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.

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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

(0. 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.

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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 des 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

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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.

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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

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Species	Otoliths	Length and Sex Mat.	Length only	Tagged	Area
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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 monifish 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.

(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 Beukekz" 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".

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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:

11

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

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sampling data for Haddock The Netherlands 1973.

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ne Netherland	27 G 20	IV &		O AT	Total a

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 O-group fish of commercially important species was carried out in the same area as part of the International O-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 O-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. 0	F FISH	
			R/V	Market	Measured	Aged	Tagged
COD	I	1 2 3 4	20 1 40 1	1 51 13 19	2 116 17 933 4 925 5 619	5 622 902 400	1 027
	IIb	3 1 2 3 4	20 25 6 -	229 3 2 8	1 267 45 081 196 151 1 965	751 548 1 522 1 575 693	3 595 - 344 -
HADDOCK	I IIb IIa	1 2 3 4 3 1 2 3 4	14 1 30 1 2 4 -7	11 26 8 12 - 2 - 7 8	857 6 646 4 013 3 123 118 368 1 211 1 647	197 1 202 1 666 414 99 175 - 187 349	1 328
SAITHE	I	2 3 4 1 2 3 4	2	12 21 2 5 9	2 767 6 790 648 42 2 877 3 826 4 555	769 770 100 42 444 681 901	750 - 1 200 1 671
	IVa	2 3 4	-	4	2 452	435	1 500
GREENLAND HALIBUT	I	3 2	5 9	See American See A	752 1 216	258 517	

end 2(1 mm

Norwegian sampling in the areas where industrial trawl fisheries take place

SPECIES	AREA	SEASON	NO. OF	SAMPLES	NO. OF	FISH	
during constant of the second			R/V	Market	Measured	Aged	Tagged
COD	IVa	2 4	The G	See	40 376	252	-
HADDOCK	IIa	2 3	entillelegenggenggeberg sich er zein gut im Stateng. Die einstaten zu staten eine Franzische Anstalle zu state Rangel	15 11	44 34		atomic surface
	IVa	1 2 3 4	8 13	43 20 18 10	293 570 323 1 857	220 187	-
SAITHE	IVa	2 4	8		78 326	42 50	THE CO.
WHITING	IVa	2 4	7 12	Seat.	259 532	220 50	
NORWAY POUT	IIa	1 3 4	alam da para d Sagra	13 4 3	1 420 409 309	Trial apps	n profit sond
	IVa	1 2 3 4	11 14	47 29 19 15	3 186 3 538 1 330 2 835	425 460	-
BLUE WHITING	IIa	1 2 3 4	Loss Acts Tring Tring	2 27 13 2	278 1 918 704 50	gents grant name come	end end
2 - 02	IVa	1 2 3 4	sa ta 6 sa ta 8	44 31 19 13	3 323 2 664 1 859 2 711	- - 448	
SILVER SMELTS	IIa	1 2 3 4	p-min	2 20 12 1	88 859 60 158	others Colors	need. printer need.
	IVa	1 2 3 4	7 8	43 28 19 9	1 441 204 514 1 049	71 - 25	944 444 204 594
SILVERY POUT	IIa	2 3		5 2	427 100		Applies Applies
	IVa	2 4	4	orbest contact	64 48	48	Margel Margel
GREENLAND HALIBUT	IIa	2	17		1 388	240	ger yedin nargan-agan kalikus di baret CD-e- van - esame agan

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.

		No. of	Samples	No. of F	ish
Area Species	Season	Research Vessels	Market Samples	Measured	Aged
COD Baltic (25)	1 2 3 4 March	- - 1	12 9 6 4	5 129 4 301 2 514 2 011 1 061	1 100 900 600 400 366
Baltic (26)	1 2 3 4 March	- - 1	12 4 3 3	5 264 1 281 1 987 2 171 1 596	1 200 400 300 300 648
IVa IVb		5 3	gent Sank	1 234 968	564 294
I and IIb	Besting.	10	-	8 534	1 350
HADDOCK IVa IVb VIa VIIg-k	cost	20 14 10 1	Towns To	8 498 4 468 9 732 329	1 912 1 392 937 100
I and IIb	-	5	94A	1 974	301
WHITING IVa IVb VIa VIIg-k	megic services	6 6 3 1	good metal	2 915 2 153 834 214	629 600 303 108

To a second seco		No. of S	emples	No. of 1	Fish
Area Species	Season	Research Vessels	Market Samples	Measured	Aged
SAITHE IVa I and IIb	3/4	7	pane sens	10 659 305	697 100
FLOUNDER Baltic(25)	1 2 3 4	And to the second secon	2 . - 5 3	460 1 070 825	200 - 493 300
Baltic (26)	1 2 3 4		9 4 5 3	1 170 400 346 161	803 880 333 160
PLAICE	- Company of the Comp	200	3	230	230
GREENLAND HALIBUT IIb	3/4	30	events and a second sec	17 721	and a

Portugal (J. de Atafae 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). They are being processed for later analysis.

