INTERNATIONAL COUNCIL FOR THE
EXPLORATION OF THE SEA

C.M. 1977/H: 12
Pelagic Fish (Northern) Committee

REPORT ON THE ICES YOUNG HERRING SURVEY IN THE NORTH SEA IN 1977

by
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1. Purpose and scope of the ICES Young Herring Surveys

The ICES Young Herring Surveys are aimed at obtaining estimates of year-class strength of I-group herring (1.5 year old) in the North Sea and Skagerak. These estimates are required by the Herring Assessment Working Group in order to advise TAC's for the herring in these areas. The I-group herring will recruit to the adult stock in the summer of the following year.

The abundance of I-group herring is estimated by means of a bottom trawling survey which covers most of the North Sea, Skagerak and Kattegat. The surveys were first made in 1960 and 1961. After a break of 3 years they were resumed in 1965, after which they have been continued without interruption until the present. The surveys are always held in the month of February. The number of participating countries has gradually increased, and at present 8 different countries cooperate in the programme.

Results from the surveys have been reported annually to the ICES Statutory Meeting. In addition to these reports, the Working Group on North Sea Young Herring Surveys has evaluated the results and discussed the survey methods on a number of occasions (ICES 1974, 1975, 1977a).

In addition to information on I-group herring, the surveys also yield data on the distribution and abundance of 0-group herring (larvae of 0.5 years old), juvenile gadoids, mackerel, sprat and also on hydrography. Data on hydrography and other species than herring are presented to the ICES Statutory Meeting in separate reports.

2. Participation in the 1977 survey.

Country	Ship	Period
Denmark	Dana	1 Feb - 4 Mar
France	La Perle	6 - 22 Feb
Germany (Fed. Rep.)	Anton Dohrn	20 Jan - 18 Feb
Norway	Johan Hjort	9 Feb - 5 Mar
The Netherlands	Tridens	7 Feb - 4 Mar
Sweden	Argos	7 - 22 Feb
United Kingdom	Cirolana	4 Feb - 3 Mar
United Kingdom	Explorer	8 Feb - 2 Mar
U.S.S.R.	Aliot	20 Jan - 10 Feb

3. Fishing gear and methods

Sampling for juvenile herring was concentrated in a standard area of 53 statistical squares, as defined in a previous report of the Working Group on North Sea Young Herring Surveys (ICES 1974). The squares within this standard area have been divided into 3 different strata according to fish density during past surveys. Each square was to be sampled by 2, 6 or 12 hauls, depending on the stratum to which it belonged. Hauls in the

herring standard area should be made only during daytime; i.e. between 15 minutes before sunrise and 15 minutes after sunset.

In addition to the herring standard area, a large number of squares in other parts of the North Sea were sampled for juvenile gadoids. Hauls in these "gadoid squares" were made both during daytime and at night.

Trawl sets were made at random positions within the allocated squares, without using acoustic information on fish distribution. Recommended trawling time was 1 hour, but some countries made hauls of 1/2 hour duration in order to increase the number of hauls per day.

Because the decision on the choice of a standard trawl was postponed until the Working Group Meeting in May 1977, there was no uniformity of fishing gear during the survey in February. Most countries used the same nets that they employed during the previous surveys (Corten, 1976). The Netherlands utilized a High Opening Bottom Trawl (HOBT). This net is known to catch more herring than the 73 ft herring trawl that was used previously. The French vessel used a semi-pelagic trawl with shortened wings, which was assumed to catch less herring than the GOV trawl that was used in the previous year. The English "Cirolana" had very [illegible] with its herring trawl in the beginning of the cruise. After the rigging of the net had been slightly altered about halfway during the cruise, the catches were comparable to those of other ships in the same area. It is assumed that the lower fishing power of the French and English vessel has been compensated for by the higher fishing power of the Dutch vessel, and that the average fishing power of all vessels was comparable to previous years.

Callibration of gear and methods.

In allocating trawl stations to the various countries, the participating vessels were grouped in pairs, and the two vessels in each pair would get an identical set of trawl stations. In this way, the relative fishing power of the two countries in each pair could be compared, even if the ships did not fish in the same squares simultaneously. The Dutch and French vessel worked side by side for most of the survey, in order to obtain comparative data on two gears that had been proposed as a standard gear for these surveys. The results of these comparative fishing experiments have been used by the Working Group during its meeting in May (ICES 1977a).

During the weekend of 12-13 February a meeting of several participating vessels was arranged in the port of Esbjerg. This provided a good opportunity to compare fishing gears used by the various countries, and to discuss technical problems arising from the work at sea. Following the meeting in Esbjerg, one day was spent in a demonstration at sea of the various trawls that had been proposed as a standard gear for the survey.

4. Results of the trawl survey.

A total number of 331 valid herring hauls (i.e. hauls made during daytime and without gear damage) were made, out of

which 215 were made within the herring standard area. A list of valid tows, giving the number of I-group per hour and their mean length, is given in Appendix I. The mean numbers of I-group herring per square are presented in figure 1. Catches of I-group herring were extremely low in most regions of the North Sea, just like in the previous year. The main concentration was found in the German Bight, north of the Dutch Wadden Islands. The usual concentration of juvenile herring near the entrance of the Skagerak was far less pronounced than in other years. Very few herring were encountered in the central and western part of the North Sea.

In the herring standard area of 53 sqaures, only 1 square had not been sampled (34F2). To compensate for the missed sampling in this square, a correction was applied (correction factor taken from ICES 1974, correction formula taken from ICES 1977a) The corrected mean value for the standard area of 53 squares is 326 fish/hour.

