CWP-20/ICES.B

January 2003

منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Organización de las Naciones Unidas para la Agricultura y la Alimentación

COORDINATING WORKING PARTY ON FISHERY STATISTICS
Twentieth Session
Victoria, Seychelles, 21-24 January 2003
Refining Statistical Divisions in FAO Area 27 ICES Divisions V, VIb, X, XII and XIVb

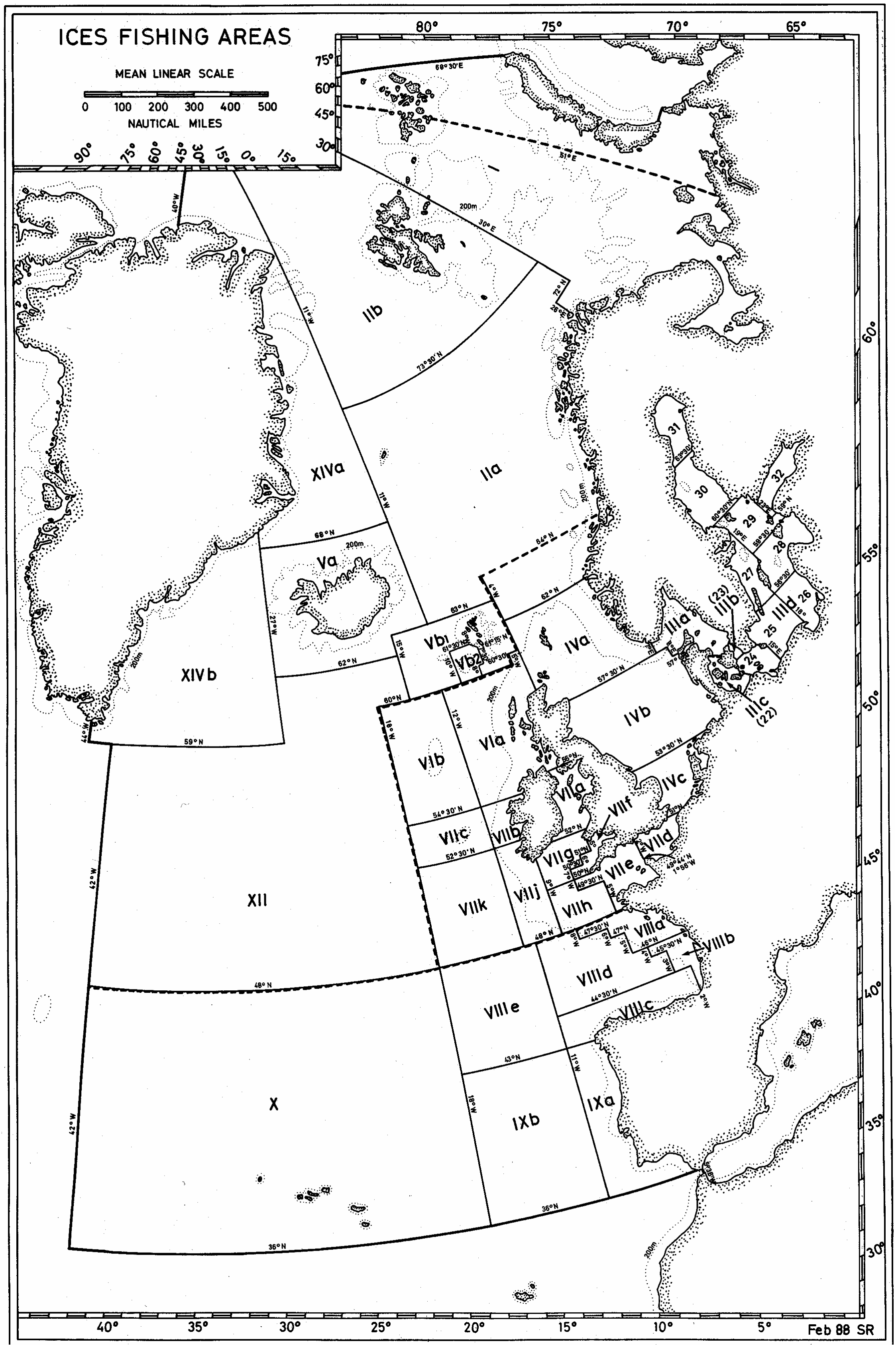
1 BACKGROUND

NEAFC, Eurostat and ICES have worked on defining necessary refinements because

- NEAFC requires statistics in its regulatory area
- Deep water fisheries have developed in areas where there previously was no or very little bottom fishing

ICES and CWP in 1981 specified criteria for subdividing divisions in the future. These criteria states that any subdivision should be confined to subdividing existing divisions and no new areas which cut across existing boundaries should be allowed. The key concern was to maintain time series of catch data.