Sampling for Gadus morhua

	And the state of t	No. of	Samples	No. of	Fish	Racial
Area	Season	Research Vessels	Market Samples	Measured	Aged	Investigation
ICNAF 1	2 3	6000 6000	13 12	3 699 4 026	600 450	Manual Ma
ICNAF 3	2	The state of the s	5 28	2 012 7 111	50 1 200	General Control of Con

Spain

(0. 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 O-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 O-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 O-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 f thoms 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.

					100 NO NO	
Region	Species Plaice	Cod	Ray	Lemon Soles	Sole Spurdog	Whiting Total by Region
IVA	- Approximation and Applicate Applications and Applicatio	611	www.manyiepidis	Technicism dilitro, dire este communicación con esta place que la constitución de la cons	852	1463
IVB	1					
IVC	53	9				3 65
VIA						adv v jijama 1 2 4 jijana
VIIA				80	289	369
VIID	103	47	7	44	63	264
VIIE						
VIIF				i u nemerikakan .		
Total by	156	667	7	.124	352 852	3 2161
			25.5		RECIONS	
SAMPLING	DATA FOR	COD			833	

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	ngg n Ta _{gan} n a	139	18368	1196
VIA		48	7426	606
IV		380	68892	2580
VIIA		89	16204	1602
VIIB		1	60	20
VIIF		13	1857	281
VIIG "		2	427	38

SAMPLING DATA FOR PLATOR

Area	Seaso	n	Mun	mber of	3-mples	Number o	of Fish	n garagan a shikin na kalan n
	Simonophiows			search ssels	Market Samples	Measured	L Aged	Racial Invest.
I	Sprea the v	d throughout			13	2914	11	MARKET STEEL S
VA	**	192 E.S. 100	2		50	8596	388	
VB	24				2	110	_	
IV					395	83698	3961	
MIIA	***	my 5			96	19693	1945	
VIIE	***		V*		47	8257	359	
VIIF					22	5688	460	
VIIG					1	260	28	11-1
			-					

SAMPLING DATA FOR HADDOCK

Area		Season		Mumber of	Samples	Number of	Fish	1
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Research Vessels		Measured	Aged	Racial Invest.
I-IIA-I	IB	Spread the ye	throughout		246	47898	1189	The second secon
TPA		11						
VA		**			240	37485	1092	
VB		**			98	18290	98	
IA	7 4	. 19			163	25086	201	
VIA		19			30	6042	478	
VIIA	1. 4.	91			28	4283	sino-	
VIIF		11			8	1228	****	
VIIG		11			2	320		

SAMPLING DATA FOR COALFISH

Area	Season	Number of	Samples	Number of	Fish	
militagaskis iliggiri e eminggiringganggangganggangk	er op de skale fan	Research Vessels	Market Samples	Measured		Racial Invest.
T-IIA-IIR	Spread throughout the year		70	7084	501	\$ 2 mills Applitude of the first feet and feet for the feet feet feet feet feet feet feet
VA	**		85	5424	876	
V3	n		58	5435	521	
V	11		52	5426	439	
JIA	"		64	6673	516	
JIIA			3	221	9	
AIIB			1	106	***	

SAMPLING DATA FOR WHITING

Area	Season	Number of	Samples	Number of	Number of Fish			
and day & Sign - Agreement - Annea good & Sign - Si		Research Vessels	Market Samples	Measured	Aged	Racial Invest.		
V3	Spread throughout the year		2	140	Element 	Geometrical configuration consists or signs on		
VI	п		183	18393	642			
VIIA	11		90	10787	1355			
VIII	ft		53	7305	357			
VIIF	97		13	1402	154	e ⁹		
VIIG	19		4	88	anten			

SAMPLING DATA FOR SOLE

Area	Season	Numb	per of Samples	Number o	Number of Fish			
тичнетати		Rese	earch Market sels Samples	Measured	Aged	Racial Invest.		
IV	Spread the	roughout	142	15476	753			
VIIA				9715	434			
VIIE	**		59	11645	253			
VIIF	**		4	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			(And the collection of the collection)
		HAR VIEW				5.75

SAMPLING DATA FOR TURBOT

Area	Season	Number of	Samples	Number of	Fish	V 4 8
	grande V	Research Vessels	Market Samples	Measured	Aged	Racial Invest.
		-				
IV	Spread throughout the year	eri e grazi ;	109	5483	2	

SAMPLING DATA FOR HAKE

Area	Season	Number of Samples	Number of Fish
		Research Market Vessels Samples	Measured Aged Racial Invest.
IV	Spread throughout the year	10	1996 -
VIA	T	36	8190 -
VIIA	97	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.			
THE RESIDENCE AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRES	というないというない とうない 日本のできない はない はない はない はない はない はない はない はない はない は	Annual Management of the Party		alle de de la faire de la fair	AND ASSESSED AND ASSESSED.	St. State of the S			
IV		8	40	6602	898				
VIA	2 2 2 2 2 2		41	3830	71				
				e e e		D			

SAMPLING DATA FOR RAYS

Amon	Season	Number of	Samples	Number of	Fish	
Area		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
Management of the same of the	in material productive and the second	And the state of t	manufacture of the second			1
VIA			31	1901	waysh-	
VIIA		s 9	77	10073	897	
VIIF			35	4032	290	1275 42
				1 - 1		

SAMPLING DATA FOR SANDERLS

Area	Season	Number of	Samples	Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest.
IV3	April-June	1	5	1319	396	
	July-Sent	******	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. O-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 <u>Gilquinia</u> and <u>Anisakis</u> 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 <u>Grillotia</u> as a biological tag. The numbers of fish measured and aged in <u>1973</u> are shown in the attached tables.