In the most recent report of the Working Group (ICES 1977a), the standard area has been increased by 4 squares in the German Bight. This results in a new standard area of 57 squares. Out of these 57 squares, a total of 55 was sampled during the 1977 survey. The corrected mean value for the standard area of 57 squares was 342 fish/hour (correction factor for the two missing squares taken from ICES 1977a).

Table I gives the mean abundance indices for the standard area of 57 squares for all Young Herring Surveys starting from 1960. It is evident that the abundance of juvenile herring during the 1977 survey was the lowest but one on record.

Precision of the survey estimate

In order to calculate the precision of the survey estimate, the individual hauls were grouped by stratum as described in ICES 1975. For each stratum, the mean and the variance of the mean were calculated. Next, the stratified mean and its variance were calculated:

stratum	1	2	3
number of squares	35	12	6
number of hauls	75	69	73
stratum mean	293	432	432
stratum variance	953773	1633325	554608
variance stratum mean	13065	23671	7597

stratified mean	340
variance stratified mean	7009
standard error stratified mean	83.72
90 % confidence limits	$340 \pm 1.65 \times 83.72 = 340 \pm 138$

The stratified mean calculated according to this procedure is slightly different from the one that is obtained by taking the mean from all squares (see above) and the latter is taken as the most accurate estimate. However, the 90 % confidence limits calculated here will give an indication of the precision that

can be ascribed to both estimates of the mean abundance.

5. Results of the Isaacs-Kidd net survey.

Several countries employed Isaac-Kidd nets to sample 0-group herring (big larvae) during the 1977 Young Herring Survey. The exact construction of the net and the fishing method were described by the Working Group on North Sea Herring Larval Surveys (ICES 1977b). In this report the results are presented of the sampling conducted by Sweden, The Netherlands, England, Scotland and Norway (figure 5). The results from the German sampling were not yet available at the time of writing this report. It should be noted that England did not use the standard Isaac-Kidd net but the Boothbay net which they also employed during previous surveys.

In addition to the work carried out during the YHS in February 1977, The Netherlands made two IKMT-surveys in December 1976 and January 1977. These results are presented in figure 3 and 4.

The distribution pattern that emerges from the surveys in December, January and February shows that main concentrations of larvae occurred in the northwestern North Sea. This was rather a surprise as most sampling effort had been directed towards the southwestern North Sea (at least in February). In fact, very few larvae were found in the eastern North Sea and the Skagerak.

It is difficult to indicate the place of origin of the larvae found in the northwestern North Sea. It is unlikely that these larvae originated from the Orkney/Shetland area, because in that case they should have been transported much further away from their place of birth after 3 months. It seems more reasonable to assume that these larvae were born near the Hebrides, then were transported northward, and finally entered into the North Sea between the Orkneys and Shetland Islands.

The question remains, however,where the larvae from the Orkneys and Shetlands have gone. In normal years they should have reached the entrance of the Skagerak by February, but they were almost completely absent from this region in February 1977.

Larval densities in the southern North Sea were very low, and this would indicate that very few larvae survived from the spawning in the Flamborough/Whitby area and the English Channel.

6. References.

Corten, A., 1976 — Report on the ICES Young Herring Survey in the North Sea in 1976. ICES CM 1976/H : 11.

ICES, 1974 — Report of the Working Group on North Sea Young Herring Surveys. ICES CM 1974/H : 6.

ICES, 1975 — Report of the Working Group on North Sea Young Herring Surveys. ICES CM 1975/H : 9.

ICES, 1977a. — Report of the Working Group on North Sea Young Herring Surveys. ICES CM 1977/H :

ICES, 1977b — Report of the Working Group on North Sea Herring Larval Surveys. ICES Coop. Res. Rep. No. 68.

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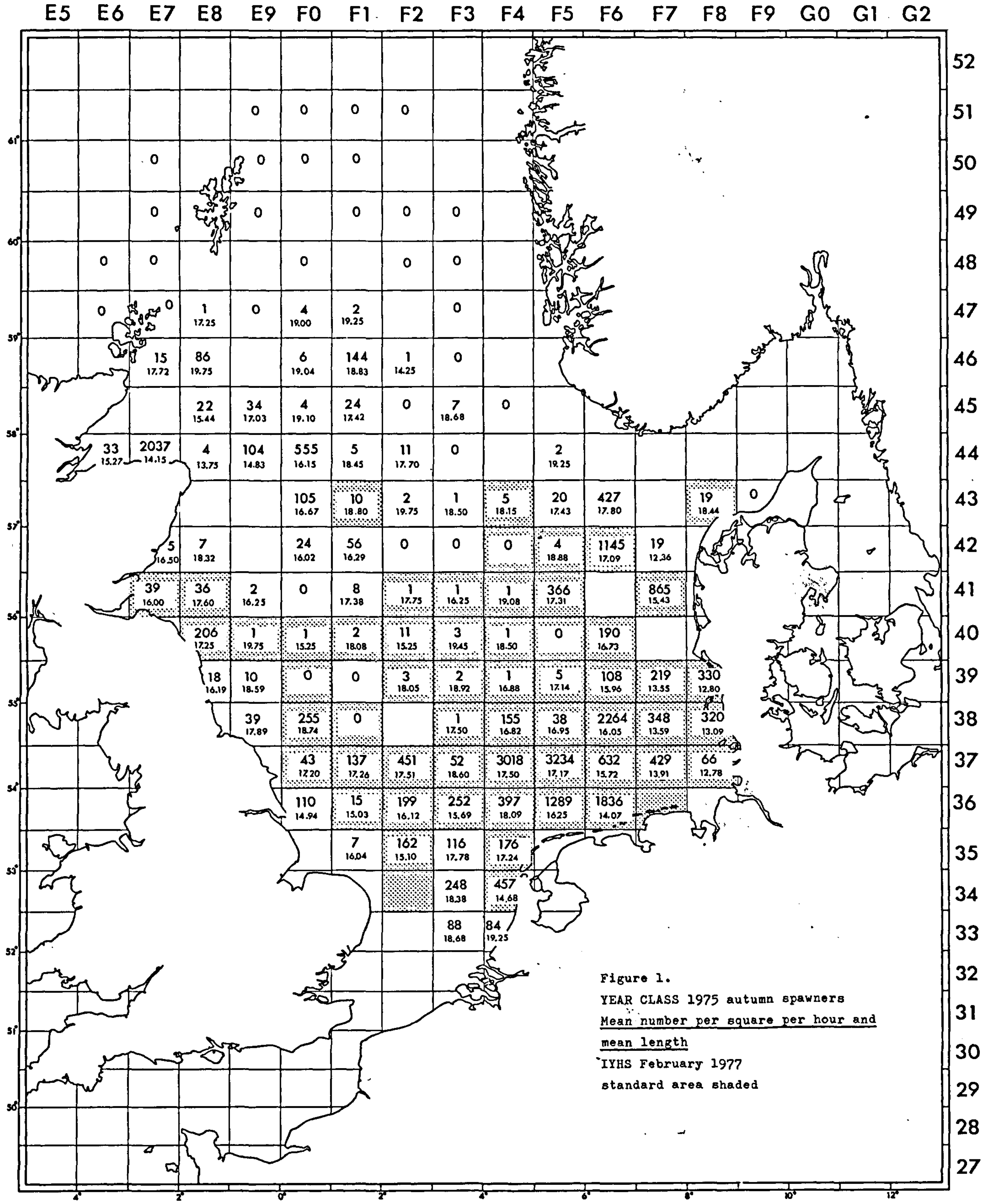

