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Report on the International Trawling Survey  
for Immature Herring in the North Sea 1971

by

K. H. Postuma and K. Kuiter<sup>x)</sup>

x)

Netherlands Institute for  
Fisheries Investigations  
Haringkad 1  
IJmuiden  
Netherlands

REPORT ON THE INTERNATIONAL TRAWLING SURVEY FOR IMMATURE HERRING  
IN THE NORTH SEA 1971.

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By K.H. Postuma and K. Kuiten.

Introduction.

Trawling surveys for young herring in the North Sea under the auspices of I.C.E.S. were carried out in spring of the years 1960 and 1961 and during the period 1966-1970. The results of the 1960 and 1961 surveys were reported by the Working Group on Young Herring Surveys in 1968 whereas the results of the 1966-1970 surveys were reported on an annual basis to the Pelagic Fish (Northern) Committee by various authors. The Pelagic Fish (Northern) Committee decided during the Council meeting in Copenhagen (1970) to continue these surveys in February 1971.

Planning and Procedure.

The planning of the 1971 survey was done in Ymuiden. The routine procedure adopted for the preceding surveys was followed again for the 1971 survey, with the exception of a echosounding survey by "G.O. Sars". The cruise schedule of the participating ships was:

<u>Country:</u>	<u>Ship:</u> -----	<u>Period:</u> -----
Denmark	Dana	12 March - 21 March
England	Clione	27 March - 2 April
Germany	Anton Dhorn	28 January - 16 February
Holland	Tridens	15 February - 5 March
Norway	G.O. Sars	1 February - 15 February
Scotland	Explorer	5 February - 25 February
U.S.S.R.	Viandra	15 February - 15 March

The survey was completed in a period of two months, "Explorer" fished the N.W. area, "Dana" worked the eastern part and "Viandra" the northern part of the survey area. "Anton Dhorn" and "Tridens" covered the central part and "Clione" fished the stations in the southwest.

Results.

The area between 51°N and 59°N in the North and the Skagerrak was covered almost entirely with a total of 190 hauls in 106 squares. The distribution of the year-class 1969 autumn spawning herring is shown in fig. 1 as the mean numbers per hour fishing in the squares fished.

As in the 1970 survey the greatest abundance was found in the south-east of the survey area off the Dutch and Danish coast.

Off the Scottish coast and in the Moray Firth a second less extensive and dense concentration was found.

The mean abundance of year-class 1969 (table 1 and 2) seems to be rather high. The mean length (15.27 cm), however, is one of the lowest in the series of length data of I group fish recorded in the young herring surveys.

#### The echosurvey

An echosurvey was carried out in the region around the Doggersbank by "G.O. Sars". The results of this survey are described and discussed in the Report of the Working Group on Young Herring Surveys in the North Sea (paper H:4/G.M. 1971)

#### Discussion.

The low mean length and the distribution pattern of the I group herring (year-class 1969) could indicate a high proportion of young herring originating from spawning populations in the southern North Sea and the Channel. This view-point is strengthened by the following observations.

During the herring larvae surveys (in December 1969 - January 1970) the larvae production on the spawning places in the English Channel was found to be very high.

In March - April 1970 very high numbers <sup>of</sup> herring larvae, originating from an extensive larvae patch drifting along the Dutch coast, were observed immigrating the Dutch estuaries.

As apparent from table 1 and 2 the abundance of the 1969 year-class seems to be of the same order as the abundance of the 1958 year-class. The 1958 year-class produced a good recruitment to the different populations spawning in the southern North Sea and the English Channel. From the 1971 survey one would therefore expect the 1969 year-class to be good for the southern North Sea spawning-populations and the 1972 prospects for the fisheries based on these populations to be fair.

#### References:

- K. Schubert - 1970 - Report on the International Trawling Survey for immature Herring in the North Sea. 1970 I.C.E.S.. Doc. C.M. 1970/H : 13 (mimeo).

