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International Council for the
Exploration of the Sea

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Pelagic Fish Committee

REPORT OF THE HERRING ASSESSMENT WORKING GROUP
FOR THE AREA SOUTH OF 62°N

Charlottenlund, 28-30 September 1978

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1. TERMS OF REFERENCE AND PARTICIPATION

The Herring Assessment Working Group met for 3 days in order to:

1. evaluate the position of the herring in the Firth of Clyde in relation to neighbouring herring stocks and assess the state of Clyde herring;
2. consider necessary measures to be taken to monitor depleted or recovering herring stocks;
3. During the first day of the meeting, the Group was requested, unexpectedly, to make a new assessment of the Mourne herring stock.

The following participated in the meeting:

R S Bailey	U.K. (Scotland)
A B Bowers	U.K. (England)
A C Burd	U.K. (England)
A Corten	Netherlands
H í Jakupsstovu	Denmark (Faroes)
J Jakobsson (Chairman)	Iceland
A Maũcorps	France
J Molloy	Ireland
E Nielsen	Denmark
K Popp Madsen	Denmark
H Rosenberg	Sweden
A Schumacher	Germany (Fed.Rep.of)
Ø Ulltang	Norway
G Wagner	Germany (Fed.Rep.of)
O J Østvedt	Norway

2. THE HERRING POPULATIONS OF THE FIRTH OF CLYDE

2.1 Introduction

Traditionally, herring fishing in the Firth of Clyde was carried out using anchored gill-nets (trammel nets) on Ballantrae Bank during the spring spawning season and rings-nets over a large part of the Firth. Ring-netting took place in the outer reaches of the Firth before and during the spawning season and in the inner parts of the Firth for the rest of the year. Since 1968 pair trawling has played an increasing part in the fishery and is now the only method in regular use. Occasional landings are also made by purse-seine and herring are

also landed when they are caught incidentally to demersal fishing.

A chart of the Firth of Clyde showing the spawning area and the relationship with other herring fisheries is shown in Figure 1.

2.2 Landings

Annual landings of herring caught in the Firth of Clyde from 1955-78 are given in Table 1. The seasonality of the fisheries is shown by the monthly landings given in Table 2. Landings by all methods combined fluctuated reaching peaks of 15 680 tons and 15 096 tons in 1965. After 1969 there was a fairly steady decline to a level of 3 000 - 5 000 tons from 1971-77.

2.3 Racial Composition of the Landings

Until recent years the Clyde herring fishery was based almost entirely on spring-spawning herring which spawn locally in the Firth of Clyde. These fish are characterised by a high mean vertebral count (57.0 - 57.2) and a low number of keeled scales (14.1 - 14.3). Spawning occurs from February to mid-April at Ballantrae Bank and until recently to the south of Arran. The larvae tend to drift into the upper reaches of the Firth (Saville, 1964). Recruitment to the spawning population from these areas occurs at an age of 2-3 years, the proportion of two year olds spawning herring increased in recent years as a concomitant of increased growth rate from 1964-70 (Saville and Jackson, 1974).

Since 1969 the racial composition of herring in the landings has changed. This is shown by a change in maturity composition and in mean vertebral counts. Whereas the mean VS of herring caught by trammel net on the spawning ground in spring has been stable over a long period (1930-76), in recent years the mean VS of herring caught in the months April-December has decreased (Table 3).

The change in composition of maturation stages is shown in Table 4. In 1968 fish in maturation stages 5 and 6 (ripe herring) were found in significant quantities in the Clyde only in the spring and spents (stages 7-8) only in the late spring and early summer. From 1969 onwards a larger proportion of the fish sampled in the months August-November have been ripe, and recovering spents (stage 8) have been found from about October-December.

On a division of the catches based on maturation stages it has been estimated that approximately 80% of the herring caught in the Clyde in 1968 were spring spawners, and about 40% in 1974.

2.4 The Origin of Autumn-Spawning Herring in the Clyde

Although ripening herring (maturity stages 4 and 5) are found in the Clyde in autumn, there is no evidence of spawning at that time of year within the Firth. To investigate the relationship between these herring and the autumn-spawning stocks in adjacent areas, the Working Group examined mean numbers of vertebrae, length and weight at age, age composition and tag returns.

2.4.1 Vertebral counts

As shown in Table 3, the mean vertebral counts of Clyde herring of both races combined are now 56.5 - 56.8. These means, however, include spring-spawning fish and the true mean for the autumn-spawning component is likely to be lower depending on the proportion of spring spawners.

Vertebral counts of Clyde herring in comparison with adjacent stocks are shown in the table below:

	1972	1973	1974	1975	1976
Clyde ¹⁾	56.50	56.55	56.43	-	-
Isle of Man ²⁾	56.19	56.20	56.25	56.24	56.20
South Minch ¹⁾	56.49	56.42	-	-	-
Mourne ³⁾	-	56.76	56.62	56.66	56.76

- 1) 2-ringers and older June-August
- 2) 2-ringers and older July-September
- 3) Spawning fish of all ages September-November

Thus the VS of Clyde autumn-spawners is not inconsistent with that of adjacent stocks. Owing to the uncertainty of the exact proportion of spring and autumn spawners in the Clyde samples, however, this criterion cannot be used as a guide to the racial origin of the autumn spawners.

2.4.2 Length-at-age

Based on data collected in July and August the mean length at age of Clyde herring is very much higher than that of any adjacent population.

The length frequency distribution of Clyde herring, however, is in some cases bimodal and in almost all other cases very extended (Figure 2). This indicates that the Clyde population contains a component of very large, fast-growing fish that are not caught in any other fishery. The high mean length at age is clearly reflected in the high mean weight at age (Figure 3). This component, furthermore, makes up a considerable proportion of the Clyde population.

2.4.3 Year class strength of Clyde herring in relation to neighbouring stocks

Age compositions of Clyde autumn spawners were compared with those of neighbouring populations in order to investigate possible relationships. No strong resemblance existed with the herring of the Isle of Man, the NW coast of Ireland, and the South Minch. In the Clyde herring, few year classes have been outstanding over a prolonged period. Only year class 1966 was a relatively strong one during most of its life span. This year class was only of moderate strength in the South Minch and NW of Ireland. Year class 1963 and 1969, which were very strong in the southern parts of VIa, were not exceptional in the Clyde, with the exception of year class 1963 as 2-ringers. Nor was year class 1971, the outstanding year class in the IOM fishery, anything exceptional in the Clyde.

So, although there is a remote resemblance in age composition between Clyde autumn spawners and the herring of southern VIa, the age composition data do not indicate a strong connection between Clyde herring and any of the neighbouring stocks in particular.

Nevertheless, the increase in abundance of autumn-spawning herring in the Clyde which took place in the period from 1969 onwards coincides with that period during which the stock of herring in VIa increased as a result of improved recruitment.

2.4.4 Tagging

Recent tagging experiments were carried out in October 1976 (2 600 released) and July 1977 (1 300 released). The fish tagged were representative of landings in those months, containing a wide range of lengths and maturation stages. They too can be assumed to have consisted of a mixture of spring and autumn spawners. The tag returns by month and area are given in Table 5. Neither experiment shows a clear seasonal pattern of recaptures and there is no evidence to support an exodus of herring from the Clyde in autumn 1977. The results of these recent experiments support earlier tagging experiments in which some mixing between the Clyde and adjacent populations was demonstrated (Saville, 1962; Baxter, 1963).

Most of the returns from the recent experiments have been from within the Clyde. The few returns from other areas (area VIIa Irish Sea 6; area VIa NW Ireland 2; area VIa Minch 2) indicate a degree of mixing with adjacent stocks, but provide no firm evidence for the racial origin of Clyde autumn spawning herring.

2.4.5 The data referred to in Sections 2.4.1 - 4 provide no firm basis on which to determine the racial origin of Clyde autumn spawners, and indeed suggest that their origin may be complex.