Figure 1.
YEAR CLASS 1975 autumn spawners
Mean number per square per hour and mean length
IYHS February 1977
standard area shaded

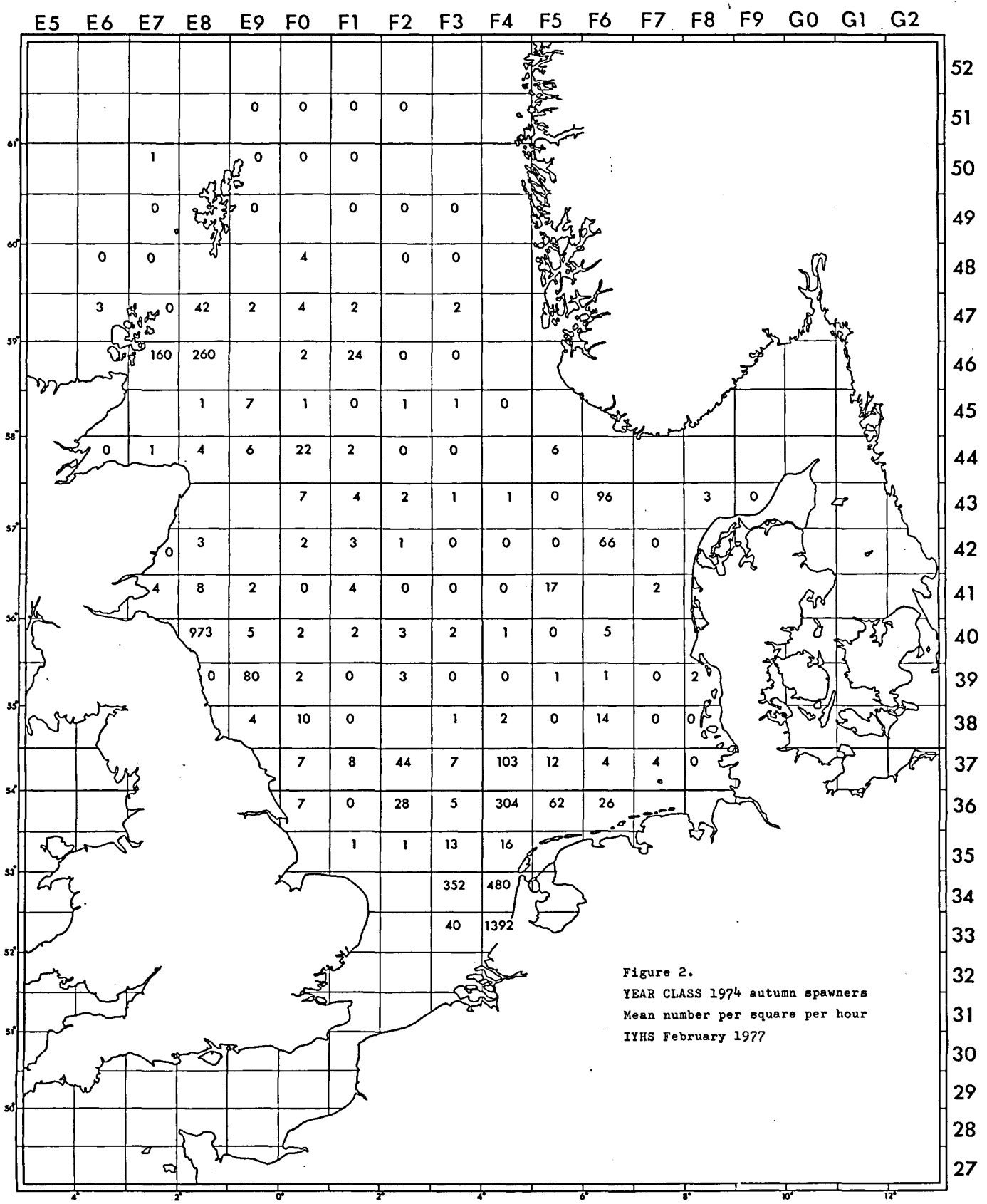

Figure 2.
YEAR CLASS 1974 autumn spawners
Mean number per square per hour
IYHS February 1977