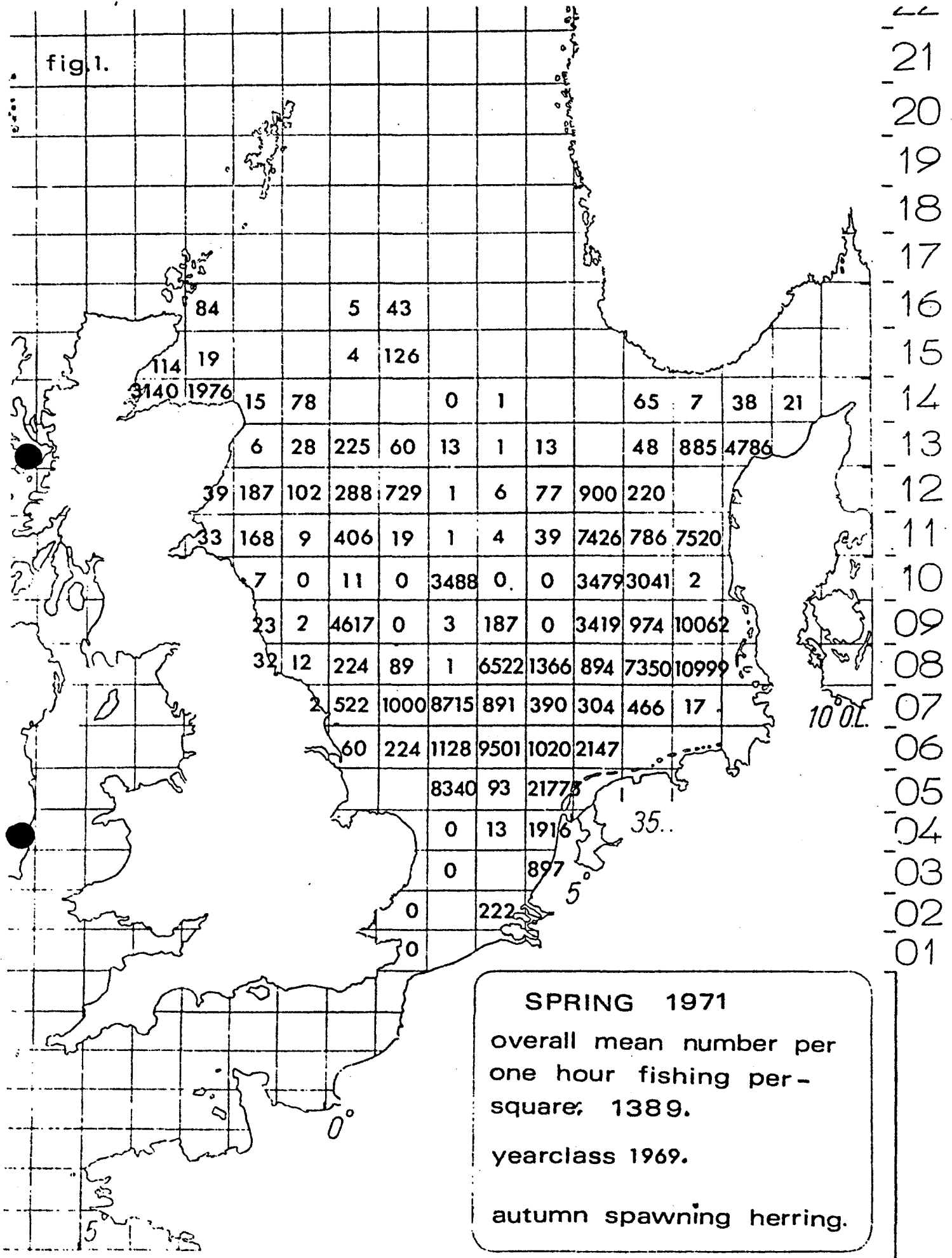
Table 1. Mean abundance, and mean length of herring year-classes as I group in the North Sea and Skagerrak between 52° and 58° N.

yearclass	catch/hours	VS.	$\bar{L}_1$
1958	1230	56.42	16.05
1959	337	56.45	16.05
1963	2797	56.44	14.90
1964	714	56.49	16.73
1965	238	56.49	17.13
1966	273	56.48	16.83
1967	455	56.51	17.32
1968	487	56.50	15.70
1969	1389	56.46	15.27

Table 2. Catch per hour per statistical rectangle in numbers of I and II group herring in the North Sea in spring

year / yearclass	1957	1958	1959	1962	1963	1964	1965	1966	1967	1968	1969
1960	222	1230									
1961		167	337								
1965				28	2797						
1966					184	714					
1967						56	238				
1968							10	279			
1969								45	445		
1970									48	487	
1971										82	1389

fig. 1.



**SPRING 1971**  
 overall mean number per  
 one hour fishing per-  
 square: 1389.  
 yearclass 1969.  
 autumn spawning herring.