2.5 The State of the Clyde Herring

2.5.1 The spring-spawning stock

From the catch per unit effort in the spring trammel net fishery (Figure 4), it is clear that the spring spawning component in the Clyde has declined markedly since 1965. This conclusion is supported by the results of herring larval surveys carried out since 1968 (Saville *et al.*, 1974; McKay, unpubl. data). Larval production estimates for each season taken from these sources are reproduced in Table 6.

On the basis of this evidence, there is little doubt that the spring-spawning stock is now at a very low level.

2.5.2 The autumn spawners

Because allocation to race is unreliable it is not possible at present to make any firm assessment of population trends in the autumn-spawning component. They undoubtedly increased in relative abundance during the period 1969-76, when the spring-spawning stock was declining. There is less certainty about trends in absolute abundance.

2.6 Management of the Clyde Herring

2.6.1 Previous management

As a result of the clear evidence of a decrease in the abundance of spring-spawning herring in the Clyde, a national measure was introduced in 1972 barring fishing for herring in the period January-March inclusive each year. Until 1976 this seasonal closure allowed

an exemption for the traditional trammel net fishery, but following a re-assessment of the state of the spring-spawning stock in 1976, the ban in January-March was extended to all methods of fishing in 1977 and 1978.

The seasonal closure was aimed at protecting the spring-spawning stock. In addition, from 1976-78 a total allowable catch was agreed nationally, and the fishery managed on a quota basis. In 1978 the TAC is set 4 000 tons. The purpose of this measure was to reduce the level of exploitation on both the spring and autumn-spawning components.

2.6.2 Working Group advice

Since the Clyde herring population contains a component of fish which spawn within the Clyde in spring, and since it also contains a component of autumn-spawning herring which cannot at present be allocated to any adjacent stock, the Working Group recommends that the Clyde fishery be treated as a separate management unit, at least until further information on the life history of the autumn spawners is available. For this purpose, the Firth of Clyde is defined as that area within a line drawn from Mull of Kintyre to Corsewall Point (see Figure 1).

The main facts to be taken into account in drawing up advice on management of Clyde herring are:

- (i) that there is a need to protect the spring-spawning component which is currently at a low level, and
- (ii) that at least a proportion of the autumn-spawning component probably belongs to an adjacent stock of herring, all of which are at present subject to severe catch restrictions.

Taking this into account, the Working Group advocates a reduction in the catch of Clyde herring to roughly half its present level. It therefore recommends that a TAC for 1979 be set at not more than 2 000 tons.

Since there is also a clear need to give the spring spawning stock a high degree of protection, the seasonal closure should be continued.

In order to protect the juvenile component of the Clyde herring, it is recommended that the minimum landing size regulations for neighbouring areas (20 cm) should be enforced in the Clyde.

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Table 1. Landings of herring from the Firth of Clyde by gear, in metric tons, 1955-1978.

	Pair trawl	Ring- net	Purse- seine	Trammel net	Other methods	Total
1955		3799		251		4050
56		4772		71		4843
57		5779		136		5915
58		4812		114		4926
59		10455		75		10530
1960		15555		125		15680
61		10743		105		10848
62		3705		284		3989
63		6918		155		7073
64		14148		361		14509
65		14578		518		15096
66		9228		579		9807
67		7628		301		7929
68	608	8490		335		9433
69	2772	7484	33	305		10594
1970	2926	4569	59	209		7763
71	1482	2450		156		4088
72	1934	2110	48	134		4226
73	3051	1491	67	106		4715
74	3360	290	160	223	29	4061
75	3460	21	2	140	42	3664
76	3993	19	1	76	49	4139
77	4672	139	6	-	29	4847
78*	1657	-	-	-	67	1724

* January - August inclusive

Table 2 Monthly landings (tons) of herring from the Firth of Clyde
January 1966 - August 1978

	1966	1967	1968	1969	1970	Ring-Net		1973	1974	1975	1976	1977	1978
						1971	1972						
JAN	685	296	422	157	162	44	*	*	*	*	*	*	*
FEB	2148	833	2573	924	247	171	*	*	*	13*	*	*	*
MAR	855	568	876	154	147	454	*	*	*	*	*	*	*
APR	31	671	422	495	526	402	299	79	57	7			
MAY	146	291	636	741	325	305	315	129	115				
JUN	530	188	77	701	790	111	204	58	40				
JUL	1198	430	231	1266	1249	177	127	259	22			13	
AUG	1177	1157	789	960	581	163	307	347	42			61	
SEP	833	778	497	783	240	366	148	461	6			44	
OCT	752	1312	1196	674	111	83	319	26	3		12	19	
NOV	510	817	567	495	13	64	296	107	<1		7	3	
DEC	363	287	204	134	177	110	95	25	4	<1			
						Pair-Trawl							
JAN				348	284	228	*	*	*	*	*	*	*
FEB			136	638	1170	190	*	*	*	*	*	*	*18
MAR			1	32	59	14	*	*	*36	*	*	*	*3
APR				15		4	101	237	341	362	521	530	204
MAY				19			254	256	165	283	436	544	234
JUN					3		453	410	567	203	281	640	238
JUL						83	289	429	668	354	332	481	374
AUG					99	222	394	246	501	240	473	540	586
SEP				111	164	153	115	207	304	515	541	515	
OCT			8	655	713	378	91	686	448	811	586	537	
NOV			265	709	270	129	167	357	244	571	588	557	
DEC			198	246	165	80	71	223	87	120	235	328	
						Trammel Net							
JAN	74	7	65	< 1								*	*
FEB	468	294	258	258	152	130	52	71	91	55	7	*	*
MAR	37		13	46	57	27	82	36	132	85	69	*	*
						All Methods Combined							
JAN	759	303	487	506	446	272	*	*	*	*	*	*	*
FEB	2616	1127	2967	1820	1569	491	52*	71*	91*	68*	7*	*	18*
MAR	892	568	890	232	263	495	82*	36*	168*	85	69*	*	3*
APR	31	671	422	510	526	406	400	316	398	369	521	530	204
MAY	146	291	636	760	325	305	569	385	280	283	436	544	234
JUN	530	188	77	700	793	111	657	468	607	203	281	640	238
JUL	1198	430	230	1266	1249	260	416	688	690	354	332	494	374
AUG	1177	1157	789	960	680	385	700	593	543	240	473	601	586
SEP	833	778	497	894	404	519	263	668	310	515	541	559	
OCT	756	1312	1104	1329	824	461	410	711	451	811	598	556	
NOV	510	817	832	1204	283	193	463	464	245	571	595	560	
DEC	363	287	402	380	342	190	166	248	91	120	236	328	
unknown				33	59		48	67	189	44	50	35	
TOTAL	9807	7929	9433	10594	7763	4088	4226	4715	4063	3663	4139	4847	

* Subject to closure of directed herring fishery.

Table 3. Mean vertebral counts of herring
(2 rings and older) from the Firth of Clyde,
1968-1976. (No. of fish sampled in parantheses).

	Ring-net and pair trawl fisheries. (April-December)		Trammel net fishery	
1968	56.86	(1457)	57.10	(95)
1969	56.90	(1649)	56.97	(150)
1970	56.76	(1602)	57.12	(141)
1971	56.74	(1483)	57.08	(184)
1972	56.71	(1349)	57.05	(501)
1973	56.63	(1134)	56.66	(93)
1974	56.77	(1015)	57.27	(99)
1975	56.53	(462)	56.93	(60)
1976	56.78	(539)	57.03	(169)

Table 4.