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kii	√ged	933	324-	2 62	1 1		_8	Λ.					
T. esmarkii	Measured	4.836 74.420	1 119	16. 425					i vale Stall m W med	in in		Tarres Line A Post	
o)	Aged			Yer	1 1-	+ 1			a sala B sela B de l			inota Gora Maria Gradi	inter de porto en 14 de 14 de la composição
Hake	Measured	79 715 19+ 03 275	3 985			en e					"G	099	902
	Aged	7.024	3.231	2 563	+ 1	and the second s				legrim	d Aged	~	
Saithe	Measured	689	981	751	+ 1	023				ė.	Measured	7 365	2.252
		2,	φ 	7 7		E				le	Aged	914 1	7.67
Whiting	Aged	16 905	7 188	1 694					TFTSH	Lemon Sol	Mossurea	61.5	255
idu	Measured	67 081	41 843	5.532	1 1	1 1			B. FLA			829 55	.35
		19 557	74.7 652	534	1 236	170				1.00	Aged	, © 1	
Haddock	Aged	54	<u> </u>	-t =		2	Data	ช ชา		Plaice	leasured	71.2 802	16, 1
Had	Measured	148 670 64 529	40 988	22 050 17 652	3 489	5 056	Market Sampling Data	n 100		And the second s	- T	1.00	
And Charles described the Property of the Prop	Aged	13 536	3 685	042	1 1	8 8	Market S	Less the		to the second se	игеа	ΔĪ	<u> </u>
	Measured	1)24 740	1) 8 880 2) 120	1) 5 756	1) 1 767	1) 931	tion open by have retained to want for an interpretable forces	(V) +					
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atik velkomiko navjivjelek velkomi	r E	Aged	2 660
	Lagari	Measured	7.365 2.252 4. 346
	ole	Aged	24.5
FLATFISH	Lemon Sole	Moasured	25 645 2 255 4 17 256 1 484
n	0	Aged	1839
irg Data Sel data O	21.ai.ce	leasured	1)12 802
Market Sompling Data Research vessel data Less than 100	The section of the se	11.63 11.63	AI.
00			

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

Dempillis dava	A		<u> </u>		
		No. of	Samples	No. of	Fish
Area Species	Season	Research Vessels	Market Samples	Measured	Aged
REDFISH	1	6		9 468	
I	1 2 3 4	4	propie	9 234 296 1 185	
IIb	1 2 3 4	1 2 4	years parts made	8 500 8 911 32 418 12 108	menter errore errore
Va	1 2 3 4	2	-	100 7 643 24 -	erase Sent Sene Sene
GREENLAND HALIBUT I	1. 2 3	Seema anno anno anno anno	ANTE	1 524 748 41 89	and
IIb	1 2 3 4	2 - 3 -		1 087 497 3 375 345	492
V 8	2 3	1	gene Sprin	5 549 948	300 300

Sampling Data

Sampling Dat	and the second s	No. of Samples		No. of Fish	
Area Species	Season	Research Vessels	Market Samples	Measured	Aged
COD I	1 2 3 4	21 33 16 13	175 186 177	94 985 159 994 74 570 29 454	2 570 6 232 2 709 2 776
IIb	2 3 4	- 16 6	1000 1000 1000 1000	666 2 113 77 605 16 339	2 364 1 099
HADDOCK I	1 2 3 4 1 2 3 4	14 34 16 7	erri con con con con con con con con con con	50 545 116 115 31 691 15 982 38 181 7 509 1 006	2 377 6 355 2 305 900 - 1 322
IV	1	gene		1 321	
AMERICAN PLAICE I	1 2 3 4 1 2	7 8	999 999	29 977 5 782 4 035 137 724	191 497 -
IIb	3 4	prints	p-100	1 263	many pages
SAITHE	1 2 3 4 1 2 3 4	4	propt sorte so	41 359 7 - 8 776 569	696
IA	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 (Atlantino). 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 haldock, 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 meas from fishing trawls (specimens)	urements small mesh cover (specimens)	Age determi- nation (specimens)	Tagging (external hydrostatic tags)	Otoliths weighed
Haddock Saithe Whiting Norway Pout Gadoid Fish	191 871 78 066 63 151 34 540 28 350	43 603 53 19 949 1 970	824 1 948 1 200 1 350 350	3 900 800	1 137
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.

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