The present ICES divisions are shown in map 1.


ICES FISHING AREAS
MEAN LINEAR SCALE
0 100 200 300 400 500
NAUTICAL MILES
IIb
IIa
XIVa
XIVb
Va
Vb1
Vb2
IVa
IVb
IVc
IIIa
IIIb
IIIc
IIId
(23)
(22)
VIa
VIb
VIIa
VIIb
VIIc
VIId
VIIe
VIIf
VIIg
VIIh
VIIj
VIIk
VIIIa
VIIIb
VIIIc
VIIId
VIIIe
IXa
IXb
XII
X
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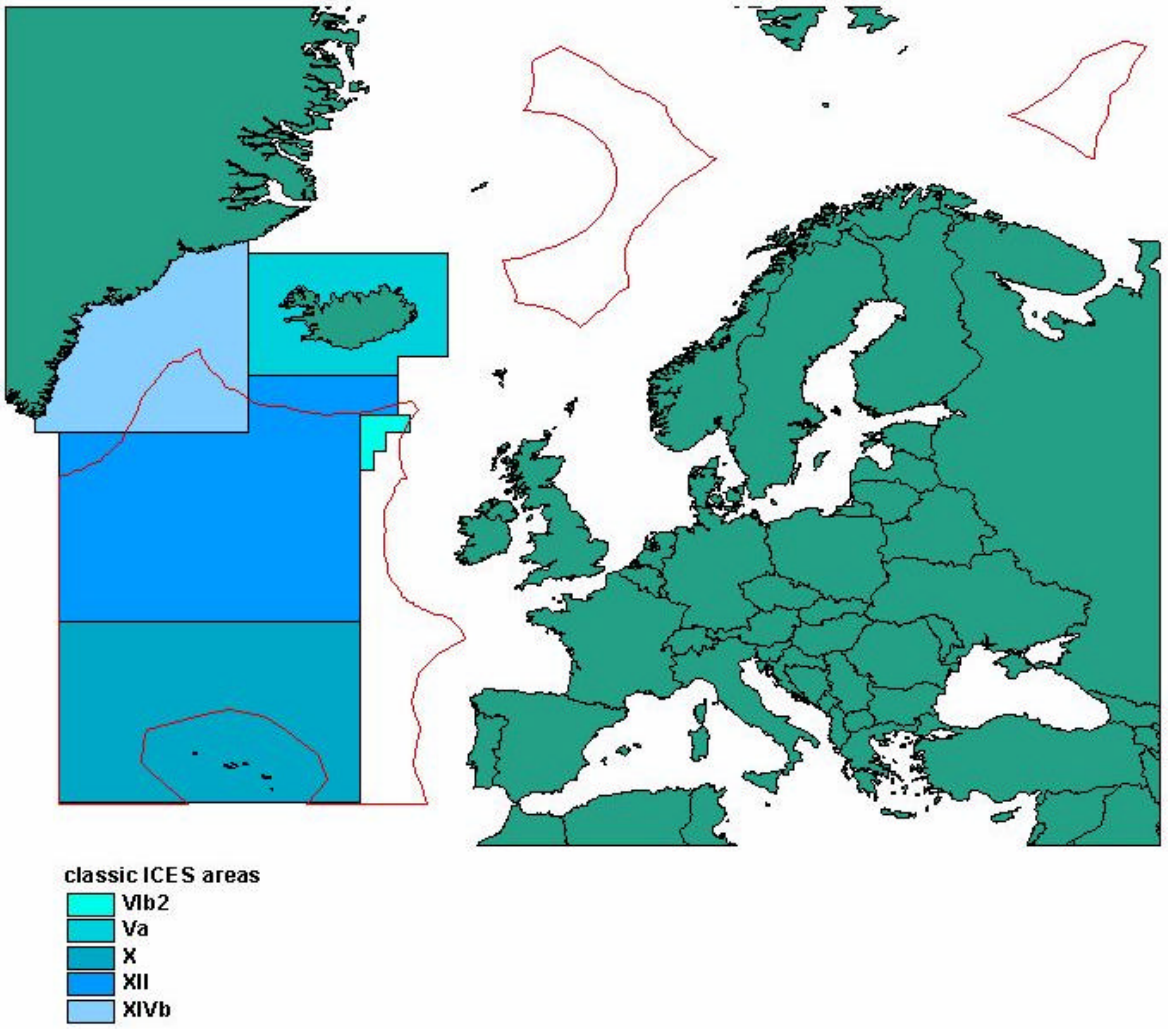
2 NEAFC REGULATORY AREA - NEAFC AREA I, II AND III