CLYDE HERRING: Percentage of ripe (stage v-vi)
and spent (stage vii-viii) fish in samples each month

Year	1965	1966	1967	1968		1969		1970		1971		1972		1973		1974		1975	1976
Maturity State				Ripe Spent		Ripe Spent		Ripe Spent		Ripe Spent		Ripe Spent		Ripe Spent		Ripe Spent			
JAN				24	6	7	3	54	4	67	10	No samples		No samples		No samples			
FEB				80	1	99	0	95	4	97	2	94	2	99	0	No samples			
MAR				78	4	71	24	2	71	85	11	95	3	92	2	90	5		
APR				2	65	<1	83	0	89	0	84	0	60	0	82	No samples			
MAY				33	35	0	58	0	73	0	83	0	57	<1	83	<1	58		
JUN				0	40	0	37	0	46	0	32	0	44	0	36	0	32		
JUL				0	22	<1	27	0	13	5	10	0	11	0	20	4	7		
AUG				1	11	14	7	2	2	16	2	21	2	2	27	22	8		
SEP				1	3	6	0	10	6	13	4	28	3	4	0	10	5		
OCT				<1	3	0	5	3	8	5	5	16	11	0	9	20	14		
NOV				1	3	0	12	14	9	9	19	10	7	3	25	26	26		
DEC				2	3	27	4	31	24	36	5	6	44	5	57	5	17		

Table 5. Numbers of recaptures by month and area of herring released in the Firth of Clyde

		Released October 1976					Released July 1977						
		No Recaptured					No Recaptured						
		Clyde	Irish Sea	NW Ireland	Minch	Unknown	No per 100 arrivals in Clyde	Clyde	Irish Sea	NW Ireland	Minch	Unknown	No per 100 arrivals in Clyde
1976	Oct	10					4.0						
	Nov	108				1	42.5						
	Dec	10					16.1						
	Total	128				1							
1977	Jan	10											
	Feb	2				1							
	Mar	6	1										
	Apr	25					10.6						
	May	30					13.9						
	Jun	17		1			5.9						
	Jul	25					12.1	22				1	10.6
	Aug	14				1	6.1	57	2				24.9
	Sep	13					4.6	56	1			1	19.7
	Oct	27				1	11.9	65	1			3	28.6
	Nov	24				1	9.4	42	1		2	1	16.4
	Dec	13		1			7.5	16					9.2
Total	206	1	2		4		258	5		2	6		
1978	Jan	0						2					
	Feb	0						1					
	Mar	1						1					
	Apr	1					0.8	5			2		4.1
	May	2					1.2	7			1		4.0
	Jun	2					0.9	4					1.8
	Jul	1					0.4						0.0
	Aug	1					0.5	1					0.5
Total	8						21				3		
Grand Total	342	1	2	0	5		279	5	0	2	9		

Table 6. Larval production of spring spawning herring
at Ballantrae Bak

	Larval production x 10 ⁻¹¹
1958	3.38
59	0.32
1960	5.26
61	8.28
62	1.19
63	2.11
64	4.71
65	7.67
66	-
67	5.20
68	-
69	-
1970	5.08
71	-
72	0.84
73	0.15
74	3.64
75	0.38

1958-1972 taken from Saville et al. (1974)

1973-1975 kindly supplied by McKay (unpublished data).

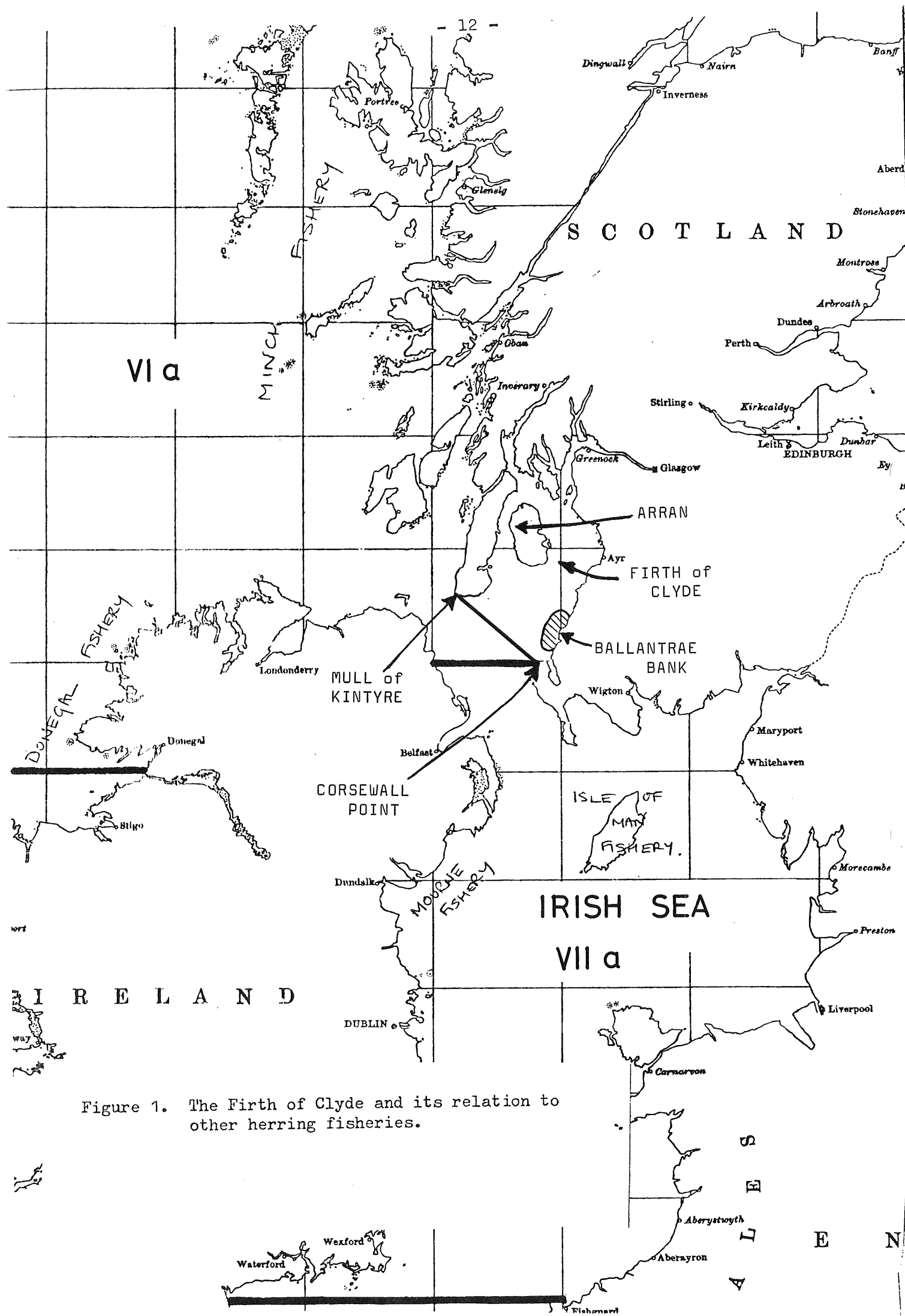
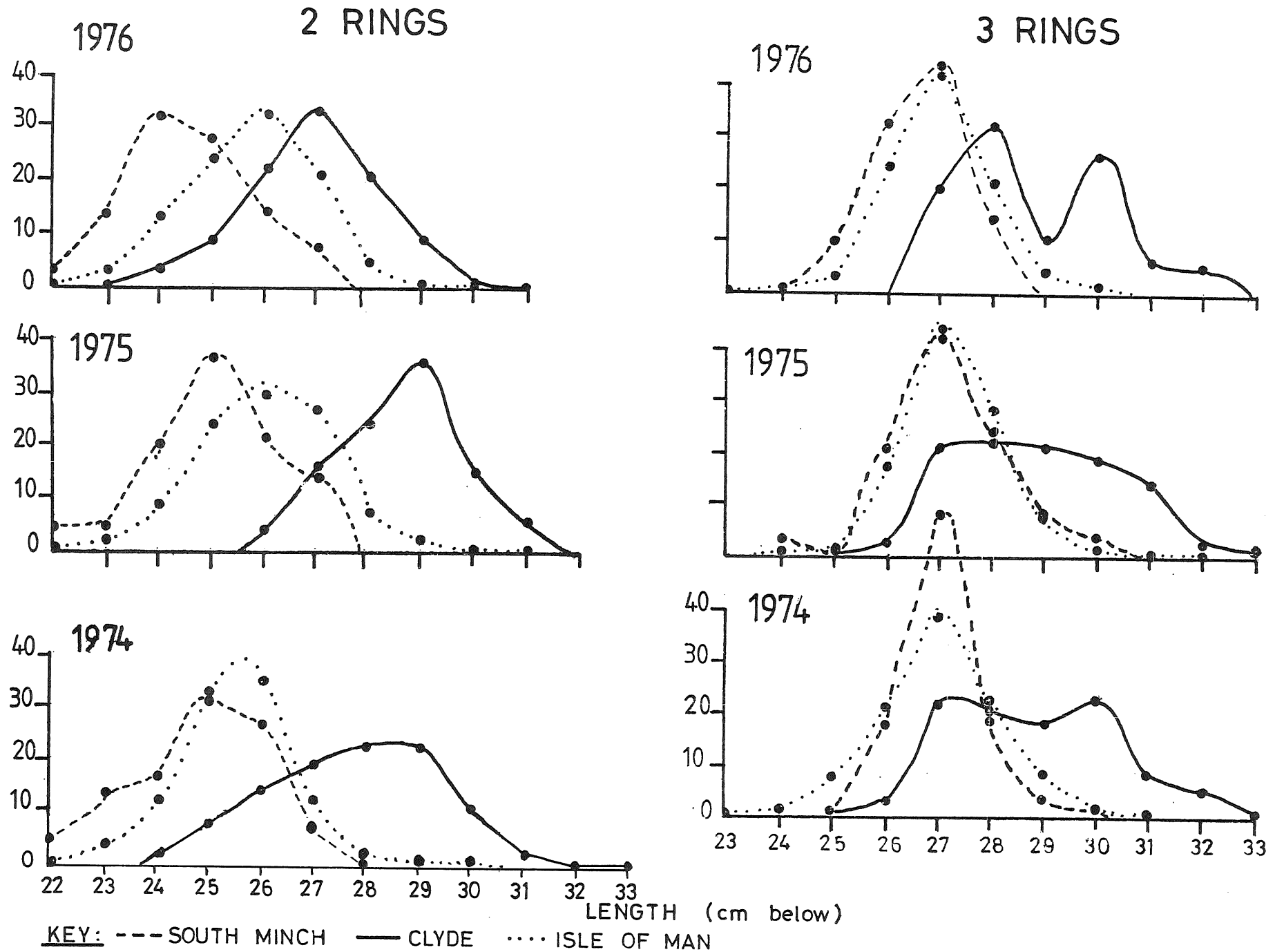