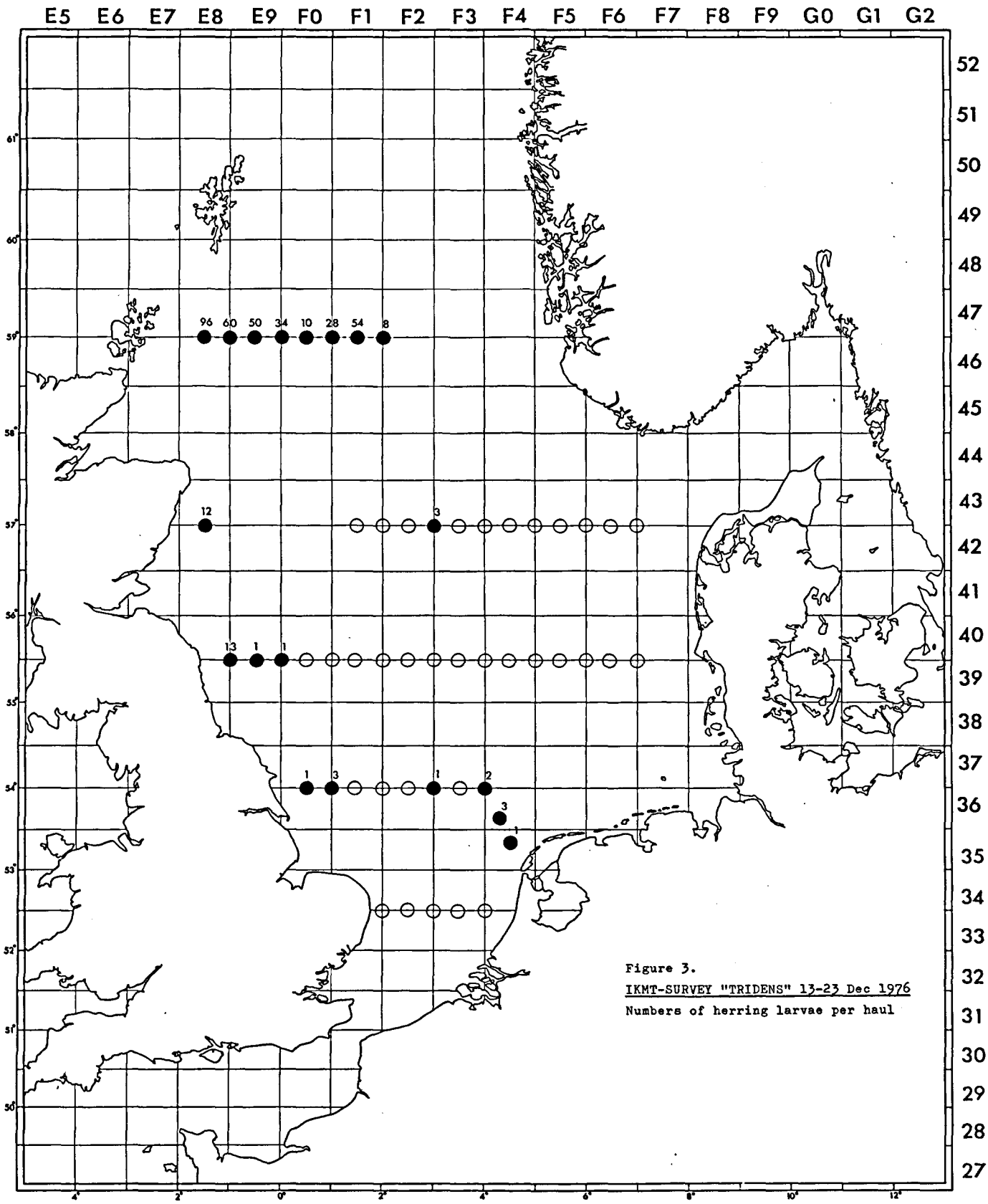

Figure 3.
IKMT-SURVEY "TRIDENS" 13-23 Dec 1976
Numbers of herring larvae per haul