The NEAFC Regulatory Area (FAO Area 27 outside EEZs) falls into three areas:

- "Smuthullet" NEAFC Area I (in ICES Division I)
- "Smuthavet"NEAFC Area II (in ICES Division IIa)
- The international water in the Northeast Atlantic proper NEAFC Division III (in ICES Divisions Vib, X, and XII)

Map II shows the existing ICES Divisions and the NEAFC areas.


classic ICES areas
VIb2
Va
X
XII
XIVb

3 NEEDS FOR STATISTICAL INFORMATION FOR DEEPWATER FISHERIES

3.1 ACFM ANALYSIS

Assessment of deep water fish resources requires data with better geographically resolution than presently is provided. ACFM based on a request from NEAFC concerning advice on exploitation of the deep water fish resources reported in 2001 (CRR 247 ACFM report for 2001)

Advice improve data-collecting systems and advice on appropriate improvement for monitoring deep-sea resources.

Assessments of deep-water species depend on retrospective time-series of catch and effort. Currently used time-series are referenced to ICES Sub-areas and Divisions or aggregates of these. Because of the patchy distribution of deep-water fish interpretation of such time-series depends on knowledge of the fishing grounds where these catches were taken. Therefore, detailed spatial information on catch and effort is important. Landings and effort data on more relevant reporting areas, such as rectangles would be of special importance for fisheries statistics for Sub-area XII.

ICES finds that the existing data could be improved by:

- Providing more detail on spatial information on where the fishing took place. Many deep-sea species extend their occurrence over very wide areas, but with very uneven distribution within these areas. Information on a fine scale would be of great value to the assessments.

- Including the depth of the fishing ground in the logbook.

- Expanding the species list to include request for information on sharks and rays.

NEAFC issued in 1998 "Recommendation on a scheme of control and enforcement in respect of fishing vessels fishing in areas beyond the limits of national fisheries jurisdiction in the convention area ("The scheme"). This scheme was entered into force on 1 July 1999. The EU has implemented corresponding reporting practices for their own and non-EU vessels fishing within its EEZ.

Articles 7 and 8 of the NEAFC scheme conceming logbooks and reporting of catch and effort are those most relevant to the ICES work on deep-sea resources. ICES has attempted to identify desired changes with the view to facilitate the improvement of basic information and data flow to the assessment process.

Spatial Information

In accordance with Article 7b (and Annex IV), logbooks shall contain species-specific catch and effort information on the spatial scale of 'small statistical rectangle or fishing location'.

The fishery for deep-water species are under VMS satellite tracking, a system that provides very detailed information on the position of the vessel. Such detailed data will be subject to confidentiality considerations, but it may be an efficient solution to the statistics problem to link the logbook databases with the VMS databases with a time lack. From a stock assessment point of view such a time lag of between 3 and 6 months would be acceptable.

However, such detailed statistics have not consistently been available. Usually data only allow an aggregate catch and effort estimate on the scale of ICES Sub-area or Division, and this system of areas is not suitable for deep-sea fish stocks. It would therefore be of great value to the assessments if data on the requested finer-scale data were made available. This would enable aggregation of catches by more natural sub-areas. It is therefore suggested that catch and effort data by statistical rectangle be provided to ICES.

ICES should cooperate with NEAFC and together explore the possibility of compiling a database from which time-series of data by statistical rectangles can be constructed.