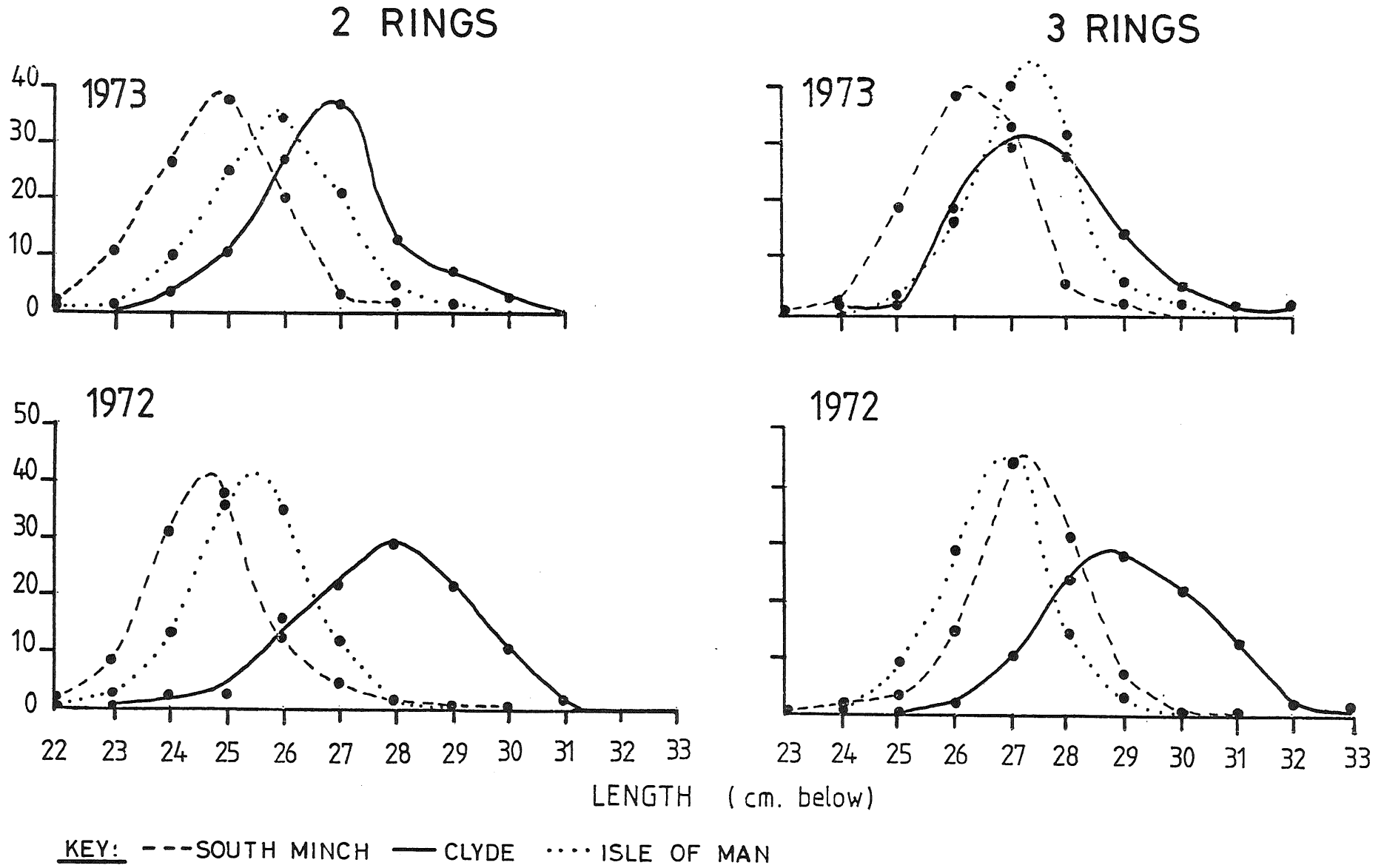
Figure 1. The Firth of Clyde and its relation to other herring fisheries.

Figure 2. Percentage length composition of Clyde, Manx and South Minch autumn-spawned herring. (2 and 3 ringers)



