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SUBAREAS 1-4

A. Status of the Fisheries

Although it increased from 9 500 hours in 1971 to 24 100 hours in 1972, the level of the UK fishing effort was still much below that in 1968 and earlier years. Freezers accounted for 23 200 hours and wet-fishers the remaining 900 hours.

Total catches of cod were 10 900 tons, 5 100 more than in 1971. 60% was from Subarea 3, nearly 25% from Subarea 2 and the remainder from Subareas 4 and 1.

HOURS FISHING, NUMBER OF ARRIVALS AND LANDINGS
OF COD FROM THE NORTH-WEST ATLANTIC

	ICNAF Subareas				Total
	1	2	3	4	
	<u>Landings (statute tons)</u>				
1971	1 993	-	3 799	-	5 792
1972	694	2 555	6 687	968	10 904
	<u>Hours fished</u>				
1971	3 154	-	6 356	-	9 510
1972	1 843	6 921	13 908	1 399	24 071
	<u>Number of arrivals</u>				
1971	23	-	13	-	36
1972	17	23	35	10	85

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B. Special Research Studies

I Environmental Studies

Hydrographic studies

Subarea 1

Between 2 and 11 December 1972 RV CIROLANA worked five hydrographic sections off the west coast of Greenland at Cape Farewell, Cape Desolation, Noname Bank, Danas Bank and Fyllas Bank, the first and last being worked in cooperation with the FRG's RV ANTON DOHRN. The hydrographic data are being coordinated with those of the other vessels by Frede Herman, and will appear under the Danish Research Report.

Subarea 3

As part of a cooperative investigation of the Gulf Stream system south of Grand Bank by the Woods Hole Oceanographic Institute, the Bedford Institute of Oceanography and the Fisheries Laboratory, Lowestoft RV CIROLANA carried out a hydrographic survey of the area south of Flemish Cap and east of Grand Bank between 17 April and 1 May 1972. Temperature, salinity, oxygen and silicate were sampled on two sections extending in a south-easterly direction from the edge of Grand Bank to approximately 41°W. A third section, across the Labrador Current between Flemish Cap and Grand Bank, also included three recording current meter rigs. Details of these observations are given in the paper by H. W. Hill, P. G. W. Jones, J. W. Ramster and A. R. Folkard presented to this meeting.

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II Biological Studies

Cod

Serological studies to assist quantitative estimates of the link between cod at Greenland and at Iceland were carried out by RV CIROLANA in the West Greenland area between 9 and 12 March 1972.

Between 29 November and 10 December RV CIROLANA carried out a Groundfish Survey at West Greenland, working in company with RV ANTON DOHRN during the latter part of the period.

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Salmon

UK scientists participated in the International Salmon Tagging Experiment which was conducted in West Greenland during August, September and October 1972 and they collaborated with scientists from Canada, Faroes, France, Denmark, Iceland and Norway. Eight scientists from the DAFS Fisheries Laboratories (Pitlochry and Aberdeen) and one scientist from Iceland, on board RV SCOTIA, were in Greenland during August and two scientists from MAFF (London) joined RV ADOLF JENSEN and one of the commercial vessels later in the period.

A total of 2 364 salmon was tagged during this experiment; 1 553 by observers working on commercial vessels and 811 by scientists on research vessels from Canada, Denmark, France and Scotland. Up to 10 January 1973, 124 recaptures, all from Greenland waters, had been recorded. A total of 127 tagged fish was released from the SCOTIA and 333 from the ADOLF JENSEN.

Blood samples were taken from part of the research vessel catch unsuitable for tagging.

Eleven of the 105 salmon tagged in 1971 have been recaptured. Two of these were recaptured in Greenland within about a month of tagging and the remaining nine were recaptured during 1972, four in Canada, two in Ireland, two in England and one in the River Sella in northern Spain.

Up to the end of December 1972, 105 recaptures have been recorded at West Greenland from wild smolts tagged in UK rivers in 1971 as well as 10 recaptures from smolts reared in hatcheries in the UK.

Smolts were again tagged during the spring of 1972. In England and Wales the total tagged was 13 126 (1 780 wild and 11 346 hatchery-reared) and the corresponding figure for Scotland was 32 951 (19 883 wild and 13 068 hatchery-reared).

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SUBAREAS 1-5

Special Research Studies

Plankton Studies

The survey with Continuous Plankton Recorders operated from the Oceanographic Laboratory, Edinburgh was continued in 1972 on the same basis as in other years. The survey was financed by the UK Natural Environment Research Council.

Recorders are towed at a depth of 10 metres, at monthly intervals, along standard routes by cutters of the US Coast Guard and by merchant ships from Denmark, Iceland and the United Kingdom. Recorders towed by the Coast Guard Cutters are now maintained and managed by the US National Marine Fisheries Service at Narragansett. During 1972 recorders sampled for 2 500 miles in Subarea 1, 4 500 miles in Subarea 2, 12 400 miles in Subarea 3, 2 800 miles in Subarea 4 and 500 miles in Subarea 5. This sampling forms part of the laboratory's standard survey of the North Atlantic and the North Sea.

The data processing of the results from the survey is fully automated (Colebrook, Bull. mar. Ecol., in press). The survey area is divided into statistical rectangles, each 2° of longitude by 1° of latitude, which are then grouped into a system of standard areas (see Annual Report of the Scottish Marine Biological Association for 1970-71) and also the ICNAF Subareas. The monthly distributions of all species, or groups of species, are plotted as mean numbers per statistical rectangle, standard area and ICNAF Subarea. At the end of every year the annual and seasonal fluctuations in abundance of each entity are calculated for each standard area in the North Sea and north-eastern Atlantic for the period 1948 onwards and for each standard area and ICNAF Subarea in the western Atlantic from 1962 onwards; routine statistical analyses, such as Principal Component Analysis, are then carried out. Further details may be obtained on application to the Director, Institute for Marine Environmental Research, Oceanographic Laboratory, 78 Craighall Road, Edinburgh EH6 4RQ.

In 1972, the spring outbreak of phytoplankton was slightly late in Subarea 2 and both the oceanic and Grand Bank regions of Subarea 3. Diatoms were much above average in April in the oceanic regions, but scarce until July and August when numbers were high again. Thalassiothrix longissima was abundant earlier than usual (in March) over the Grand Banks, but otherwise was scarce, while numbers of Thalassiosira spp. and Phaeoceros spp., two dominant spring species, were above average in the oceanic region but below average in the coastal regions.

Copepods were also slightly late in the oceanic section of Subarea 3 with low numbers in April, but thereafter numbers were about average; they were less abundant than usual over the Grand Banks. Numbers of adult Calanus finmarchicus were above average in the oceanic parts of Subareas 1, 2 and 3 in March and from May to August, but lower than usual in the coastal regions. Euphausiids were less abundant than the long-term mean in Subarea 2, but, like Calanus finmarchicus, were extremely abundant in the oceanic parts of Subarea 3 in all months from March to August except April. They were also common in the coastal regions of Subareas 3 and 4 in March and July.

As in 1971, numbers of the larvae of Sebastes spp. were low in all areas. The non-pigmented variety was present in Subareas 1 and 3 from June to August and Subarea 2 in August only. No specimens of the pigmented variety were found.

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