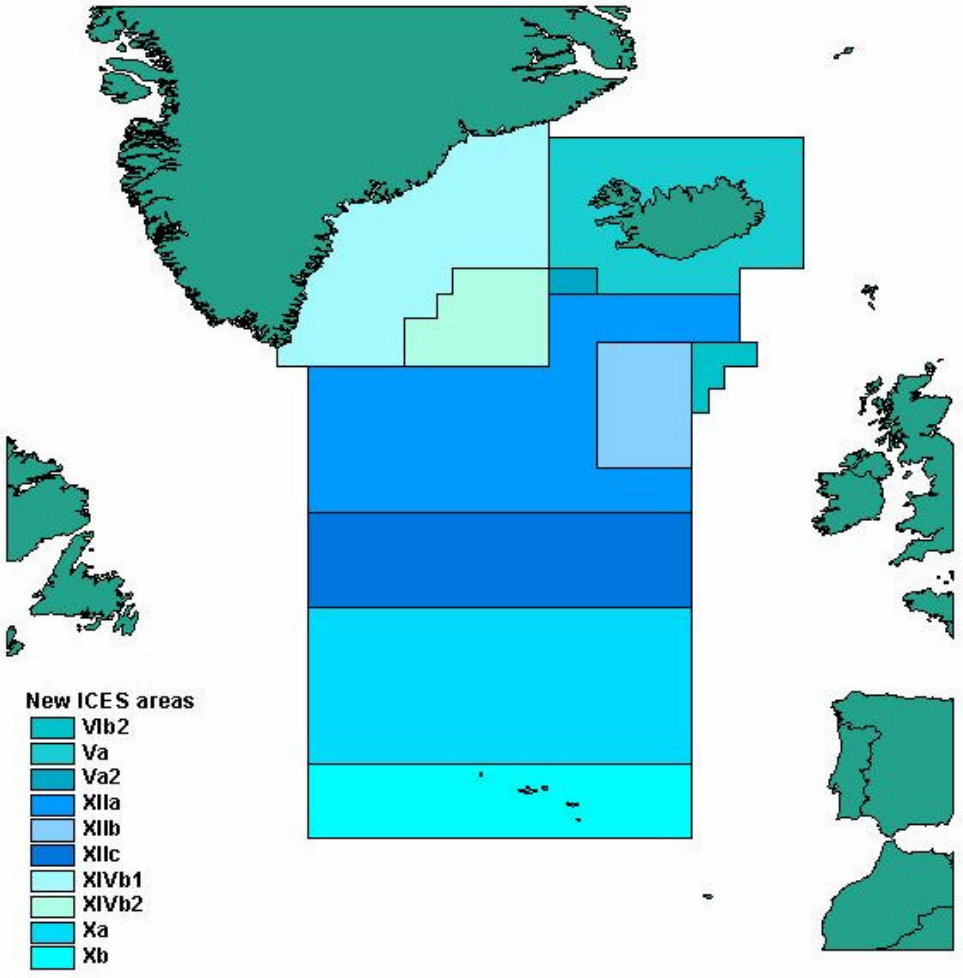
3.2 PROPOSAL FOR REVISION OF STATISTICAL DIVISIONS

This analysis suggests that the best option is to provide catch and effort data by statistical rectangles and by depth. However, access to such data, i.e. combining logbook information with fleet based catch statistics seems to be difficult

to obtain on an international scale. Also, to scale the the logbook information to the total landings would provide detailed geographical breakdown of the landing statistics. Clearly, the present large divisions (Divisions X and XII) are far from satisfactory.

Deep water fisheries exploits distinct areas, e.g. well defined banks, slopes, ridges and holes. The stock structure and in particular the exchange between populations living on the bottom features is largely unknown but is a matter of serious concern. When interpreting CPUE data as population trends it is essential that the data can be related to well defined areas. While the CPUE data normally are obtained from logbooks directly without using landing statistics proper interpretation of trends requires that the scale of the operation, i.e. the total catch from the area is known. There is a clear need for catch data in more geographical detail than is presently provided through the STATLANT programme.

With a view of improving the usefulness of fisheries statistics for assessment purposes the chair of the WGDEEP proposed a breakdown of the divisions. This proposal is shown in Map III.


New ICES areas
VIb2
Va
Va2
XIIa
XIIb
XIIc
XIVb1
XIVb2
Xa
Xb

4 EFFECTS ON OTHER FIS HERIES

4.1 REDFISH ON THE REYKJANES RIDGE AND IN NAFO DIVISION 1F

A fishery on oceanic redfish takes place in ICES divisions Va, XII, XIVb, and in NAFO 1F. This fishery would occur mainly in using the proposal from WGDEEP in XIVb2, Va2 and XIIa.

5 PROPOSAL FOR REVISION

The existing ICES Divisions are maintained and their definition are unchanged, see FAO Handbook of Fisheries Statistics.

