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Fishing Operations across the Eastern Boundary of ICES Subdivision V_{b1} .

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Introduction:

It is not possible to design systems of statistical divisions, which form unit areas for all stocks. The system of statistical divisions and subdivisions has to be some compromise.

Further a very conservative attitude towards changes in boundaries of established statistical areas has to be taken in order not to disrupt long time series.

However, in some cases smaller modifications would seem natural, in view of the bottom topography of the areas, biological indications and from an assessment of how a change will affect the long time series.

In this paper it is suggested that the northern and eastern boundaries of ICES subdivision V_{b1} are moved. The Faroe Area is from most points of view a self containing ecological unit, although migrations outside the area are common in some stocks. Some of these migratory stocks are part of an East Greenland - Iceland - Faroe complex, distinct from a complex in the North East Arctic.

With the present boundary and recent development in the fisheries in deep water, some of the catches from the Faroe Area will be referred to the ICES division II_a , thus being added to the N.E. Arctic complex.

DEMONSTRATION OF THE PROBLEM.

The problem arises in the combined saithe-redfish-blueling fishery in deep water off Faroe. A fraction of large Faroese trawlers take part in this fishery, together with distant water trawlers from the Federal Republic of Germany.

The following information is at hand: Detailed bottom topography, general information about the stocks, and catch and effort data for the fishing fleet of Federal Republic of Germany (FRG) and Faroese fleet units.

The bottom topography has been taken from a chart based on information from FRG colleagues. The general information about the stocks has been taken from relevant ICES publications (esp. Coop.Res.86). The FRG catch and effort data are the reported number of fishing days by statistical rectangle reported to the Faroese Enforcement authorities. Only data for 1978 and 1979 are available.

The Faroese catch and effort data have been derived from the FISKHAG databank (see Coop.Res. 91). The data have been processed by plotting catch and effort by boat

categories, months and statistical rectangle. This has been done for 12 boat categories for the years 1973 to 1979. These twelve categories include 6 classes of trawlers, 3 classes of line boats, 2 classes of hand liners, and one class of gill netters.

TOPOGRAPHY AND STOCKS AND PRESENT STATISTICAL BOUNDARIES.

The Faroe Area is in many aspects a distinct ecological province.

Some of the main stocks are unit stocks in the area. The deeper waters around the islands are, however, inhabited by species, which are part of larger complexes. The knowledge about this is very limited, but to mention the stocks which are of interest in the present context:

Redfish in the Faroe Area is assessed as part of an area V-XIV complex, (the same is the case for Greenland Halibut, for which a fishery has started in 1980).

Blue ling is not assessed by any ICES WG at the moment, but it is a present assumed to comprise one stock distributed along the continental slope west of the British Isles, Faroes and south west of Iceland.

Saithe is assessed as a separate Faroese unit stock.

These three stocks are thus at present, at least, regarded as quite separate from the stocks in the N.E. Arctic, which usually are referred to as the subarea I and II complexes.

Looking at the bottom topography (fig. 1) the depths to the north and east of the Faroe Plateau suggest a definite physical boundary. The present subdivision Vb1 seems to cover this quite well. There are, however, two exceptions. One is the eastward extension of the plateau, it is depths in the range 400 to 1000 m east of the Plateau, in fig. 1 called area 2.

The other one is the part of the Faroe Icelandic Ridge which lies between 63° and 63°30' N and 9° and 11° W, area 1. Both these areas are with modern gear technology accessible to the larger trawler, and there is an "overspill" to these areas from fishery in subdivision Vb1.

Both area 1 and 2 at present are included in ICES division IIa, and thus catches in these two areas should correctly be reported to this division.

This again probably mean that these catches are included into the N.E. Arctic Stock complexes.

RESULTS FROM THE CATCH EFFORT DATA.

The Faroese data indicate, that this problem has not existed before last year. After the introduction of 200 EEZ there has been large increase in effort by Faroese trawlers in subdiv. Vb1. The larger part of the Faroese trawlers, the part with the larger HP, have moved to deeper and deeper waters.

The analysis shows that this did not happen until 1979. In 1979 5 trawler classes are reported overspill fishery to a varying degree. The details on this given in fig. 2 and table 1.

In the FRG data the problem seems to be a minor one in 1979, but the overspill into area IIa was rather more extensive in 1978. Fishing days by stat. rect. in the FRG fleet are given in fig. 3 and 4.

DISCUSSION.

The data presented here seem to suggest rather strongly that the eastern and

northern boundaries of subdivision Vb1 should be changed.

This raises the other problem. Will then data reported according to this be comparable to older data.

For the Faroese long term series, there seems to be no problem in area 2 .

This overspill fishery is a quite new feature and detailed data are at hand. As a matter of fact, these overspill catches, despite the present boundaries, have been reported to subdivision Vb1, in the Statlant system, for 1979.

The only other country that poses a problem in area 2 both in the long and in the short term is Federal Republic of Germany.

The FRG fishery in subdivision Vb1 for redfish has been reported back to the 50^{ies} in significant amounts. Also catches of blue ling have been significant whereas Greenland Halibut has been of little importance.

Perhaps there is information in FRG files to quantify this problem.

As regards the northern boundary (area 1, fig. 1), there might be a problem in the Faroese long term series. Fishing on the "Ridge" - has to a varying degree gone on for many years. It is not possible to obtain data to assess how large the proportion taken in the area 1 has been. But it is quite certain that none of this has been reported to subdivision IIa. If not reported to subdivision Vb1 it certainly has gone into div. Va.