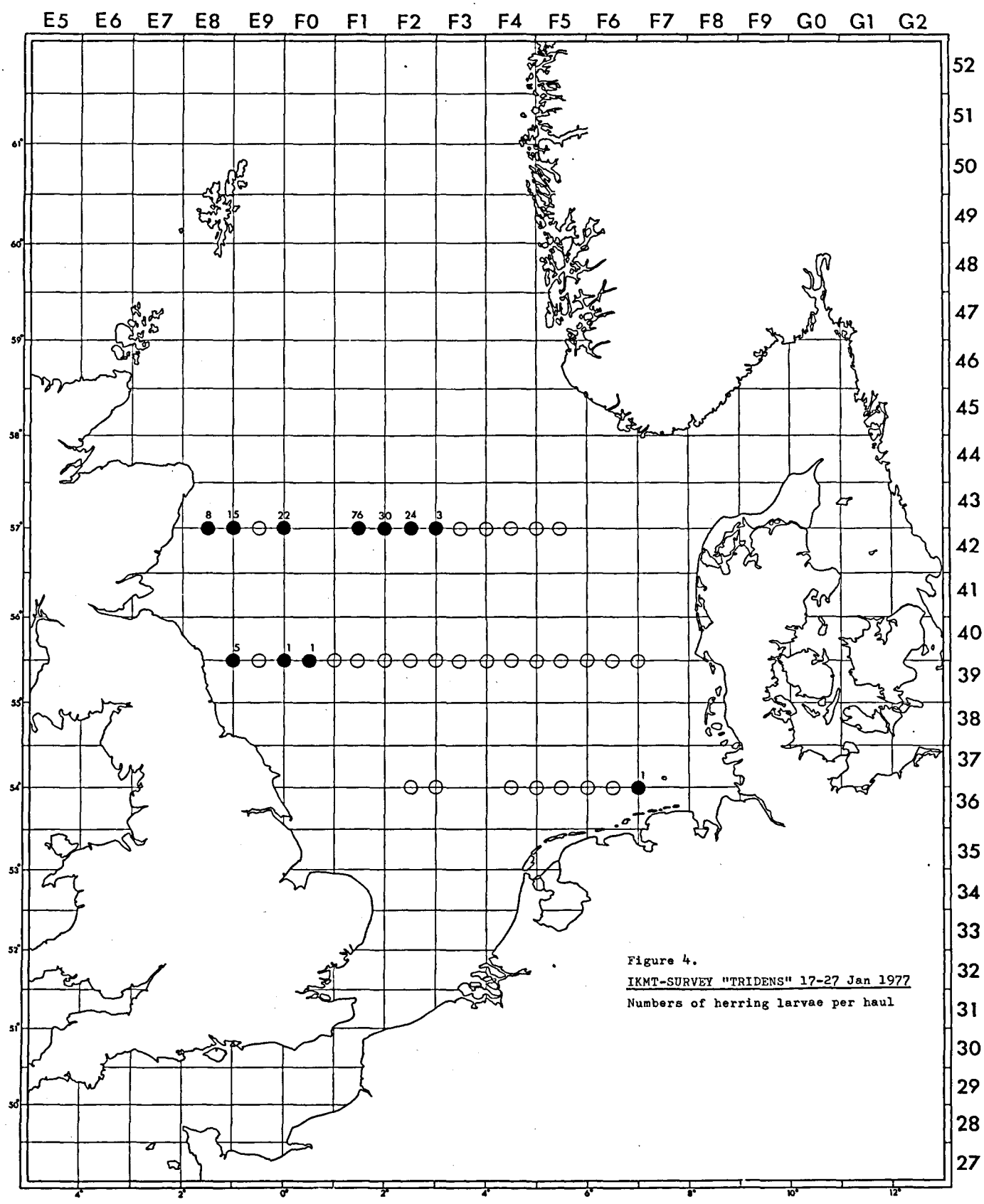

Figure 4.

IKMT-SURVEY "TRIDENS" 17-27 Jan 1977

Numbers of herring larvae per haul

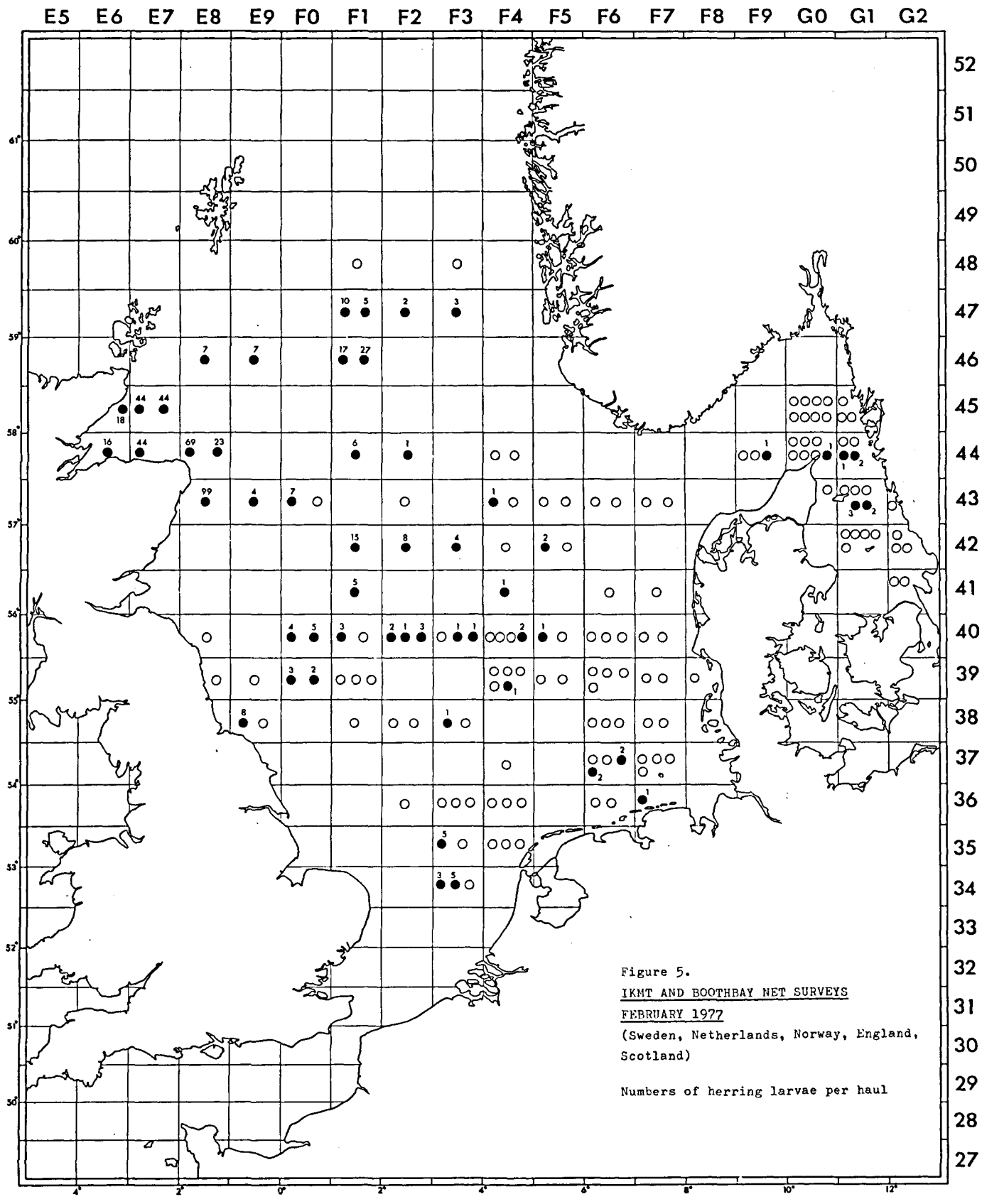

Figure 5.
IKMT AND BOOTHBAY NET SURVEYS
FEBRUARY 1977
(Sweden, Netherlands, Norway, England, Scotland)

Numbers of herring larvae per haul

TABLE I - Abundance indices of I-group herring during 1977 and previous years for standard area of 57 squares. Abundance in no's/hour, corrected for incomplete sampling of standard area.