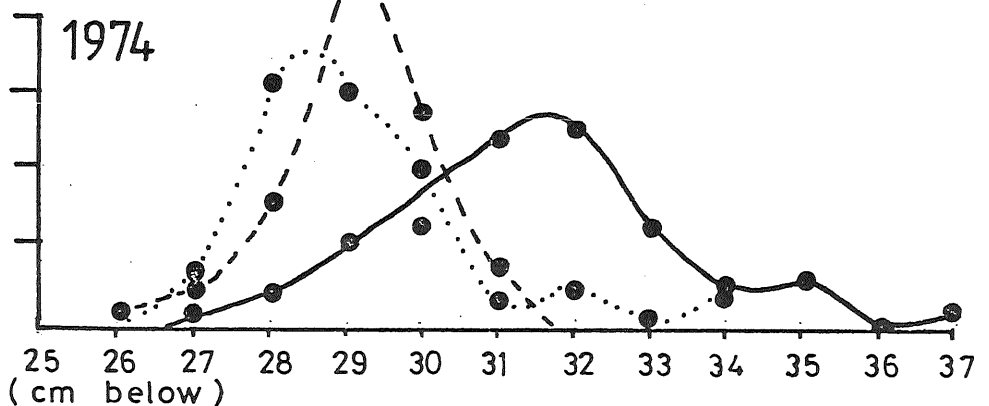
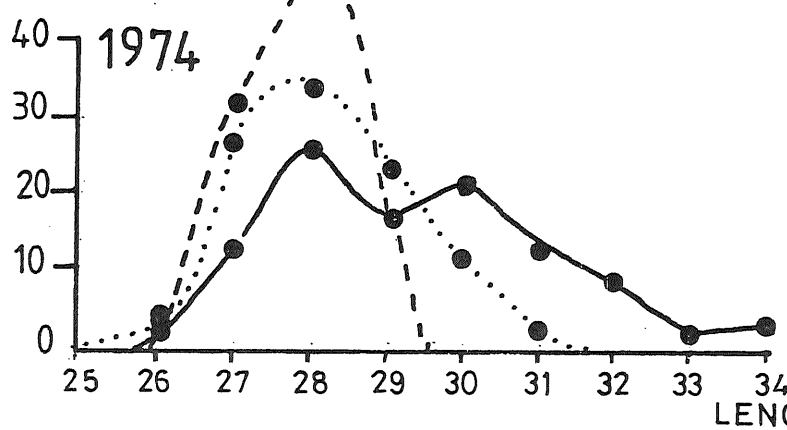
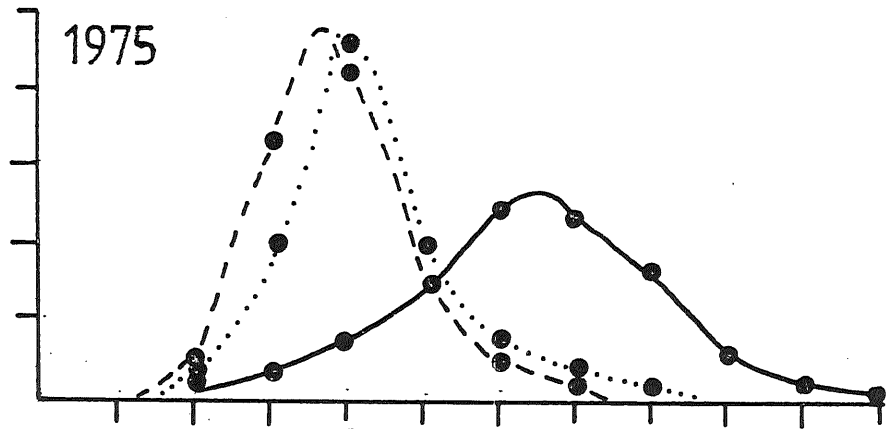
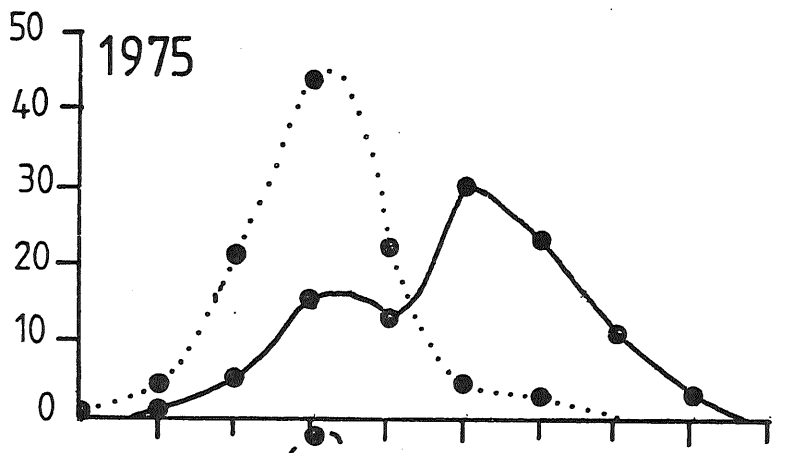
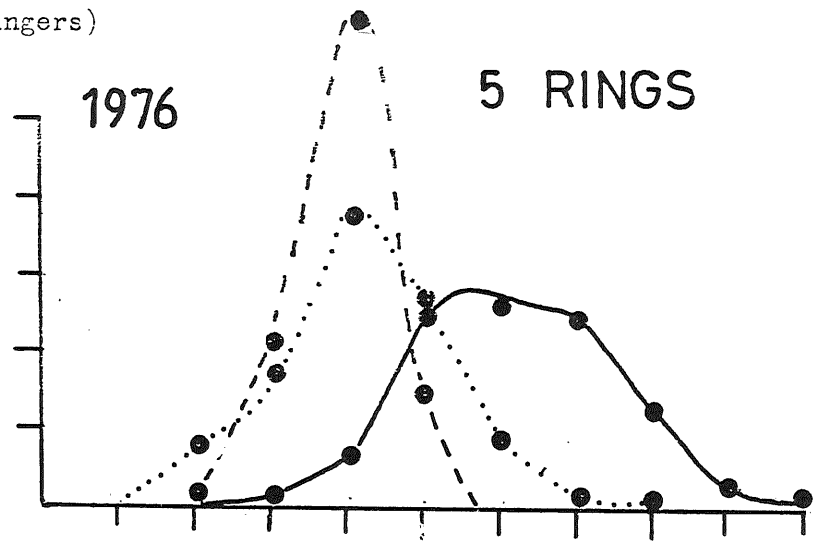
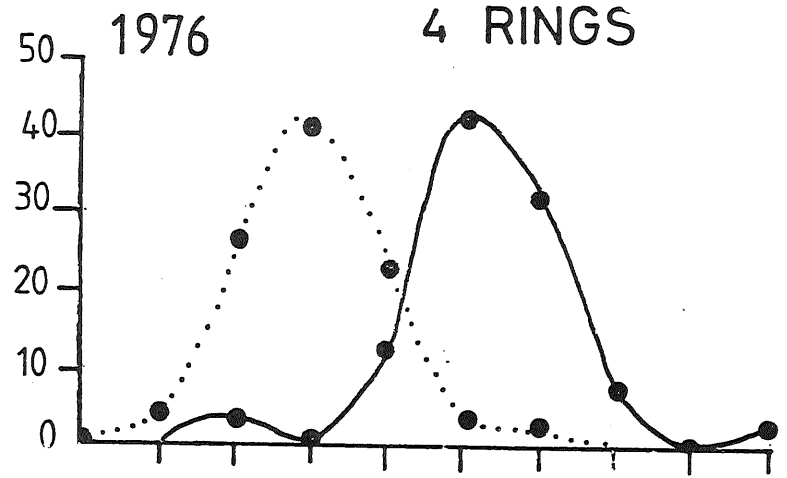
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Figure 2 continued. (2 and 3 ringers)



continued

Figure 2 continued. (4 and 5 ringers)