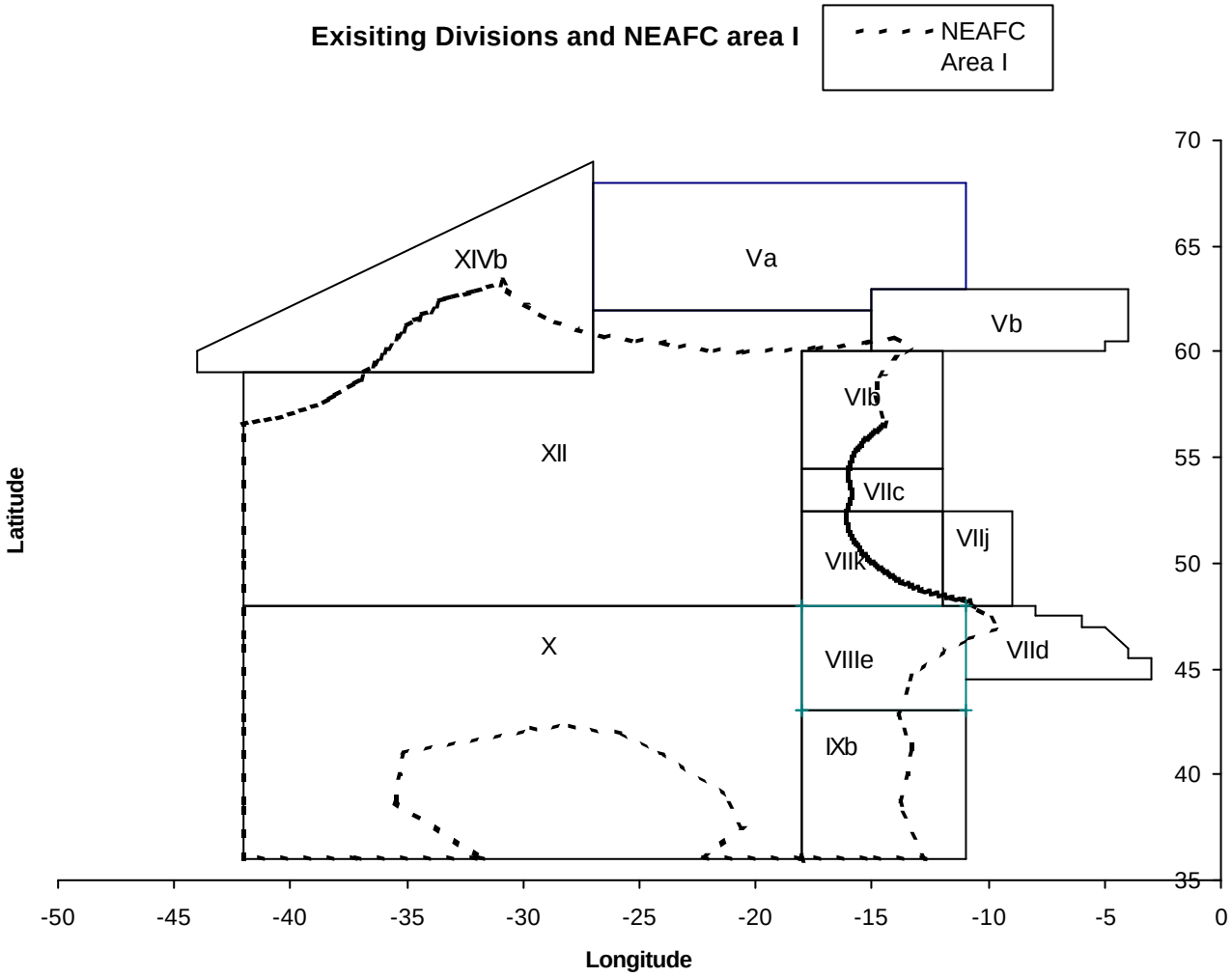
The proposal includes split of the following ICES Divisions:

- I into "Smuthullet" as Ia and the Norwegian and Russian EEZ as Ib;
- IIa into "Smuthavet" as division IIa1 and the remainder of IIa into IIa2;

