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The area reportage of herring statistics
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INTRODUCTION

At recent meetings of the various Working Groups on assessment of the North Sea and west of the British Isles herring stocks it has become clear that the system of catch reportage by means of the ICES areas used in Bulletin Statistique is of limited value for stock assessment. The time available to the Working Groups has been misused in that summarization of catch from national data sources into more useful area units has had to be made. This loss of time has seriously affected the work of the Groups. In conversation between members of the Working Groups it was felt that a more useful system of reportage of pelagic catches could be devised which would give the Working Groups the data broken down in the form required, and that this might be published in Statistical Newsletters.

Not all countries have available catch and effort data collection systems which enable catches to be referred to the ICES statistical rectangles. The best that can be provided are catches for larger subdivisions of the standard ICES areas. Uniformity in this breakdown would be desirable.

At the 1959 ICES Council meeting a recommendation was passed calling for the publication of past catch and effort statistics by mean fishing regions. The areas defined are shown in Figure 1. These areas are very different from those used for German national statistics (Fig. 2) and both are different from the system used in the recent North Sea Assessment Group. The large changes in location of the fisheries in the northern North Sea have been completely hidden with the presentation as total catches for area IVa. The Working Group on the western herring stocks also had to attempt further breakdown of the too large area VIa. Figure 3 shows the areas used by these Working Groups.

The purpose of this paper is to draw the attention of the Pelagic (Northern) Committee to the problem and to present an area reportage system for discussion and modification by the Committee.

NORTH SEA STATISTICAL AREAS

For purposes of stock assessment the Working Group found that it was necessary to divide area IVa along the 2°E meridian of longitude and to present separately catches for the areas east and west of this dividing line. This division conveniently showed the change in emphasis in the fisheries of the northern North Sea.

However, since 1965 the proportion of catch taken west of Orkney and Shetland has increased. In 1970 this fishery extended even further west, appreciable quantities being taken west of 4°W (the North Sea boundary). At the 1971 NEAFC meeting guidance was sought with regard to the realistic area boundary for North Sea herring conservation.

The Assessment Group examined this question and concluded that it appeared the fishery exploited the same stock (or stocks) both east and west of the Shetlands and also west of 4° . In 1970 the fishery tended to be centred on 4°W and there can be no great degree of confidence in the assignment of catches to areas IVa or VIa. Catches assigned to VIa marginally west of 4°W cannot be distinguished from catches in the Minches or off north-west Ireland.

In order to see the trend in the changes in the area of the fishery there is a requirement for a further breakdown of these areas. The Working Group thought there might be some justification for moving the boundary for catch quotas westwards. A boundary has been placed at 5°W (Fig. 4) and the eastern boundary is suggested to follow the Orkney and Shetland western coasts.

The Committee might consider a further modification in which the southern boundary of IVb is moved south to 53° . This modification would more or less ensure that all catches reported consisted of Downs stock. In the present assessments the total catch for area IVc is assumed to be of Downs origin and the Downs age distributions are applied. In including the sector between 53° and $53^{\circ}30'$ major spawning areas of Bank herring are included. The improvement relative to the extra processing might be only marginal.

WEST OF THE BRITISH ISLES

In examining the problem of further subdivision of area VIa consideration has been taken of the present situation and the possible developments in the area. The Scottish fleet which has been the major exploiter has in the past operated mainly within the Minch and south of Barra. German, French and Dutch fleets, in German statistical area F, tended to work to the north of St. Kilda and west of the Hebrides. The area to the north of the Hebrides and eastwards to $4^{\circ}W$ is the area into which one might expect expansion by the purse-seine fleets. It would be useful to be able to monitor such a development.

Another area of likely development might be off Donegal. At present the boundary between VIIa and VIIb results in herring from the Donegal fishery being reported in two areas. A more useful statistical unit would result by moving the boundary south to 54° .

At the present there appears no reason to maintain the boundary between VIIb and VIIj and a new region is suggested.

As was pointed out in the Celtic Sea Herring Assessment Group the north-eastern boundary of area VIIg is so placed that the catches at Dunmore are reported as coming from area VIIa (the Irish Sea), while catches further west are reported in VIIg together with all other national catches on this stock. The alteration of the boundary as indicated in Figure 4 is suggested. The alteration would mean that catches reported from VIIa would comprise mainly the Isle of Man fishery and a number of other small fisheries in the central Irish Sea.