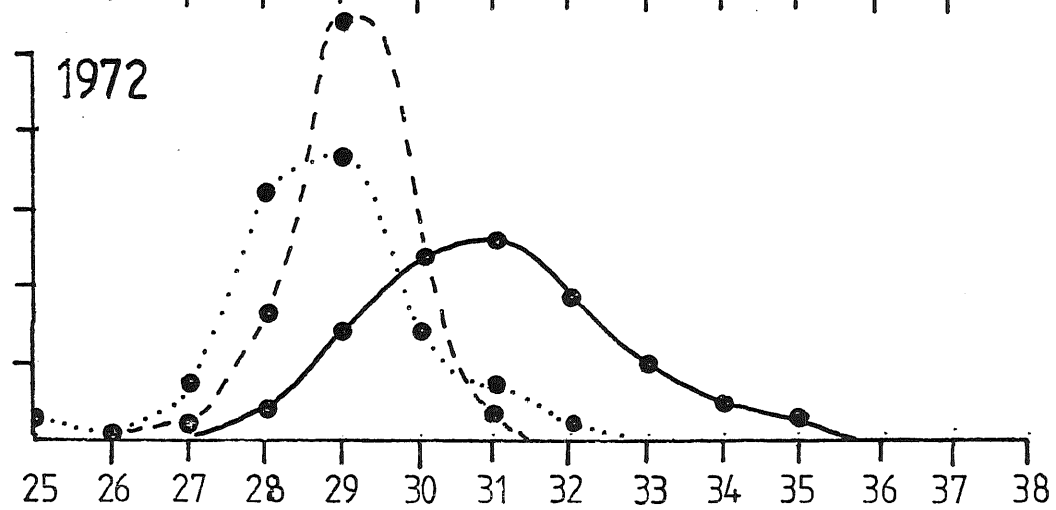
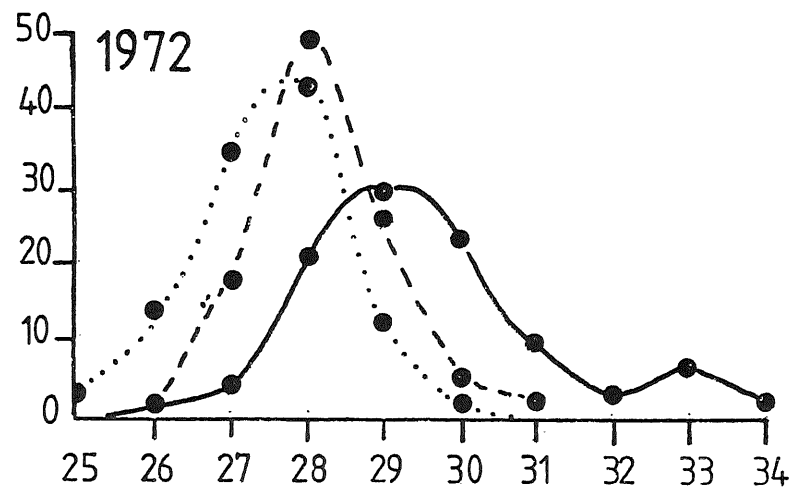
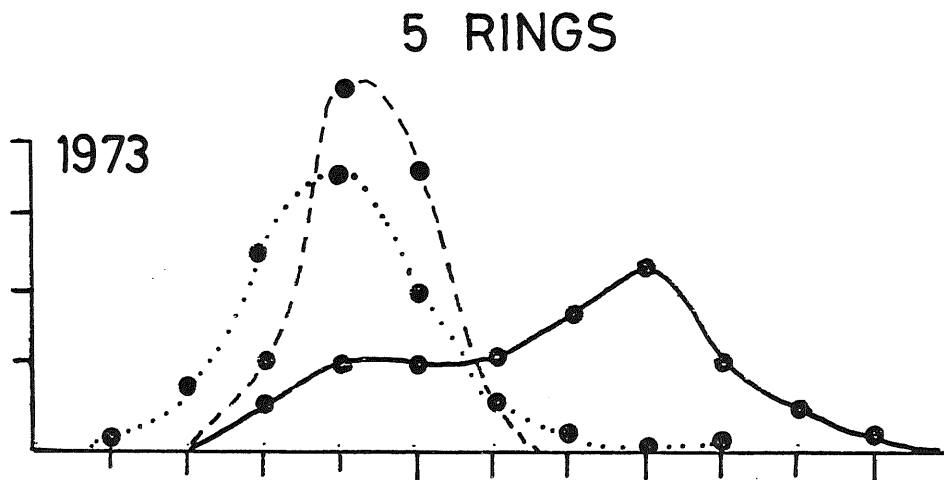
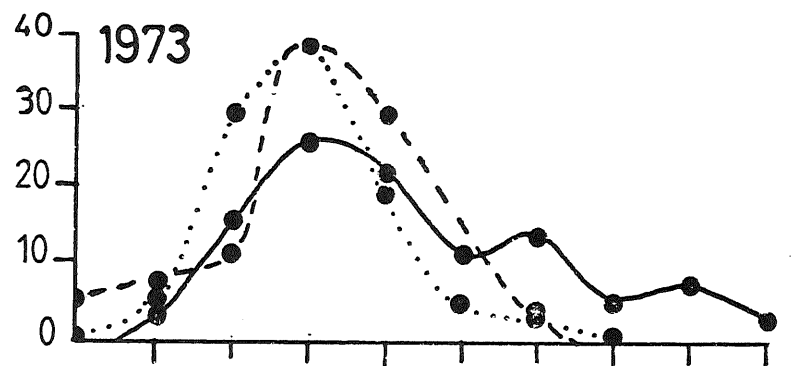


KEY: --- SOUTH MINCH — CLYDE ISLE OF MAN

continued

Figure 2 continued. (4 and 5 ringers)

4 RINGS



LENGTH (cm below)

KEY: ---SOUTH MINCH — CLYDE ISLE OF MAN

Fig. 3 Growth curves of Clyde herring in comparison with adjacent stocks

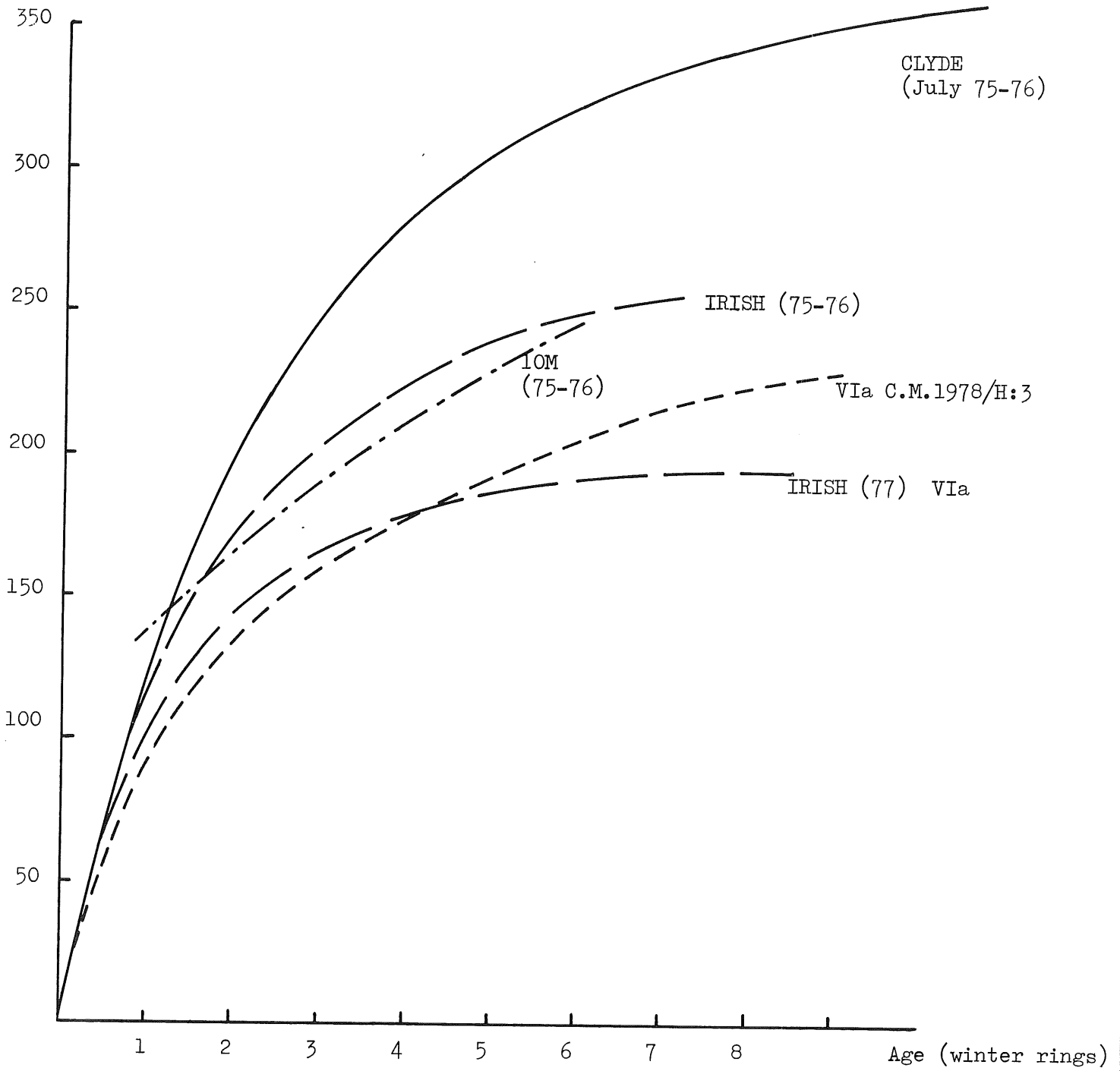
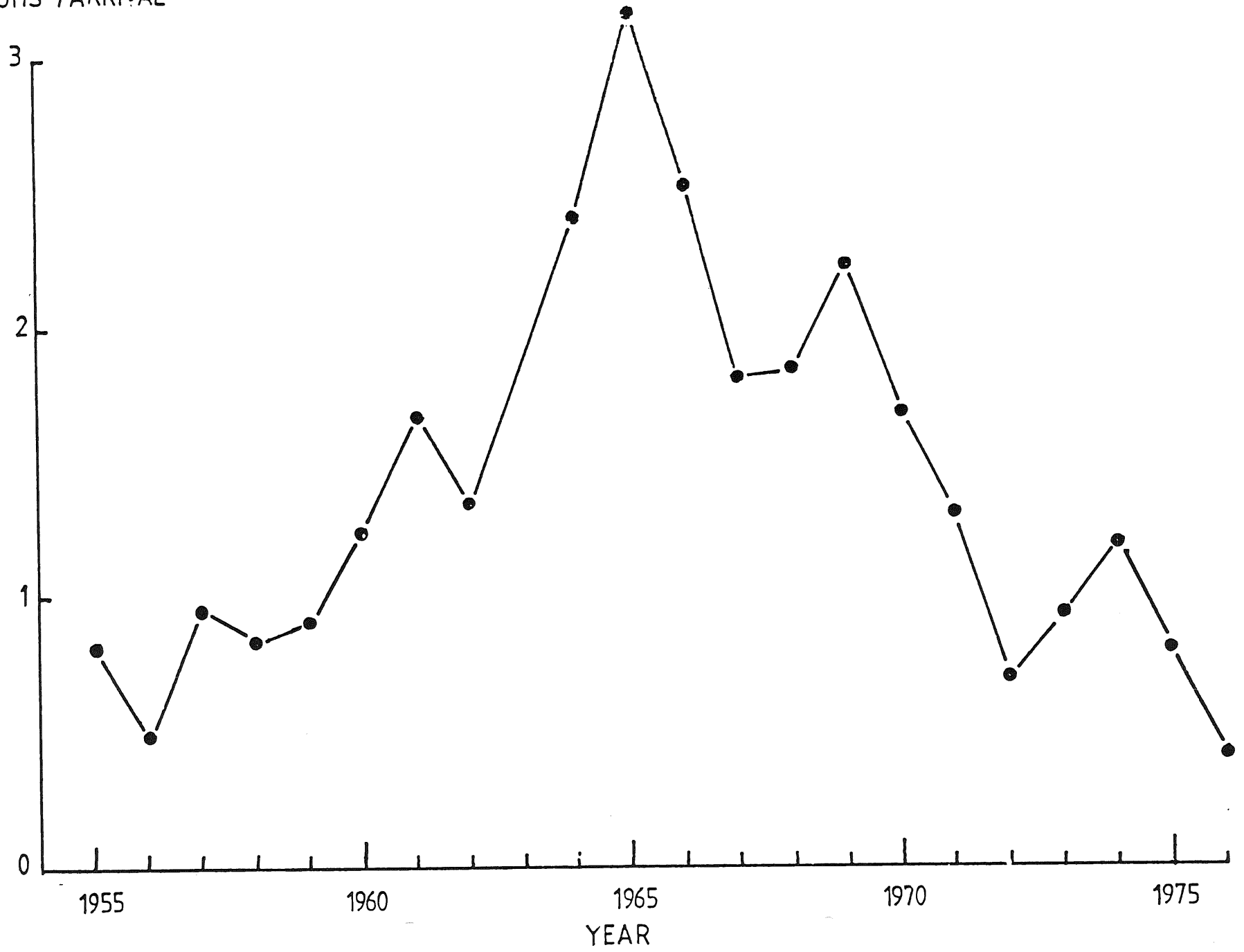