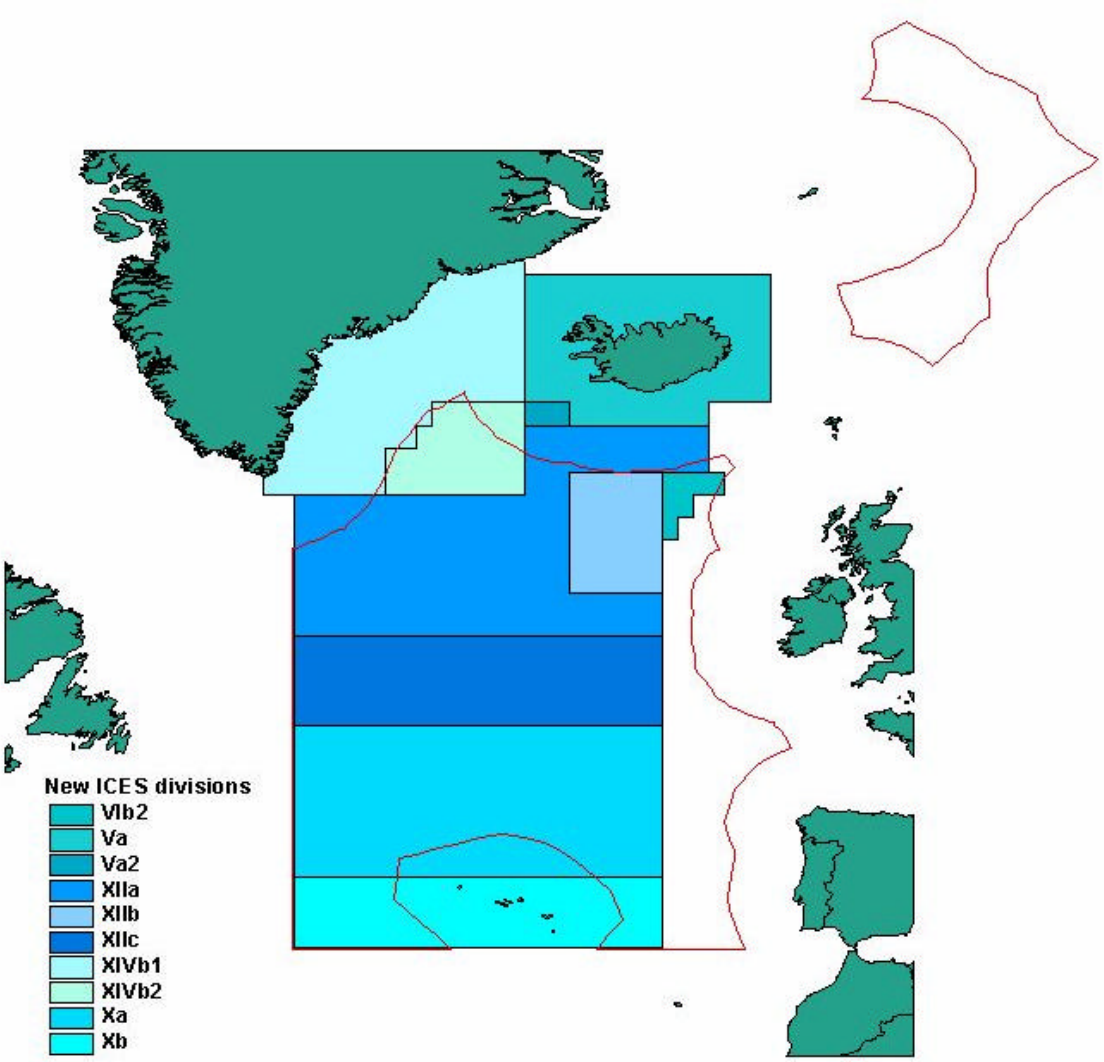
The remaining areas involves NEAFC area I

- Va into Va1 (southwestern corner of Va) and Va2 (remaining part of Va);
- XIVb into
    - XIVb1(inside Greenland EEZ)
    - XIVb2 (Inside Iceland EEZ)
    - Remaining part of XIVb (Outside EEZ)
- VIb into VIb1 (Hatton Bank, VIb outside EEZs) and VIb2 (remainder of VIb);
- XII into XIIa, XIIb, XIIc (XIId?)[This is not fully analysed and needs further considerations]
    - Northwestern corner of XII (Greenland EEZ)
    - Northern part of XII inside Iceland EEZ
    - Hatton Bank
    - Northern part of XII outside EEZ and without Hatton Bank
    - Southern part of XII
- X into Xa (Azores), Xb (remainder of Division X)
- VIIc, VIIk, VIIe, IXb each into a division inside the EEZ (EU) and a Division outside.

Coordinates for the various areas are provided in Annex I.


Exisiting Divisions and NEAFC area I
NEAFC Area I
XIVb
Va
Vb
VIb
XII
VIIc
VIIj
VIIk
X
VIIIe
VIId
IXb
Latitude
Longitude
70
65
60
55
50
45
40
35
-50
-45
-40
-35
-30
-25
-20
-15
-10
-5
0

b


New ICES divisions
VIb2
Va
Va2
XIIa
XIIb
XIIc
XIVb1
XIVb2
Xa
Xb

Proposed new Divisions and Sub-divisions of ICES Sub-areas VI, V, X , XII and XIV.