Survey year	Year-class	No's/hour
1960	1958	2421
1961	1959	648
1965	1963	3328')
1966	1964	704')
1967	1965	415')
1968	1966	399')
1969	1967	296')
1970	1968	822
1971	1969	2647
1972	1970	1629
1973	1971	827
1974	1972	1195
1975	1973	1592
1976	1974	452
1977	1975	342

') Considered to be inaccurate.

PPENDIX 1 - List of valid herring hauls.

Square	Stratum	Country	I-group per hour	Mean length
33F3	-	FRA	88	16.7
33F4	-	NET	84	19.3
34F3	-	"	248	18.4
34F4	3	"	94	15.5
"	"	"	66	15.0
"	"	"	456	15.2
"	"	"	324	16.3
"	"	"	2400	14.2
"	"	"	64	18.6
"	"	FRA	1484	14.4
"	"	"	98	14.6
"	"	"	36	15.9
"	"	"	62	15.3
"	"	"	220	15.1
"	"	"	176	15.9
35F1	-	ENG	7	16.0
35F2	1	"	157	14.4
"	"	DEN	166	15.8
35F3	-	ENG	116	17.8
35F4	2	NET	781	17.3
"	"	"	15	17.3
"	"	"	9	16.7
"	"	FRA	215	17.0
"	"	"	22	17.3
"	"	"	14	17.2
36F0	-	ENG	97	15.3
"	-	"	123	14.6
36F1	1	"	4	15.1
"	"	DEN	26	15.0
36F2	"	ENG	2	16.3
"	"	"	4	16.8
"	"	DEN	590	16.1
36F3	3	ENG	70	16.7
"	"	"	27	16.5
"	"	"	0	--
"	"	"	593	16.3
"	"	"	488	16.2
36F3	3	ENG	1123	14.7
"	"	DEN	82	16.7
"	"	"	74	16.0
"	"	"	25	16.5
"	"	"	116	16.0
"	"	"	225	15.9
"	"	"	315	16.1
"	"	NET	142	15.9
36F4	2	"	22	16.4
"	"	"	1052	18.1
"	"	"	763	18.3
"	"	FRA	58	17.0
"	"	"	292	17.9
"	"	"	193	17.9
36F5	"	GER	3524	16.3
"	"	NET	430	16.1
"	"	"	754	16.6
"	"	"	448	15.3
36F6	-	"	3312	14.0
"	-	"	360	14.9
37F0	1	USS	0	--
"	"	SCO	85	17.2
37F1	"	USS	273	17.3
"	"	NET	0	--
37F2	"	USS	434	17.6
"	"	NET	467	17.5
37F3	"	USS	96	18.7
"	"	NET	8	16.9
37F4	"	"	4816	17.5
"	"	FRA	1220	17.5
37F5	2	GER	434	16.0
"	"	NET	1224	17.4
"	"	"	1420	16.2
"	"	"	9856	17.3
37F6	"	NOR	1650	15.6
"	"	GER	508	15.9
"	"	"	632	15.9

Square	Stratum	Country	I-group per hour	Mean length
37F6	2	ENG	1	16.3
"	"	"	26	14.6
"	"	NET	976	15.8
37F7	3	NOR	24	12.6
"	"	"	4	13.8
"	"	"	952	15.0
"	"	GER	33	14.8
"	"	"	262	13.8
"	"	"	513	15.8
"	"	ENG	2	13.8
"	"	"	31	14.9
"	"	"	66	14.8
"	"	"	41	13.3
"	"	DEN	1230	13.0
"	"	"	270	14.8
"	"	NET	2048	13.5
"	"	FRA	536	13.4
37F8	-	NET	62	12.6
"	-	FRA	70	12.9
38E9	-	SCO	39	17.9
38F0	1	USS	4	17.5
"	"	SCO	505	18.8
38F1	"	USS	0	--
"	"	NET	0	--
38F[illegible]	"	USS	2	18.3
"	"	NET	2	16.8
"	"	SCO	0	--
38F4	"	NET	280	16.8
"	"	FRA	30	17.4
38F5	"	NET	14	15.8
"	"	"	62	17.2
38F6	"	NOR	5898	16.1
"	"	GER	111	14.8
"	"	ENG	65	15.3
"	"	DEN	2981	15.9
38F7	3	NOR	86	12.5
"	"	"	70	11.9
"	"	"	210	13.0
"	"	GER	306	13.6