Figure 4. Catch per arrival in the Clyde trammel net fishery, 1955-1975.

TONS / ARRIVAL



3. ASSESSMENT AND MONITORING OF DEPLETED OR RECOVERING STOCKS

3.1 With the present prohibition of fishing for herring in VIa and the North Sea, there is an acute need for independent measures of abundance for the stocks in these areas. The following lines of research were discussed and recommended

3.2 Acoustic Surveys

The Working Group considered the problems encountered in carrying out acoustic surveys in the North Sea and adjacent areas. After an extensive discussion it was agreed to recommend that an ICES coordinated acoustic survey be carried out in 1979. To avoid dissipating the available effort over too great an area, it seemed advisable to confine the survey to those areas where the greater part of the North Sea and VIa herring adult stocks are likely to be found.

3.2.1 Objectives

The primary objective of the survey would be to estimate the biomass of adult herring north of 57°N both in Sub-division IVaW and Division VIa. A secondary, but nonetheless important objective would be to determine the composition of the spawning stock in each area by fishing.

3.2.2 Timing

The survey should take place in July 1979 and depending on the results, should be repeated in subsequent years.

3.2.3 Vessel Requirements

It is recommended that the survey should be carried out by three research vessels equipped with echo-integrators and three ships for scouting and sampling. For that item, the possibility of using chartered vessels should be considered nationally. It is also recognised that in practice the same ships might be involved in scouting, sampling and echointegrating.

3.2.4 Methods

At the beginning of the survey, the scouting vessels would carry out an extensive search in areas thought likely to contain herring. Having located concentrations, they would investigate them for a period of up to several days to determine their behaviour pattern and hence the time of day or night at which integration is most likely to succeed. The echointegrator surveys would then be carried out as an intensive grid over a limited and well-defined area. Throughout the period, intensive sampling would be carried out to determine the age composition of the population in each area.

3.2.5 Coordination

The survey should be coordinated by a planning group consisting of members from each country participating. This group would be responsible for the detailed planning of the surveys.

3.2.6 Reporting of results

The planning group will be responsible for allocating the results of the surveys and for preparing a report which would be presented at the Statutory Meeting in 1979.

3.3 Herring Tagging Experiment 1979

It is proposed that a major tagging experiment be undertaken in 1979 in the area between Donegal and the northern North Sea.

3.3.1 The objectives

- 1) To estimate the strength of the stocks in VIa and IV.
- 2) To estimate recruitment to the stocks and to examine the interrelation between these stocks.
- 3) To estimate natural mortality.

3.3.2 The experiment

- a) Area. - Tagging should be spread over the area between Donegal, through the Minches, west of the Hebrides and the areas around Orkney and Shetland.
- b) Timing. - To avoid tagging full herring, it is considered that the tagging should take place in the period May to July. The experiment should be repeated annually as long as necessary.
- c) Tagging method. - Internal tags would be used and in order to get sufficient recoveries it is considered that a minimum of 100 000 tags should be liberated. In view of the area involved and the timing, it is considered that two purse-seine vessels should be employed. On each vessel it is proposed that there should be two tagging teams of two men. These should not be changed throughout the period of tagging.

3.3.3 Tag recaptures

In order to ensure that the liberated tagged fish are distributed over the whole area of distribution of the stocks, it is not proposed to establish a regular recovery system before January 1980.

Because of the ban on commercial herring catching, it would be necessary to hire a number of experimental fishing vessels. The catches of these vessels would have to be screened for tagged fish using a tag detector system. The catches would be sold to defray the costs of the experiment.

3.3.4 Biological sampling

Throughout the tagging experiments regular biological samples of the fish caught would be examined.

Similarly, all experimental catches would be sampled.

3.3.5 Tagging mortality

During the experimental tagging period, tagging mortality experiments should be conducted. It is essential for the successful analysis of the data that some priority should be placed on these experiments.

3.3.6 Planning Group

A Planning Group should be set up to make more detailed proposals and assess costs for the entire scheme. A very rough estimate of the cost of the tagging in 1979 would be of the order of

D.Kr. 2.5 million. This is equivalent to a catch at present prices of 250-500 tons of herring.

3.4 Young Herring Surveys

The feasibility of the extension of the ICES North Sea Young Herring Survey was discussed. The Working Group came to the conclusion that although there could be great advantages in young herring surveys in areas outside the North Sea, these would be best taken care of by national rather than international effort. It was, therefore, recommended that the Young Herring Surveys outside the North Sea should be either continued (Irish Sea and VIa) or initiated (Celtic Sea) on national basis.

