
VIA	"		36	8190	-	
VIIA	"		56	12483	-	
VIIF			4	1542		

SAMPLING DATA FOR SPURDOGS

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
IV			40	6602	898	
VIA			41	3830	71	

SAMPLING DATA FOR RAYS

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
VIA			31	1901	-	
VIIA			77	10073	897	
VIIF			35	4032	290	

SAMPLING DATA FOR SANDEELS

Area	Season	Number of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
IVB	April-June	1	5	1319	396	
	July-Sept	-	1	156	37	

2. Scotland

(R. Jones)

Scottish research vessels undertook routine trawling surveys in the North Sea in April/May and December. Surveys were also undertaken on the Scottish west coast in December and at the Faroes in July. The results of these cruises were used to obtain pre-recruit estimates of the year class strengths of haddock, whiting and Norway pout, and also to determine the lengths and age compositions of the major demersal fish stocks. 0-group gadoid were sampled pelagically in the North Sea in July with the object of obtaining earlier estimates of their relative year class strengths.

The major roundfish and flatfish species were sampled at the principal Scottish trawl and seine net ports as in previous years. Samples were taken for age determination and these data form the basis for material supplied to Annales Biologiques and to ICES Statistical News Letters. They are also used to provide forecasts for the major Scottish fisheries.

Landings of Norway pout at the main Scottish ports were monitored throughout the year. Further Norway pout fecundity material was collected to determine the relationship between fecundity and size and to investigate variations in these parameters with density, and between areas.

Tagging of the major round- and flat-fish species has been continued with particular emphasis on tagging in offshore North Sea waters.

Observations have been made on the movements and behaviour of a number of fish species by attaching ultrasonic transmitters to them and then following their movements by acoustic means. Preliminary results have shown that cod captured and released in a west coast sea loch, returned to their capture site within a matter of hours.

Aquarium studies have continued on the efficiency of food conversion in gadoids, and studies have been continued on the feeding behaviour of gadoids.

Results of further examinations of whiting for Gilquinia and Anisakis infections have generally served to confirm previous findings. Promising preliminary results have been obtained from a new study of haddock populations using the larval cestode Grillotia as a biological tag. The numbers of fish measured and aged in 1975 are shown in the attached tables.

A. GADOID FISH

Area	Cod		Haddock		Whiting		Saithe		Hake		T. esmarkii	
	Measured	Aged	Measured	Aged	Measured	Aged	Measured	Aged	Measured	Aged	Measured	Aged
IV	1) 24 740	13 536	148 670	19 557	67 081	16 905	12 689	7 024	-	-	4 836	933
	2) 1 276	176	64 529	4 184	63 000	3 732	+	-	+	-	74 420	702
VIa	1) 8 880	3 685	40 988	7 747	41 843	7 188	8 981	3 231	3 985	-	1 119	324
	2) 120	113	3 125	652	4 187	1 158	160	131	+	-	127 384	549
Vb	1) 5 756	-	22 050	4 530	5 532	1 694	4 751	2 563	-	-	-	-
	2) 1 240	740	17 652	1 534	3 466	-	2 070	-	-	-	16 425	291
Va	1) 1 767	-	3 489	1 236	-	-	+	+	-	-	-	-
	2) -	-	-	-	-	-	-	-	-	-	-	-
I & II	1) 931	-	5 056	2 170	-	-	-	-	-	-	-	-
	2) 5 928	-	1 752	-	-	-	11 023	-	-	-	-	-

1) Market Sampling Data
2) Research vessel data
\+ Less than 100

B. FLATFISH

Area	Plaice		Lemon Sole		Megrim	
	Measured	Aged	Measured	Aged	Measured	Aged
IV	1) 42 802	1 839	35 643	1 416	7 365	2 660
	2) +	-	+	-	-	-
VIa	1) 11 494	585	2 235	119	2 252	902
	2) +	-	+	-	+	-
Vb	1) 3 845	683	17 236	245	346	151
	2) +	-	1 484	-	-	-

U.S.A.

No report received.

U.S.S.R.

(G. V. Nikolsky)

In 1973, as well as in previous years, collection of material was conducted in the Barents, Norwegian, North and Greenland Seas by the Polar Research Institute of Marine Fisheries and Oceanography (PINRO). This work was aimed at determination of abundance, size-age composition and distribution of cod, haddock, saithe, redfish, Greenland halibut and other bottom fish in the ICES area. The volume of material by areas is shown in the following tables. The material was collected on board research vessels.