Sub-area VI		
Sub-division VIb1 (Rockall)		
	Remainder of VIb when excluding VIb2)	
Sub-division VIb2 (eastern Hatton Bk)		
	Lat (N)	Lon (W)
	60	14
	59	14
	59	16
	58	16
	58	17
	57	17
	57	18
	60	18
	60	14
Sub-area XII		
Division XIIa (Southern Reykjanes Ridge south to Charlie-Gibbs Fracture Zone)		
	Present Sub-area XII bordered to the south by Lat 52°30' N	
Division XIIb (western Hatton Bank)		
	60	18
	5430	18
	5430	24
	60	24
Division XIIc		
	Present Sub-area XII between 52°30' N and 48°00' N	
Sub-area X		
Division Xa		
	Present Subarea X south to 40 N	
Division Xb		
	Present Subarea X south of 40 N (essentially the Azores)	
Sub-area XIV		
Sub-division XIVb1		
	Remainder of XIVb when excluding XIVb2 (essentially East Greenland and most of Irminger Sea)	
Sub-division XIVb2 (The portion of the Reykjanes Ridge now included in XIV)		
	63	27
	59	27
	59	36
	61	36
	61	34
	62	34
	62	33
	63	33
	63	27

Sub-area V		
Sub-division Va1 (Iceland shelf, except Reykjanes Ridge)		
Sub-division Va2 (northern Reykjanes Ridge)		
	63	24
	62	24
	62	27
	63	27
	63	24

NEAFC Area I		NEAFC Area II		NEAFC Area III	
56.55	-42.00	67.61	-6.62	73.98	33.70
56.64	-41.50	67.77	-5.33	74.18	34.55
56.75	-41.00	67.96	-4.19	74.36	35.28
56.88	-40.50	68.10	-3.42	74.71	36.38
57.03	-40.00	68.33	-2.39	75.14	37.57
57.20	-39.50	68.55	-1.56	75.45	38.31
57.37	-39.00	68.86	-0.61	75.84	39.05
57.62	-38.50	69.14	0.08	76.26	39.61
57.78	-38.25	69.44	0.68	76.61	41.24
57.97	-38.00	69.76	1.18	76.90	42.81
58.26	-37.50	69.97	1.46	76.90	43.06
58.50	-37.20	70.21	1.72	76.75	44.68
58.63	-37.00	70.43	1.94	75.99	43.51
59.00	-36.77	70.63	2.09	75.39	43.18
59.35	-36.50	70.89	2.25	74.82	41.73
59.50	-36.35	71.14	2.35	73.98	41.56
59.75	-36.16	71.35	2.39	73.17	40.66
60.00	-35.96	71.61	2.38	72.20	40.51
60.25	-35.76	71.83	2.31	72.26	39.76
60.55	-35.50	72.01	2.22	72.62	38.96
60.75	-35.37	72.24	2.06	73.04	37.74
61.00	-35.15	72.43	1.89	73.37	36.61
61.25	-34.97	72.60	1.68	73.56	35.70
61.50	-34.65	72.75	1.48	73.98	33.70
61.60	-34.50	72.99	1.08		
61.75	-34.31	73.31	0.34		

61.98	-34.00	73.60	-0.48
62.25	-33.70	73.94	-1.88
62.45	-33.53	74.09	-2.70
62.50	-33.27	74.21	-5.00
62.56	-33.00	74.50	-4.38
62.69	-32.50	75.00	-4.29
62.75	-32.30	75.30	-4.19
62.87	-32.00	76.05	-4.30
63.03	-31.50	76.18	-4.09
63.25	-31.00	76.57	-2.52
63.31	-30.86	76.67	-2.10
63.00	-30.61	76.56	-1.60
62.23	-29.87	76.00	0.80
61.79	-29.25	75.87	1.12
61.44	-28.61	75.64	1.71
61.06	-27.69	75.21	3.06
60.69	-26.46	74.96	4.07
60.45	-25.09	74.86	4.55
60.37	-23.96	74.69	5.19
60.22	-23.27	74.34	6.39
60.02	-21.76	74.13	6.51
59.97	-20.55	73.89	6.74
60.05	-18.65	73.60	7.06
60.11	-17.32	73.45	7.28
60.44	-15.22	73.14	7.83
60.71	-13.99	72.76	8.65
60.15	-13.29	72.49	9.33
59.65	-13.99	72.31	9.83