REPORTAGE OF CATCH COMPOSITION

The series of areas described are not intended as a replacement of the standard Bulletin Statistique areas. They are intended to describe fisheries for use by Assessment Groups. It is suggested that the data are routinely published in the ICES Statistical Newsletters. Within each of these areas the quantity of the catches destined for direct consumption and that for fish meal should be indicated. Where possible age composition data should be reported for these areas and separately for the two main categories of use.

Juvenile herring catches might be reported using the Danish areas for the North Sea (Fig. 5).

The Committee might further consider the extension of this or some modified system of catch reportage to other pelagic species. With the increase in purse-seining activity with respect to mackerel it might be appropriate to use this system for reporting catches of this species.

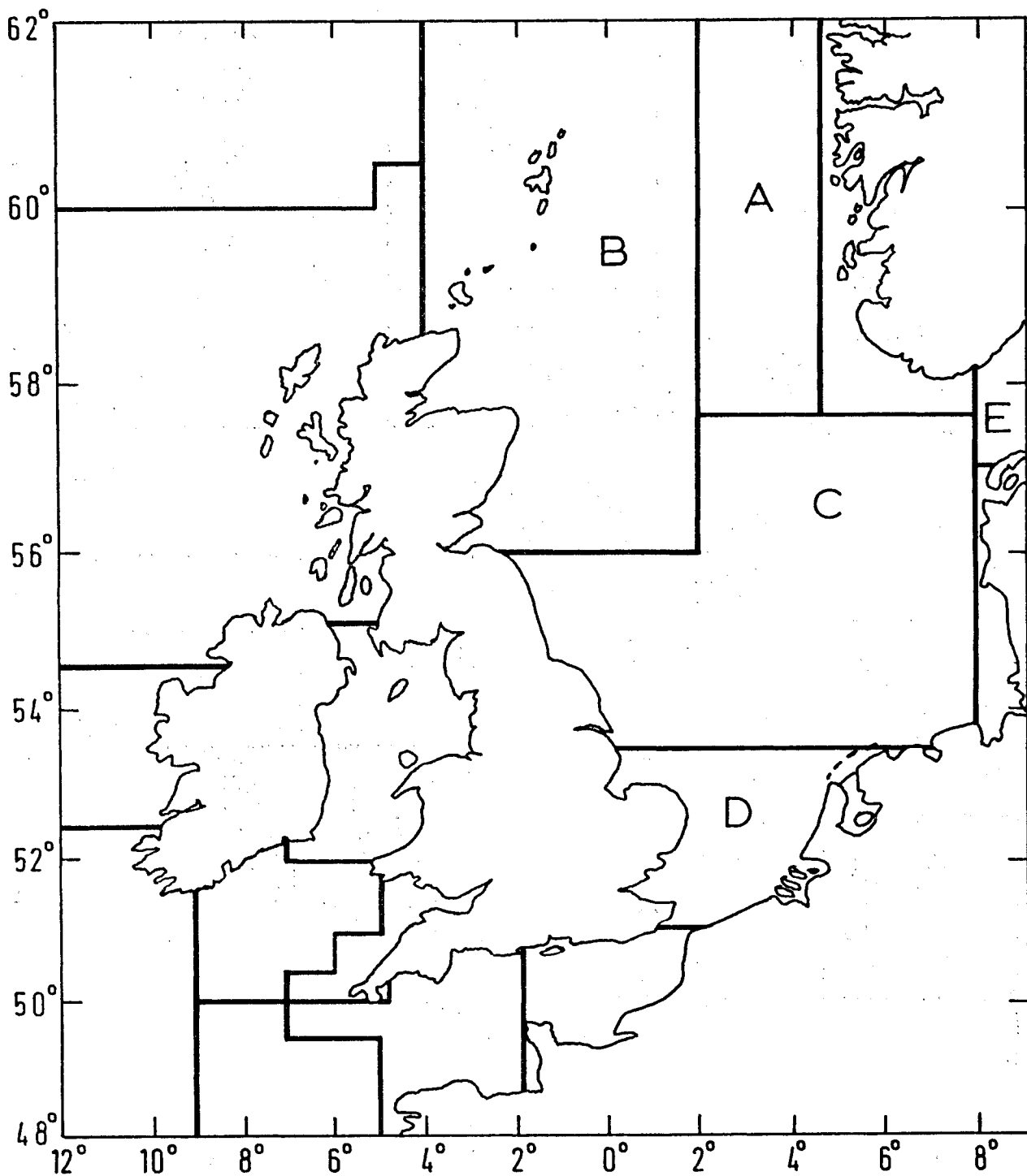


Figure 1 Areas used for reportage of past-time herring statistics.
(Statistical Newsletter No. 11 A, 1961.)

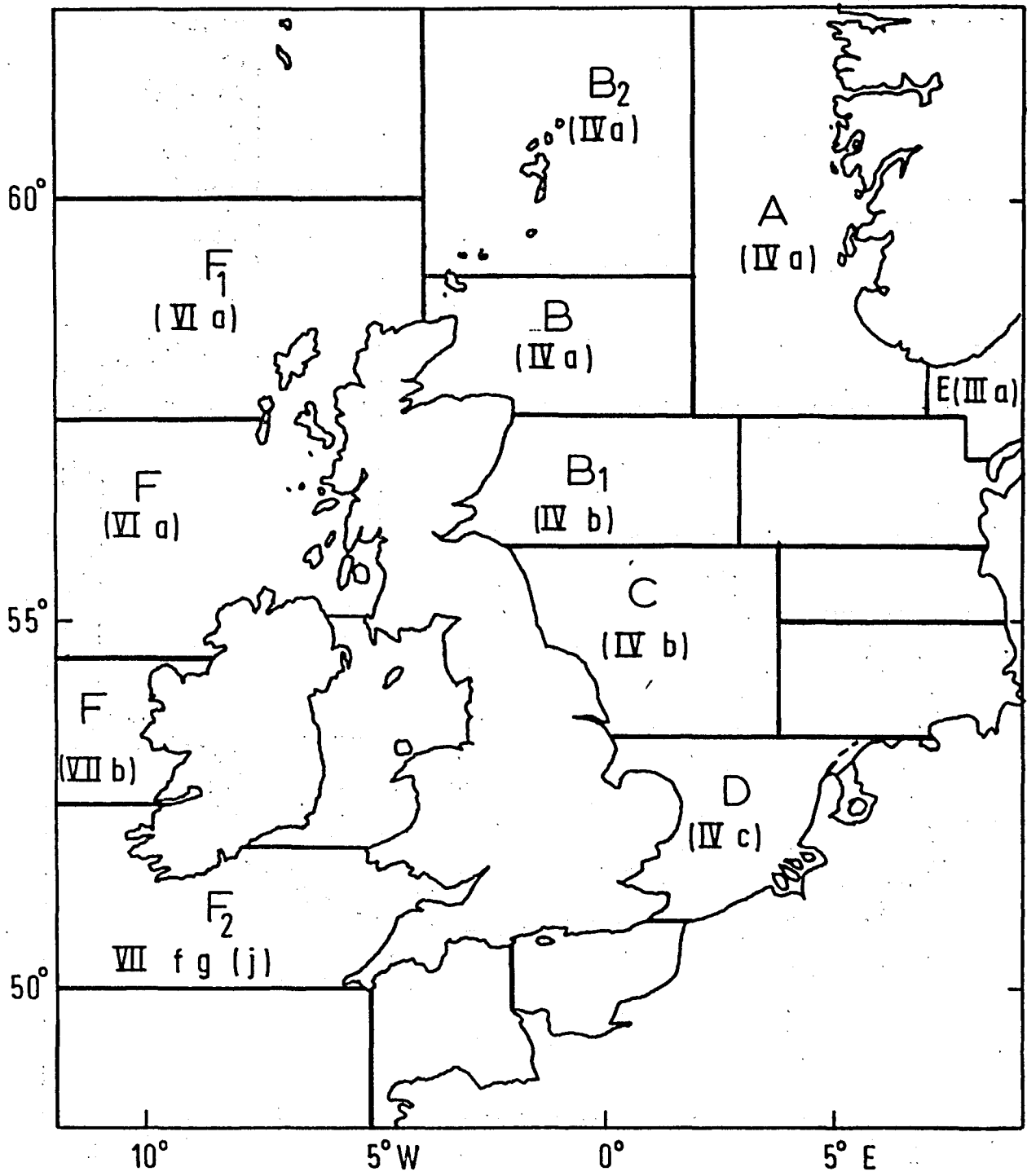


Figure 2 Chart showing the German statistical rectangles for fishing areas.