3.5 Larval Surveys

The Working Group discussed the coordination and extension of larval surveys for monitoring changes in spawning stock size. The Group recommends that the sampling intensity in Division VIa should be brought up to the same level as in the North Sea, i.e., one survey every 15 days during the hatching season. The Group also reiterates its former recommendation that the Working Group on North Sea Herring Larval Survey is transformed into a Working Group for all herring larval surveys south of 62°N. This new Working Group should be convened at the earliest possible occasion, in order to make plans for a complete coverage of the spawning areas and periods in both the North Sea and Division VIa, starting from the 1978 season.

The current programme for monitoring direct assessment herring stocks in the area considered by the Working Group is set out in the text table below. In addition, proposals made in this report are included.

Current and proposed monitoring programme of herring stocks in the area south of 62°N

Stock	Larval surveys	Recruit surveys	Acoustic surveys	Tagging experiments
North Sea and Skagerrak (including eastern Channel)	ICES	ICES	Proposed ICES	Proposed ICES
Celtic Sea	Ireland	-	Ireland (spawning survey qualitative)	-
VIa (excluding Clyde)	Scotland	Scotland	Proposed ICES	Proposed ICES
Clyde	Scotland	-	-	Scotland
West coast Ireland	-	-	-	-
Irish Sea	Survey of Mourne spawning ground	-	-	-

4. MOURNE HERRING

4.1 The Herring Working Group estimated the status of the Mourne herring stock as of 1 January 1978 to be as follows (Doc. C.M.1978/H:3).

Millions of fish at 1 January 1978

Age (rings)

0	1	2	3	4	5	6	7	8	9	10	Total
45.4	22.5	18.8	6.9	2.7	1.1	0.7	0.3	0.2	0.1	0.1	98.8

The spawning stock biomass was estimated to be 6 900 tons at 1 January 1978.

0-group recruitment in 1978 was assessed at 45 million fish; it was stressed that this figure might well be overoptimistic because the spawning stock size was very low.

The recommendation made by the Working Group in March 1978 is reproduced below.

It is recommended that the present prohibition on fishing for herring within 12 miles of the coast of Ireland should be continued, and in view of the substantial catches of 1-ring herring of both Manx and Mourne origin which have been caught in Belfast-Lough during the winter of 1977/78, it is also recommended that the closed area should be extended to the northern boundary of Division VIIa at latitude 55°00'N. The Working Group once again draws attention to the fact that there can be very little prospect of a recovery by this stock while the industrial fishery continues in the N.Irish Sea. It is imperative that this fishery is terminated at once, otherwise it is very likely that this stock will not continue to survive.

The ACFM endorsed this recommendation.

4.2 It is now known that the Mourne stock has been subjected to fishing in 1978 by drift-netters and trawlers, and by an industrial fishery in the Irish Sea.

By 26 September drift-netters were reported to have taken 400 tons of mature fish in the area within half a mile from the Northern Ireland baselines between a line running due east from Roaring rock (approx. 54°10'N) and a line running due southeast from Haulbowline rock (54°0'N). It is understood that this fishery was stopped on 26 September 1978.

The estimated total catch of Mourne herring in 1978 to date (29 Sept.) is about 2 350 tons. This estimate will probably be increased as more accurate data become available. The total includes about 360 tons of herring taken by the industrial fishery; the remainder includes catches by trawlers and drifters.

The total catch of Mourne herring in 1977 was 2 983 tons.

- 4.3 Information is not yet available on the age distribution of the 1978 catch. It is therefore not possible to make a firm stock assessment as at September 1978 but the following facts are clear.
- (i) The Mourne stock was in a seriously depleted state at the beginning of 1978, and in particular the spawning stock was at such a low level that recruitment was in jeopardy and the extinction of the stock was a real possibility.
 - (ii) Despite the recommendations of the Working Group and ACFM, the substantial fishing in 1978 will further reduce the spawning stock and the status of this stock will be even more serious than was stated in the Working Group's report (Doc. C.M. 1978/H:3).
 - (iii) It must be concluded that the Mourne stock is in such a critical state that the Working Group can only repeat its previous recommendations that NO catch should be allowed from this stock. The Working Group also draws attention to the continuation of the industrial fishery in the Irish Sea which kills a large number of juvenile herring of the Mourne stock.

4.4 The Working Group recommends:

- (i) that directed herring fishing be prohibited within 12 miles of the coast of Ireland between 53°00'N and 55°00'N for the remainder of 1978 and the whole of 1979.
- (ii) that industrial fishing in the Irish Sea be prohibited for the remainder of 1978 and the whole of 1979.

Extrait d'une lettre de la Commission des
Communautés Européennes concernant le hareng
de la Clyde

Dans le rapport de l'"A.C.F.M." 1978, il est recommandé qu'aucune capture de hareng n'ait lieu dans la division VIa) aussi bien pour le reste de l'année 1978 que pour l'année 1979. Cette recommandation ne comportant aucune exception, cela implique qu'en particulier la pêche du hareng dans la zone de la "Clyde", zone comprise dans la division VIa), est également concernée. Toutefois le Cooperative Research Report No. 37 (p. 26) fait mention de l'existence d'un stock de hareng frayant au printemps dans l'estuaire de la Clyde. Dans ces conditions, certaines questions se posent au sujet desquelles la Commission souhaiterait obtenir des informations scientifiques.

Le stock de hareng auquel il est fait référence dans ce rapport a-t-il atteint un niveau de surexploitation tel que sa pêche doit également être interdite? Dans la négative comment un TAC peut-il être calculé? Y-a-t-il des migrations vers la Clyde des stocks frayant en automne à l'Ouest de l'Ecosse? Connait-on leur importance? Peut-on calculer également les taux de mélange entre ces éventuels différents stocks à l'intérieur de cette zone ainsi que les variations saisonnières de ce taux?

Il paraît également intéressant de connaître l'évolution de l'exploitation de cette pêche dans la Clyde ainsi que celles d'autres stocks de hareng frayant également au printemps dans la zone VIa).

Vous comprendrez certainement l'intérêt que la Communauté porte à ces questions et je vous serais très reconnaissant si le CIEM pouvait aussi éclairer la Commission sur la façon dont la recommandation visant à interdire la pêche du hareng dans la zone VIa) doit être interprétée.

English Translation (by Ms. Umansky) of
the EEC Letter about Clyde Herring.

In the 1978 ACFM report, a recommendation was made that no catch of herring should take place in Division VIa both during the rest of 1978 as well as during the whole of 1979. There was no exception to this rule in the recommendation, it therefore implies that it also applies to herring fishing in the Clyde area which is part of Division VIa. However, Cooperative Research Report No. 37 (p.26) refers to the existence of a spring spawning stock of herrings which spawns in the Firth of Clyde. - Consequently, there are some questions on which the Commission would like to obtain scientific advice.

Is the herring stock referred to in this report so heavily overexploited that fishing on it should be prohibited?

If not, how could a TAC be assessed?

Are there migrations into the Clyde of autumn spawning stocks which spawn to the west of Scotland? Is their magnitude known? Is it also possible to calculate the mixing rate between these possibly different stocks in this area as well as its seasonal variations?

It would also be interesting to know the evolution of this Clyde fishery as well as of other spring spawning herring stocks which spawn in Division VIa.

You will certainly understand the interest which the Community takes in these matters, and I would be grateful to the ICES if it could advise the Commission on how the recommendation prohibiting fishing in Div. VIa should be interpreted.

Annex 2.
to C.M.1978/H:67

THE EEC COMMISSION REQUEST TO ICES FOR
SCIENTIFIC ADVICE ON THE MOURNE HERRING STOCK

Could ICES please answer during forthcoming meeting following questions:

1. What is the estimate status of the Mourne herring stock as of 19 September 1978 in the light of fishing since January 1978?

2. What would be the effect of taking out 400 t of this stock between 20 September and 27 October 1978 in an area within half a mile from the northern Irish baselines between a line running due east from the Rearing rock (approx. 54 degrees 10 minutes north) and a line running due south-east from the Haulbowline rocks (approx 54 degrees zero minutes north) with boats under 35 feet registered length (drift-netters)?