59.01	-14.57	72.18	10.29
58.51	-14.79	71.98	9.94
57.87	-14.88	71.91	9.70
57.01	-14.63	71.64	8.75
56.57	-14.34	71.36	7.93
56.50	-14.44	71.13	7.42
56.44	-14.54	70.79	6.73
56.37	-14.62	70.17	5.64
56.31	-14.72	69.79	5.01
56.24	-14.80	69.56	4.74
56.17	-14.89	69.32	4.32
56.09	-14.97	69.10	4.00
56.02	-15.04	68.86	3.73
55.95	-15.11	68.69	3.57
55.88	-15.19	68.46	3.40
55.80	-15.27	68.23	3.27
55.73	-15.34	67.98	3.19
55.65	-15.41	67.77	3.16
55.57	-15.47	67.57	3.15
55.50	-15.54	67.37	3.18
55.42	-15.60	67.18	3.24
55.34	-15.65	67.01	3.31
55.26	-15.70	66.84	3.42
55.18	-15.75	66.43	3.27
55.09	-15.79	66.39	3.18
55.01	-15.83	66.23	2.79
54.93	-15.87	65.95	2.24
54.84	-15.90	65.64	1.79

54.76	-15.92	65.38	1.44
54.68	-15.95	65.32	1.26
54.59	-15.97	65.08	0.72
54.51	-15.99	64.72	0.04
54.42	-15.99	64.43	-0.49
54.34	-16.00	64.84	-1.31
54.25	-16.01	64.92	-1.56
54.17	-16.01	65.13	-2.17
54.08	-16.01	65.22	-2.54
53.99	-16.00	65.39	-3.19
53.91	-15.99	65.47	-3.73
53.82	-15.97	65.55	-4.19
53.74	-15.96	65.59	-4.56
53.66	-15.94	65.69	-5.58
53.57	-15.91	65.96	-5.60
53.49	-15.90	66.22	-5.67
53.42	-15.89	66.47	-5.78
53.34	-15.88	67.09	-6.25
53.26	-15.86	67.61	-6.62
53.18	-15.84		
53.10	-15.88		
53.02	-15.92		
52.94	-15.95		
52.86	-15.98		
52.77	-16.00		
52.69	-16.02		
52.61	-16.04		
52.52	-16.06		

52.44 -16.07

52.36 -16.08

52.27 -16.09

52.19 -16.09

52.11 -16.09

52.02 -16.08

51.94 -16.07

51.85 -16.07

51.77 -16.05

51.68 -16.04

51.60 -16.02

51.52 -15.99

51.43 -15.96

51.34 -15.93

51.27 -15.90

51.18 -15.86

51.10 -15.82

51.02 -15.77

50.94 -15.73

50.86 -15.68

50.78 -15.63

50.70 -15.57

50.62 -15.52

50.54 -15.47

50.47 -15.42

50.39 -15.36

50.32 -15.30

50.24 -15.24

50.17 -15.17

50.10 -15.11

50.03 -15.04

49.96 -14.97

49.89 -14.89

49.82 -14.82

49.75 -14.74

49.69 -14.65

49.62 -14.57

49.56 -14.48

49.50 -14.39

49.44 -14.30

49.38 -14.22

49.32 -14.13

49.27 -14.04

49.21 -13.95

49.15 -13.86

49.10 -13.77

49.05 -13.67

49.00 -13.57

48.95 -13.47

48.90 -13.37

48.86 -13.27

48.81 -13.17

48.77 -13.07

48.73 -12.96

48.69 -12.85

48.65 -12.74

48.62 -12.64

48.58 -12.54

48.55 -12.43

48.52 -12.32

48.49 -12.22

48.46 -12.11

48.42 -11.99

48.39 -11.87

48.36 -11.75

48.33 -11.64

48.30 -11.52

48.27 -11.39

48.25 -11.27

48.23 -11.14

48.21 -11.02

48.19 -10.89

48.17 -10.77

48.03 -10.68

47.77 -10.37

47.45 -9.89

46.88 -9.62

46.34 -10.95

45.90 -11.86

44.72 -13.31

44.07 -13.49

42.88 -13.84

42.04 -13.64

41.38 -13.27

41.13 -13.27

40.06 -13.49

38.75 -13.78

38.17 -13.69

36.03 -12.73

36.04 -15.30

36.02 -17.90

36.07 -18.04

36.04 -18.14

36.02 -22.25

37.58 -20.62

39.16 -21.32

40.97 -23.91

41.35 -24.65

41.91 -25.79

42.34 -28.45

42.05 -29.95

41.02 -35.11

40.04 -35.26

38.74 -35.48

36.03 -31.76

36.03 -32.03

36.03 -37.20

36.03 -42.03

38.64 -42.02

42.56 -42.02

46.54 -42.01

50.33 -42.03

56.54 -42.02

56.55 -42.00