Designations in brackets indicate that the areas cover only part of the corresponding ICES divisions. The northern boundaries of A and B₂ are 62°N.

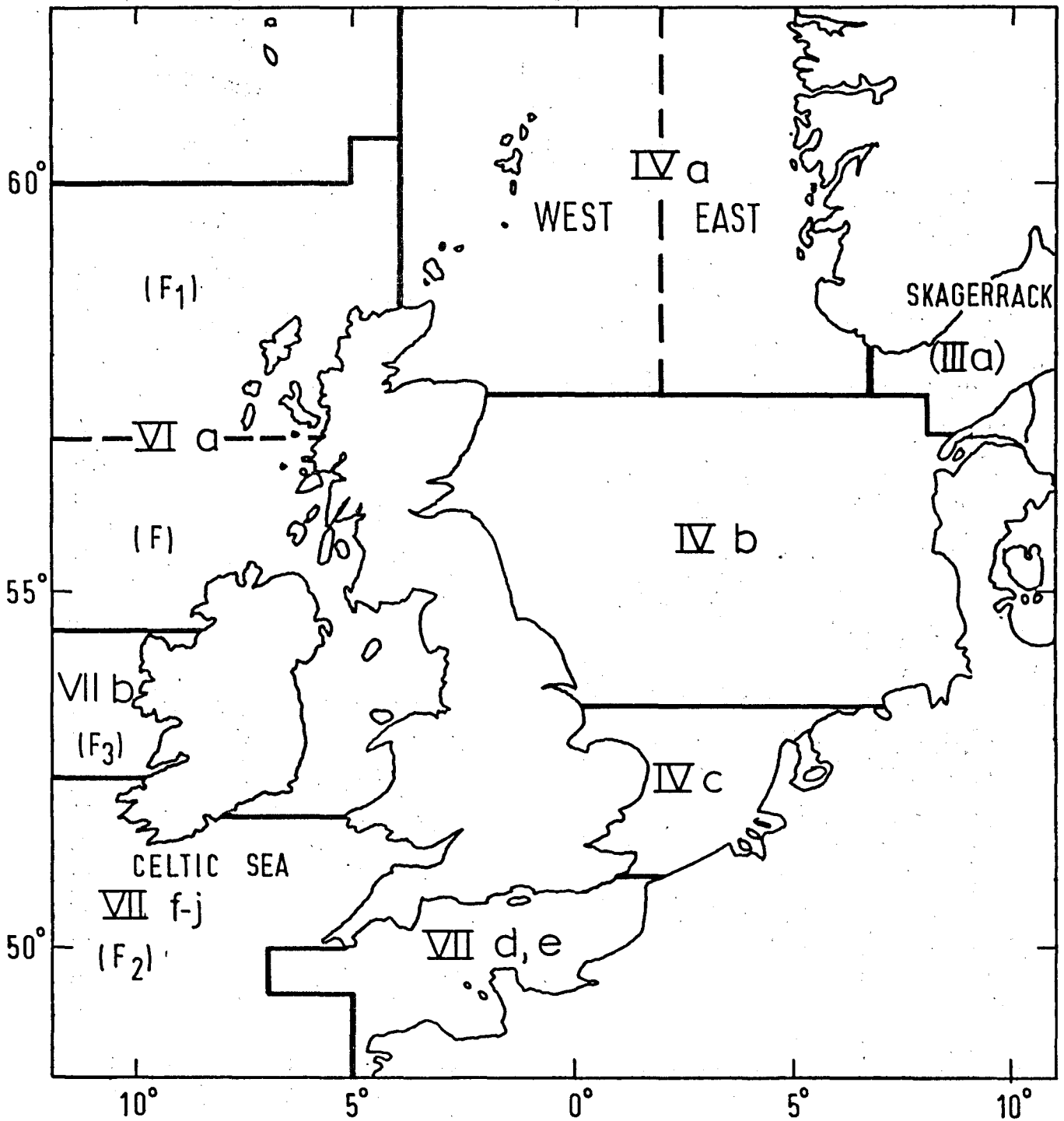


Figure 3 Roman figures (as IV, VI and VII) refer to ICES statistical areas. Areas F-F₃ are originally German statistical areas. (From ICES Coop. Res. Rep. No. 21.)