Besides, studies on the refinement of the assessment of the state of stocks of main commercial fish were continued; conditions of survival of the young at different stages of development were studied; ichthyoplankton was collected and analysed; fisheries forecasts were made; methods of forecasting were improved.

Sampling data

Area / Species	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
REDFISH					
I	1	6	-	9 468	-
	2	4	-	9 234	-
	3	-	-	296	-
	4	-	-	1 185	-
IIb	1	1	-	8 500	-
	2	2	-	8 911	-
	3	4	-	32 418	-
	4	-	-	12 108	-
Va	1	-	-	100	-
	2	2	-	7 643	-
	3	-	-	24	-
	4	-	-	-	-
GREENLAND HALIBUT					
I	1	-	-	1 524	-
	2	-	-	748	-
	3	-	-	41	-
	4	-	-	89	-
IIb	1	2	-	1 087	492
	2	-	-	497	-
	3	3	-	3 375	338
	4	-	-	345	-
Va	2	1	-	5 549	300
	3	1	-	948	300

Sampling Data

Area Species	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
COD	1	21	-	94 985	2 570
I	2	33	-	159 994	6 232
	3	16	-	74 570	2 709
	4	13	-	29 454	2 776
	1	-	-	666	-
IIb	2	-	-	2 113	-
	3	16	-	77 605	2 364
	4	6	-	16 339	1 099
HADDOCK	1	14	-	50 545	2 377
I	2	34	-	116 115	6 355
	3	16	-	31 691	2 305
	4	7	-	15 982	900
	1	-	-	38	-
IIb	2	-	-	181	-
	3	6	-	7 509	1 322
	4	-	-	1 006	-
IV	1	-	-	1 321	-
AMERICAN PLAICE	1	1	-	29 977	-
I	2	7	-	5 782	191
	3	8	-	4 035	497
	4	-	-	137	-
	1	-	-	724	-
IIb	2	-	-	-	-
	3	-	-	1 263	-
	4	-	-	-	-
SAITHE	1	-	-	41	-
	2	-	-	359	-
I	3	-	-	7	-
	4	-	-	-	-
	1	4	-	8 776	696
IIa	2	-	-	569	-
	3	-	-	-	-
	4	-	-	-	-
IV	1	3	-	3 340	421

In spring and autumn 1973 trawl surveys on counting the young of haddock and whiting in the Northern Sea were completed by the Atlantic Research Institute of Marine Fisheries and Oceanography (AtlantNIRO). The spring ichthyoplankton survey on the haddock spawning grounds was also accomplished in the northwestern areas of the Sea.

Accumulation of material on size-age composition of haddock, whiting and saithe was continued.

In 1974 the study of early stages of haddock will be continued. Counting of young haddock and whiting, as well as study of the stock conditions for haddock, whiting and saithe is planned. The volume of the material collected and treated in 1973 is given in the Table below.

Species	Mass measurements		Age determination (specimens)	Tagging (external hydrostatic tags)	Otoliths weighed
	from fishing trawls (specimens)	small mesh cover (specimens)			
Haddock	191 871	43 603	824	3 900	-
Saithe	78 066	53	1 948	800	1 137
Whiting	63 151	19 949	1 200	-	-
Norway Pout	34 540	1 970	1 350	-	-
Gadoid Fish	28 350	-	350	-	-
Total	395 978	65 575	5 672	4-700	1 137

Study of the reproduction conditions for cod and flounder in different areas of the Baltic Sea was conducted by the Baltic Research Institute of Fisheries. In 1973 the assessments were made on the yield, the birth and stock conditions for the 1971 to 1973 year classes. The regularities of stock distribution by areas were investigated, special attention was paid to the peculiarities of growth and mortality for cod and flounder in relation to the environmental conditions and fishing intensity. Tagging of flounder and cod was carried out.

Food chains of cod were studied in the main feeding and reproduction areas as well as morphophysiological factors, the effect of the availability with food on the intensity of fat accumulation in fish organs the seasonal dynamics of fat, protein, carbohydrate and mineral metabolism in liver, muscles and blood of the fish.

In 1974, these investigations will be continued.