Thus from biological, physical and other reasons it seems natural to recommend a change both in the eastern and northern boundary of division Vb1, and the problem of disrupting a long time series seems not to preclude this.

The suggested changes is to include area 1 and 2 (in fig. 1) in subdivision Vb1.

References: Cooperative Research Report 86

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TABLE 1

Catches and efforts reported from-overspill-fishery from subdivision Vb1 to division IIa. Faroese trawlers.

A 1979 catches, tons nominal weight.

All classes of trawlers, both overspill areas.

Species:	
Redfish	1056
Blue Ling	106
Saithe	294
Total	1456

B Effort and catch by trawler classes in the two overspill areas.

1979

	Effort (hours trawled) % of total effort by class		Catch, all species tons nominal weight	
	Area 1	Area 2	Area 1	Area 2
<400 HP	-	-	-	-
400-700 HP	1.2	-	17	-
700-1000 HP	-	0.8	-	83
>1000 HP A)	0.7	-	70	-
B)	0.6	14.1	73	1051
C)	1.0	2.5	98	64
Total			258	1198

- A) Only fishing at Faroe
- B) Fishing at Iceland and Faroe
- C) Fishing in distant waters and Faroe

For actual distribution by statistical rectangle, see fig. 2

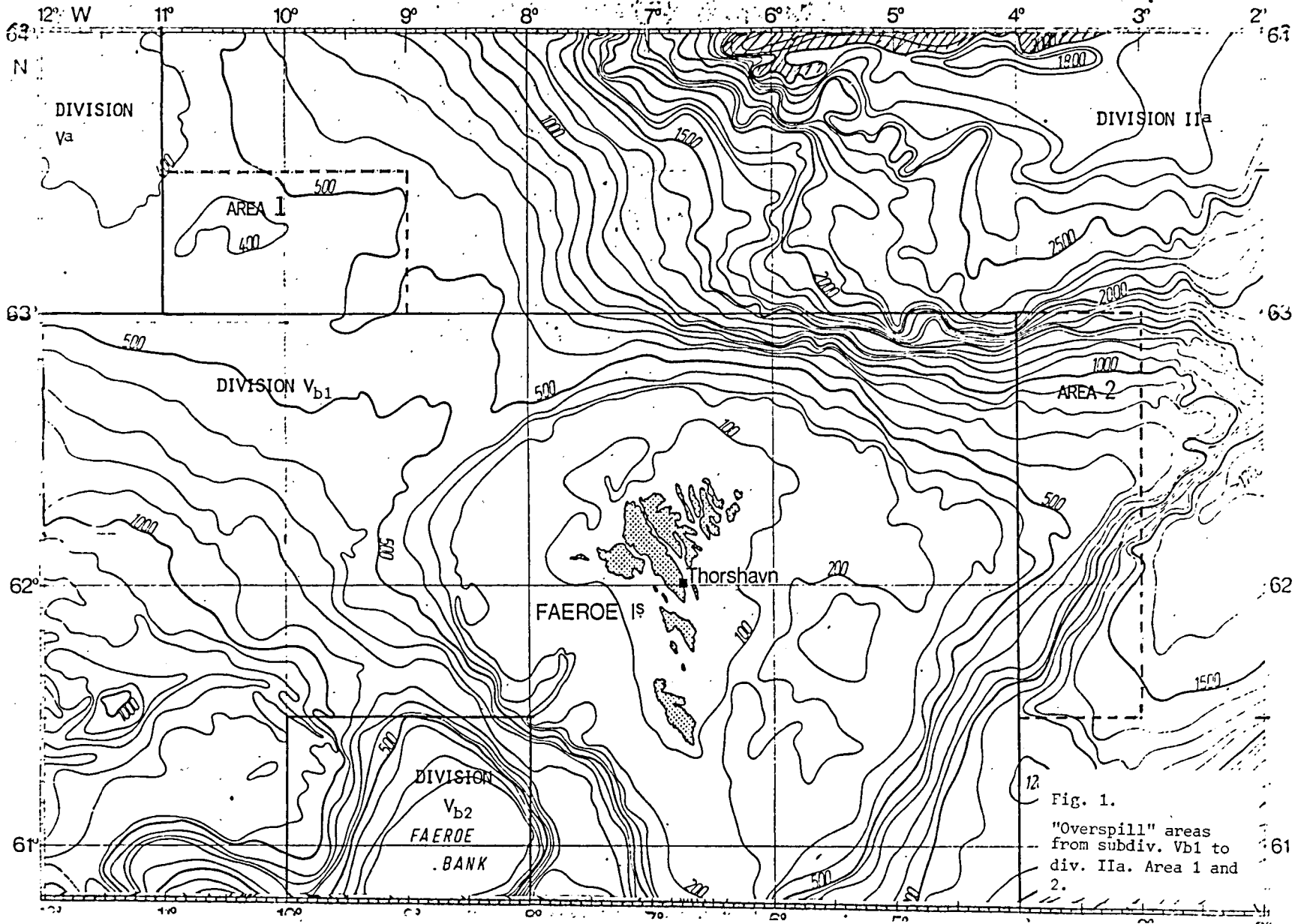


Fig. 1.
 "Overspill" areas
 from subdiv. Vb1 to
 div. IIa. Area 1 and
 2.