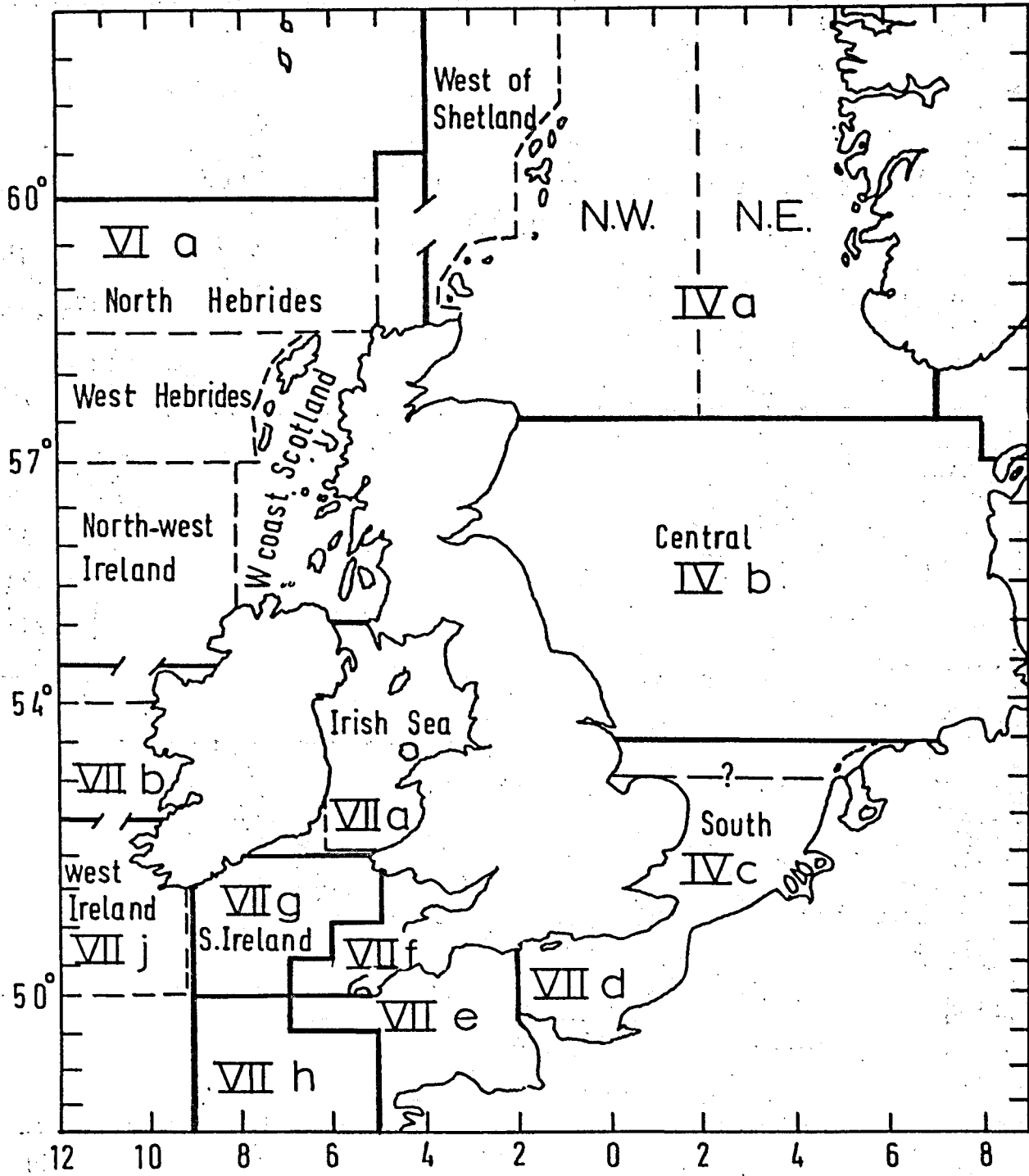


Figure 4

Suggested boundaries of areas for reportage of pelagic catches in Statistical Newsletters.