Square	Stratum	Country	I-group per hour	Mean length
38F7	3	GER	876	14.5
"	"	"	200	14.6
"	"	ENG	3	13.8
"	"	"	54	13.4
"	"	"	0	
"	"	"	0	
"	"	DEN	744	14.3
"	"	"	677	14.1
"	"	"	1304	12.4
38F8	-	NET	468	13.2
"	-	FRA	172	12.9
39E8	-	ENG	18	16.2
39E9	-	"	0	
"	-	GER	5	18.6
"	-	"	10	18.8
"	-	"	23	18.5
39F0	1	NOR	0	
"	"	GER	0	
39F1	-	NOR	0	
39F2	2	"	0	
"	"	"	4	16.0
"	"	"	0	
"	"	GER	8	18.8
"	"	"	3	18.9
"	"	"	0	--
39F3	1	NOR	0	
"	"	GER	3	18.9
39F4	2	USS	0	
"	"	"	3	16.3
"	"	"	0	
"	"	SCO	4	17.0
"	"	"	1	18.3
"	"	"	0	
39F5	"	USS	1	13.8
"	"	"	1	17.8
"	"	"	8	18.4
"	"	SCO	18	16.7
"	"	"	4	17.4
"	"	"	0	

Square	Stratum	Country	I-group per hour	Mean length
39F6	1	USS	80	16.0
"	"	SCO	135	15.9
39F7	2	USS	20	13.4
"	"	"	127	13.8
"	"	"	224	14.7
"	"	NET	752	13.6
"	"	"	256	12.4
"	"	FRA	498	13.5
"	"	"	180	12.6
"	"	SCO	20	13.4
"	"	"	85	14.8
"	"	"	23	15.4
39F8	-	NET	264	13.0
"	-	FRA	396	12.7
40E8	3	GER	53	18.8
"	"	ENG	0	
"	"	"	0	
"	"	"	7	17.2
"	"	"	2	17.0
"	"	DEN	227	17.4
"	"	"	1518	17.1
"	"	"	6	16.5
"	"	"	44	18.8
40E9	1	ENG	0	
"	"	DEN	2	19.8
40F0	"	NOR	2	15.3
"	"	GER	0	
40F1	"	NOR	2	17.8
"	"	GER	1	18.8
40F2	"	NOR	2	15.3
"	"	GER	20	15.3
40F3	"	NOR	0	
"	"	GER	5	19.5
40F4	"	USS	0	
"	"	SCO	2	18.5
40F5	"	USS	0	
"	"	SCO	0	
40F6	"	USS	334	16.9

Square	Stratum	Country	I-group per hour	Mean length
40F6	1	SCO	45	15.9
41E7	"	USS	26	15.1
"	"	SCO	52	16.5
41E8	"	USS	70	17.5
"	"	SCO	2	20.0
41E9	-	"	3	16.3
"	-	GER	0	
41F0	-	ENG	0	
41F1	-	DEN	8	17.4
41F2	1	ENG	0	
"	"	DEN	1	17.8
41F3	"	ENG	0	
"	"	DEN	2	16.3
41F4	2	NET	2	18.3
"	"	"	2	19.8
"	"	"	0	
"	"	FRA	0	
"	"	"	0	
"	"	"	2	19.3
41F5	"	NET	206	17.5
"	"	"	976	17.3
"	"	"	0	
"	"	FRA	42	17.6
"	"	"	971	17.3
"	"	"	0	
41F7	3	ENG	0	
"	"	"	1	17.8
"	"	"	1	14.3
"	"	"	0	
"	"	"	21	14.7
"	"	"	4	14.0
"	"	DEN	472	12.9
"	"	"	661	12.8
"	"	"	1065	14.2
"	"	"	762	13.9
"	"	"	3918	16.4
"	"	"	3470	15.9
42E7	-	USS	0	

Square	Stratum	Country	I-group per hour	Mean length
42E7	-	SCO	10	16.5
42E8	-	"	7	18.3
42F0	-	ENG	0	
"	-	DEN	48	16.0
42F1	-	"	56	16.3
42F2	-	"	0	
42F3	-	"	0	
42F4	1	ENG	0	
"	"	NET	0	
"	"	FRA	0	
42F5	"	NET	8	18.9
"	"	FRA	0	--
42F6	"	ENG	10	16.9
"	"	DEN	2280	17.1
42F7	-	ENG	8	12.1
"	-	DEN	29	12.4
43F0	-	NET	201	16.7
"	-	FRA	8	15.3
43F1	1	NET	20	18.8
"	"	FRA	0	--
43F2	-	"	2	19.8
43F3	-	NET	0	
"	-	FRA	2	17.3
"	-	GER	1	19.8
43F4	1	NOR	8	18.0
"	"	GER	2	18.8
43F5	-	NOR	40	17.4
"	-	GER	0	
43F6	-	NOR	807	17.7
"	-	GER	46	18.9
43F8	2	USS	0	
"	"	"	0	
"	"	"	58	18.4
43F9	-	"	0	
44E6	-	SCO	33	15.3
44E7	-	USS	0	
"	-	SCO	4073	14.2
44E8	-	"	4	13.8

Square	Stratum	Country	I-group per hour	Mean length
44E9	-	USS	0	
"	-	ENG	274	14.7
"	-	SCO	37	15.8
44F0	-	NET	1109	16.2
"	-	FRA	0	
44F1	-	NET	2	16.3
"	-	FRA	8	19.0
44F2	-	NET	2	18.3
"	-	FRA	20	17.7
44F3	-	NET	0	
44F5	-	NOR	2	19.3
45E8	-	SCO	44	15.4
45E9	-	USS	13	15.3
"	-	ENG	81	17.3
"	-	SCO	8	17.5
45F0	-	NOR	6	19.8
"	-	ENG	6	18.4
"	-	GER	1	19.3
45F1	-	NOR	24	17.4
45F2	-	GER	0	
45F3	-	NOR	14	18.7
"	-	GER	0	
45F4	-	NOR	0	
46E7	-	SCO	15	17.7
46E8	-	"	86	19.8
46F0	-	NOR	12	19.0
"	-	GER	0	
"	-	ENG	7	19.1
46F1	-	NOR	144	18.8
46F2	-	GER	1	14.3
46F3	-	NOR	0	
47E6	-	GER	0	
47E7	-	NOR	0	
47E8	-	"	0	
"	-	GER	1	17.3
47E9	-	NOR	0	
"	-	GER	0	
47F0	-	NET	4	19.0

