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HERRING STOCKS IN 1976 - Introduction to 'Annales Biologiques', Vol. 33

During the O-group Fish Survey there were no concentrations of adults found in the traditional Atlanto-Scandian herring waters north and east of Iceland in August/September, nor were any herring recorded during the annual International Environmental Survey in the Norwegian, Iceland, and Greenland Seas in May/June; further, catches reported from the Faroese grounds amounted to less than 1 000 tonnes in 1976.

However, the state of the Icelandic summer spawning stock continued to improve. During a special survey in June/July, three spawning grounds were located, the major ones lying west of Garöskagi and off the Vestmann Islands. Off the south coast of Iceland the drift net fishery yielded about 7 800 tonnes until it was closed on 25 November, and 47 purse seiners caught some 10 000 tonnes during the open season from 25 September to 25 November. The 1971 year class continued to dominate in the catches of both purse seiners and drift nets. For purse seiners, however, the 1973 year class was next in abundance, while in drift net catches, there were more of the 1969 and 1970 year classes. Practically all immature herring sampled during most of the year belonged to the 1973 year class, since the recruiting 1972 year class appears to be very poor. The 1973 year class, however, did not appear to be so abundant on the inshore overwintering grounds as in 1975 and it was surpassed by the 1974 year class, which is estimated to be strong both on these grounds (where it was partially mixed with adults) and in the offshore area of its demersal concentration.

Norwegian investigations on the Atlanto-Scandian spring spawning herring stock provide further evidence of improvement. Spawning took place off Møre, Helgeland, and Lofoten. The 1973 year class predominated in all samples, but the 1969 year class was still prominent off Helgeland and particularly in the Lofoten area. Throughout the year the 1974 year class was highly abundant in samples taken off Helgeland and, together with the 1975 year class, off Møre.

The North Sea herring catch decreased sharply by about 123 000 tonnes from the 1975 level of 295 000 tonnes. Only in the northern North Sea was the catch slightly above the 1975 level of 108 000 tonnes. The southern North Sea catches were only about half, and those from the central North Sea less than one third of the 1975 catch. Catches from the Skagerrak and the Kattegat also declined, from 121 000 tonnes in 1975 to about 54 000 tonnes in 1976.

The major catches from the northern North Sea were again taken in the northwestern area and around Shetland in the summer months. The 1973 autumn year class was clearly dominant, and the 1974 year class was practically absent. The contribution of spring spawned herring; to the samples from Shetland waters continued to be small, though a Norwegian contribution indicates an increase in its proportion to about 25% of the total in August. A Scottish contribution reports on an unusual fishery off Fraserburgh throughout July that exploited shoals of maturing herring close inshore. The only similar previous occasion was in 1970 when ripe herring were caught all along the Moray Firth coast from mid-August to mid-September.

In the central North Sea the 1973 year class was almost the only one appearing off North Shields during the early months of the year, while during the summer months - as indicated in an English contribution - smaller numbers of the 1972, 1971, and 1969 year classes were also present in the catches from the Longstone area. A Dutch contribution reports the presence of the 1970 and 1971 year classes on the spawning grounds in the Flamborough/Whitby and Dowsing areas, where the 1973 year class was the main component of the catches, but indicates that it was considerably weaker than in the more northern areas. The same difference is reported for 1-ringers, since in the English fishery they were more abundant, particularly during the first half of the summer fishery, than the 1-ringers of the 1973 year class were in 1975.

The southern North Sea herring fisheries suffered from low recruitment by the 1973 year class combined with scarcity of older fish, including the 1972 year class, which could have improved the stock slightly had it not been subjected to overexploitation in 1975. During the Federal Republic of Germany survey in December, no herring concentrations could be found either by bottom trawling or by hydroacoustic methods in the English Channel and the southern North Sea.

During the International Young Herring Survey, catches of 1-group herring (of the 1974 year class) were very low compared with previous years throughout the North Sea. This was confirmed by the Soviet Young Herring Survey. The only large catches of 1-ringers were obtained in the Kattegat but they appeared almost exclusively to be spring spawners. Sampling of 0-group herring was unfortunately too limited to provide comparable data, with the exception of the Skagerrak where the catches were almost negligible.