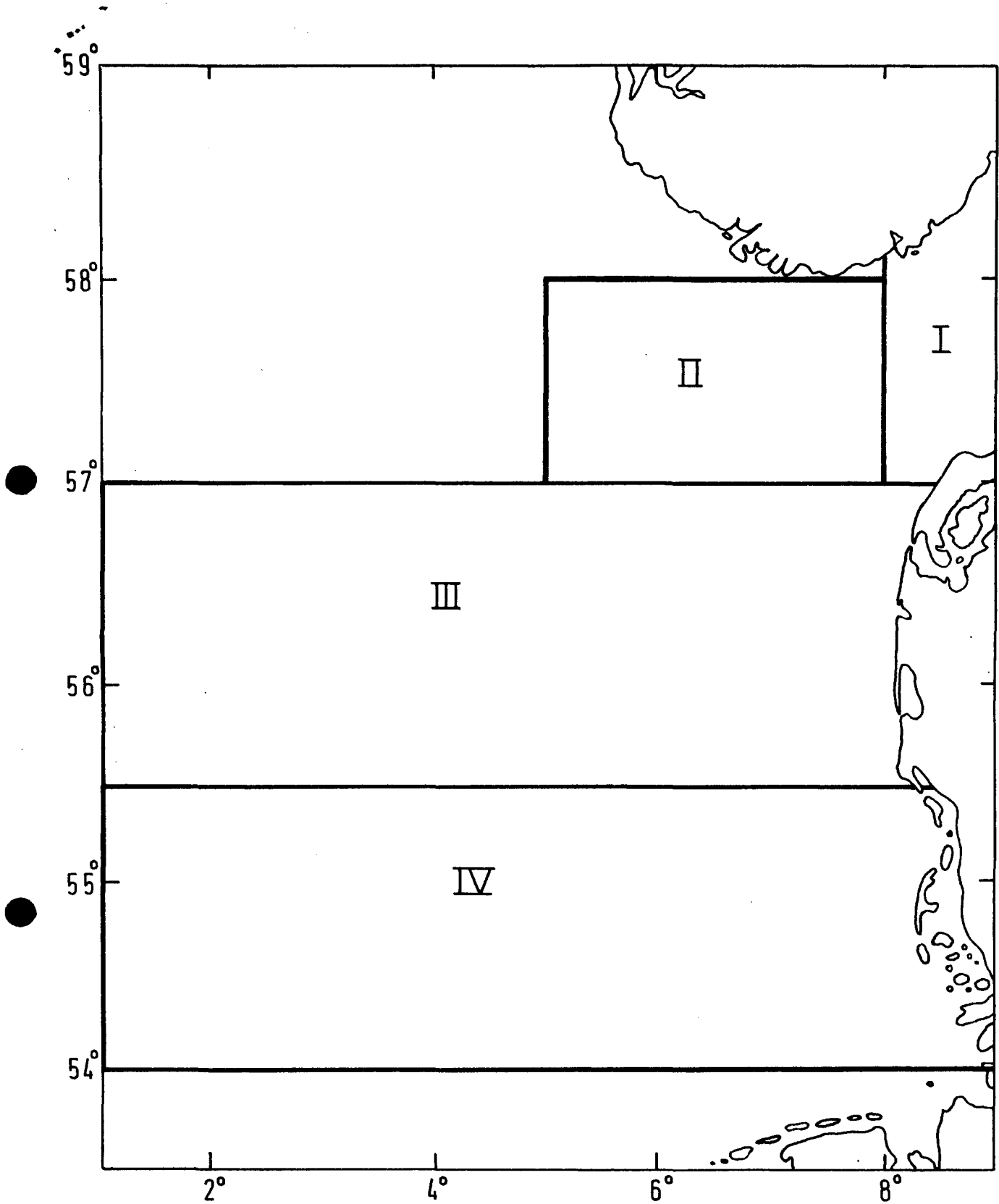


Figure 5 Statistical areas used for reportage of Danish industrial herring catches.