Square	Stratum	Country	I-group per hour	Mean length
47F1	-	NET	2	19.3
47F3	-	"	0	
48E6	-	NOR	0	
48E7	-	"	0	
"	-	GER	0	
48F0	-	NET	0	
48F2	-	"	0	
48F3	-	"	0	
49E7	-	USS	0	
49E9	-	"	0	
"	-	NOR	0	
"	-	SCO	0	
49F1	-	GER	0	
49F2	-	NOR	1	
"	-	GER	0	
49F3	-	NOR	0	
"	-	GER	0	
50E7	-	SCO	0	
50E9	-	USS	0	
"	-	SCO	0	
50F0	-	NOR	0	
50F1	-	GER	0	
51E9	-	USS	0	
51F0	-	NOR	0	
51F1	-	"	0	
"	-	GER	0	
51F2	-	"	0	

APPENDIX 2 - List of sampling stations for herring larvae during the Young Herring Survey in February 1977.
All plankton hauls made according to standard procedure (ICES 1977b).

Square	Country	Gear	Larvae per haul	Mean length (mm)
34F3	NET	IKMT*	3	29
"	"	"	5	29
"	"	"	0	
35F3	"	"	5	32
"	"	"	0	
35F4	"	"	0	
"	"	"	0	
"	"	"	0	
36F2	ENG	BB*	0	
36F3	"	"	0	
"	NET	IKMT	0	
"	"	"	0	
36F4	"	"	0	
"	"	"	0	
"	"	"	0	
36F6	"	"	0	
"	"	"	0	
36F7	"	"	1	43
37F4	"	"	0	
37F6	NOR	"	2	33
"	"	"	2	31
"	"	"	0	
37F7	NOR	IKMT	0	
"	"	"	0	
"	"	"	0	
"	ENG	BB	0	
38E9	SCO	IKMT	8	
"	"	"	0	
38F1	NET	"	0	
38F2	"	"	0	
"	"	"	0	
38F3	"	"	0	
"	SCO	"	1	
38F6	ENG	BB	0	

Square	Country	Gear	Larvae per haul	Mean length (mm)
38F6	NOR	IKMT	0	
"	"	"	0	
38F7	"	"	0	
"	"	"	0	
39E8	ENG	BB	0	
39E9	"	"	0	
39F0	NOR	IKMT	3	30
"	"	"	2	30
39F1	"	"	0	
"	"	"	0	
"	"	"	0	
39F4	NET	"	0	
"	"	"	1	39
"	"	"	0	
"	SCO	"	0	
"	"	"	0	
39F5	SCO	"	0	
"	"	"	0	
39F6	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
39F7	NET	"	0	
"	"	"	0	
39F8	"	"	0	
40E8	ENG	BB	0	
40F0	NOR	IKMT	4	31
"	"	"	5	30
40F1	"	"	3	32
"	"	"	0	
40F2	"	"	2	31
"	"	"	1	31
"	"	"	3	18
40F3	"	"	0	
"	"	"	1	32
"	"	"	1	30

* IKM : Isaacs-Kidd Midwater Trawl
BB : Boothbay Net

Square	Country	Gear	larvae per haul	Mean length (mm)
40F4	NET	IKMT	2	32
"	"	"	0	
"	"	"	0	
"	SCO	"	0	
40F5	"	"	1	
"	"	"	0	
40F6	"	"	0	
"	"	"	0	
"	NET	"	0	
40F7	SCO	"	0	
"	"	"	0	
41F1	ENG	BB	5	
41F4	NET	IKMT	1	35
41F6	ENG	BB	0	
41F7	"	"	0	
41G2	SWE	IKMT	0	
"	"	"	0	
42F1	ENG	BB	15	
42F2	"	"	8	
42F3	"	"	4	
42F4	NET	IKMT	0	
42F5	"	"	2	37
"	"	"	0	
42G1	SWE	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
42G2	"	"	0	
"	"	"	0	
"	"	"	0	
43E8	SCO	"	99	
43E9	NET	"	4	29
43F0	"	"	7	31
"	"	"	0	
43F2	"	"	0	

Square	Country	Gear	larvae per haul	Mean length (mm)
43F4	NOR	IKMT	1	29
"	"	"	0	
43F5	"	"	0	
"	"	"	0	
43F6	"	"	0	
"	"	"	0	
43F7	"	"	0	
"	"	"	0	
43G0	SWE	"	0	
43G1	"	"	3	36
"	"	"	2	39
"	"	"	0	
"	"	"	0	
"	"	"	0	
43G2	"	"	0	
44E6	SCO	"	16	
44E7	"	"	44	
44E8	"	"	69	
"	"	"	23	
44F1	NET	"	6	34
44F2	"	"	1	34
44F4	NOR	"	0	
"	"	"	0	
44F9	SWE	"	0	
"	"	"	0	
"	"	"	1	32
44G0	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	1	31
44G1	"	"	1	38
"	"	"	2	41
"	"	"	0	

Square	Country	Gear	Larvae per haul	Mean length (mm)
44G1	SWE	IKMT	0	
45E6	SCO	"	18	
45E7	"	"	44	
"	"	"	44	
45G0	SWE	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
"	"	"	0	
45G1	"	"	0	
"	"	"	0	
"	"	"	0	
46E8	SCO	"	7	
46E9	"	"	7	
46F1	NET	"	17	30
"	"	"	27	31
47F1	"	"	10	34
"	"	"	5	34
47F2	"	"	2	35
47F3	"	"	3	33
48F1	"	"	0	
48F3	"	"	0	