Thus, the extremely high removal rate of the 1973 year class (as 0-, 1-, and 2-group herring), which could have made a major contribution to the North Sea spawning stock in 1976, together with a sharp reduction in the number of older fish compared with 1975, and the apparently very weak year classes which will recruit to the stock in 1977 and 1978, indicate that the North Sea herring spawning stock is in a dangerous state.

The total catch taken in Division VIa in 1976 continued the declining trend of recent years by dropping to about 109 000 tonnes. Although, as in the North Sea, the 1973 autumn spawning year class dominated the catches, the 1972 and 1969 year classes were still rather strongly represented in the catches. The indications are that the 1972 year class is of average strength or slightly above it, the 1973 year class is moderate, and the 1974 year class is apparently fairly strong in the Minch, since it made a greater contribution to the North Minch Scottish fishery from October to December than the 1969 and 1972 year classes. The Dutch contribution reports a sharp decline in the percentage of old herring in Donegal Bay compared with 1975, and an Irish contribution indicates the disappearance of winter/spring spawning herring from the same area.

Both the Dutch and Irish contributions agree on the negligible influence of the 1973 year class in Divisions VIIb,c. Though the Irish catches decreased, the Dutch fishing effort and catches continued to increase, and this brought the total catch from the area up to some 20 000 tonnes. However, the proportion of the 1963 year class in the catches, which was the mainstay of the 1975 Dutch fishery, followed the sharp decline seen in Donegal Bay, and the fishery concentrated on the 1970 to 1972 year classes.

Catches in the Irish Sea decreased to about 23 000 tonnes, and the Irish contribution indicates a scarcity of herring throughout the year. In addition to survivors of the very strong 1971 year class, the fishery exploited the moderate 1972 and 1973 year classes, which started to dominate in the samples in late 1976. Landings from the Irish industrial fishery off Clogherhead, which exploited the 0- and 1-group potential recruits to the Mourne stock, were reduced by 50% in 1976.

Catches from the Celtic Sea stock fell to about 6 000 tonnes, and the Irish and Dutch contributions report continued poor recruitment to the stock, a below normal influence of the 1973 year class and by-catches of 1-ringers during the late months of the year. The autumn spawning herring accounted for 38% of the total Irish catch in 1976; this is believed to be associated with a gradual change in the spawning time of the main winter stock which may have occurred in recent years.

Herring catches in the Baltic decreased in 1976, after a continuous increase in recent years, by about 19 000 tonnes, or to a level of 396 000 tonnes. A Polish contribution indicates the prevalence in the Bornholm area and in the Gulf of Gdańsk of the 1972 to 1974 year classes of spring spawning herring together with the survivors of the very strong 1967 year class. The 1969 to 1971 year classes were also strongly represented in the Gulf of Gdańsk. The number of autumn spawning herring in the samples continued to be low.

The Gulf of Riga was the only place where the appearance in 1970 to 1973 of three successive abundant autumn year classes led to a noticeable increase in the autumn spawning stock. However, due to the appearance of the above-average 1975 spring year class, together with the weak 1974 and 1975 autumn year classes, the proportion of autumn spawners in the catches started to decline again in 1976. Soviet and Finnish contributions indicate the continued prevalence of the 1970 spring year class in coastal catches in the Gulf of Finland, whereas the 1975 year class dominated the trawl catches. The 1970 and 1972 to 1974 year classes were less abundant. In the Archipelago Sea the 1975 spring year class predominated in the trawl catches, and the 1971 and 1972 year classes in the trapnet fishery. In the northern Baltic the 1972 and 1973 spring year classes were prominent in both the trawl and the trapnet fisheries, with the 1975 year class making a major contribution to the former. On the basis of larval and young herring surveys and catch composition data, a Soviet contribution estimates, for the entire northeastern Baltic, the 1970 year class of spring spawning herring as strong, the 1972 year class as below average, the 1973 year class as average, the 1975 year class as above average, and the 1971, 1974, and 1976 year classes as poor.

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