



A century of sea fisheries in Belgium

A CENTURY OF SEA FISHERIES IN BELGIUM

Manual for standardization and geographical delineation of historical fishing grounds in Belgian sea fisheries statistics 1929–1999

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1. Introduction

Source documents with data on historical sea fisheries landings in Belgium (1929–1999) contain names of the fishing grounds of origin. Identification of these fishing grounds was not always straightforward: fishing areas changed names during the observed reporting period or disappeared (temporarily) from the statistics. These original source documents do not mention geographical co-ordinates for the reported fishing grounds. Therefore, external sources are needed for the geographical delineation of these areas. Standardization is a requirement for the integration of data in an integrated database. This manual explains the stepwise process of this standardization.

The geographical delineation of historical fishing grounds followed three steps:

- In the first step a list was drawn, containing all original names of fishing grounds as reported in sources of Belgian fisheries statistics during the period 1929–1999.
- Particular decision rules were used in the second step to allocate standardized names to the list of fishing areas as obtained in step 1.
- In the third step different external sources that contained geographical references to, or descriptions of, the fishing grounds were consulted. These sources were combined for the final delineation and description of the fishing grounds (see page 13 for the final map).





2. Stepwise process for standardization and geographical delineation of historical fishing grounds

Step 1 – Listing the fishing grounds as reported in historical sources of Belgian sea fisheries statistics in the period 1929-1999

Historical sources of Belgian sea fisheries statistics (1929-1999) contain a total of 40 different names for fishing grounds of origin (see table 1). Table 2 gives an annual overview of the names of fishing grounds as reported in historical sources. These original names were maintained in the digital MS Excel copies of the scanned original documents. For a description of the historical sources, see http://www.vliz.be/EN/Figures_Policy/Figures_Policy_Belgian_Sea_Fisheries and click "Collection of publications and other sources".

Table 1: List of the names of fishing grounds as reported in historical sources of Belgian sea fisheries statistics in the period 1929 -1999.

	Original name of fishing ground
1	Kustzee
2	Noordzee-Zuid
3	Noordzee-Midden
4	Noordzee-Midden-Oost (Witte Bank)
5	Noordzee-Midden-Oost
6	Witte Bank
7	Noordzee-Midden-West
8	Noordzee-Noord
9	Noordzee
10	IJsland
11	IJslandzee
12	Faroe
13	West-Schotland
14	Rockall
15	Moray-Firth
16	Noordzee - Moray Firth
17	Fladen
18	Noordzee - Fladen
19	Kanaal
20	Engels Kanaal
21	Bristol Kanaal
22	Kanaal van Bristol
23	Zuid-Ierland
24	West-Ierland
25	Zuid- en West-Ierland
26	Zuid- en West-Ierland (Mine Head)
27	Mine-Head
28	Ierse Zee
29	Portugal Marokko
30	Spanje
31	Portugal Marokko Spanje
32	Witte Zee
33	Witte Zee Beeren-eilanden
34	Beren-eiland
35	Frankrijk-West
36	Barentszzee
37	Labrador
38	Golf Gascogne
39	Groenland
40	Andere gronden





Step 2 – Standardizing names of fishing areas

Standardizing names or assigning standardized codes is a requisite for building up an integrated database or time series. In this second step standardized names were chosen for the fishing grounds. These standardized names (column 3 in table 3) were used in the integrated database. Table 4 gives an annual overview of the standardized names and fishing areas that are reported in the integrated database.

Particular decision rules were followed to assignate standardized names to the list original names of fishing areas as in step 1. In the last column of table 3 the decision rule for each fishing area is mentioned:

- A. The name of this fishing area did not change during the reporting period (1929 – 1999). The original name of the fishing ground was copied (with corrected spelling). The cardinal directions for fishing grounds in the North Sea were included between brackets.
- B. The name of the fishing area changed during the reporting period (1929 – 1999), but there was no doubt about the geographical location. The most illustrative name was used.
- C. The name of the fishing area changed during the reporting period (1929 – 1999) and there was doubt about the precise geographical location of the area. The name that refers to a wider geographical area was allocated.

Table 3: List of the names of fishing grounds as reported in historical sources of Belgian sea fisheries statistics (in the period 1929 -1999) with indication of standardized names and decision rules.

	Original name of fishing ground	Standardized name (Dutch)	English name	Decision rule
1	Kustzee	Kustzee	Coastal waters	A
2	Noordzee-Zuid	Noordzee (zuid)	North Sea (south)	A
3	Noordzee-Midden	Noordzee (midden)	North Sea (central)	A
4	Noordzee-Midden-Oost (Witte Bank)	Noordzee (midden-oost)	North Sea (central-east)	C
5	Noordzee-Midden-Oost	Noordzee (midden-oost)	North Sea (central-east)	C
6	Witte Bank	Noordzee (midden-oost)	North Sea (central-east)	C
7	Noordzee-Midden-West	Noordzee (midden-west)	North Sea (central-west)	A
8	Noordzee-Noord	Noordzee (noord)	North Sea (north)	A
9	Noordzee	Noordzee	North Sea	A
10	IJsland	IJslandzee	Iceland Sea	B
11	IJslandzee	IJslandzee	Iceland Sea	B
12	Faroe	Faeröer / Faroe	Faroes	A
13	West-Schotland	West-Schotland	West Scotland	A
14	Rockall	Rockall	Rockall	A
15	Moray-Firth	Moray-Firth	Moray-Firth	B
16	Noordzee - Moray Firth	Moray-Firth	Moray-Firth	B
17	Fladen	Fladen	Fladen	B
18	Noordzee - Fladen	Fladen	Fladen	B
19	Kanaal	Engels Kanaal	English Channel	B
20	Engels Kanaal	Engels Kanaal	English Channel	B
21	Bristol Kanaal	Kanaal van Bristol	Bristol Channel	B





Table 3 (continued): List of the names of fishing grounds as reported in historical sources of Belgian sea fisheries statistics (in the period 1929 -1999) with indication of standardized names and decision rules.

	Original name of fishing ground	Standardized name (Dutch)	English name	Decision rule
22	Kanaal van Bristol	Kanaal van Bristol	Bristol Channel	B
23	Zuid-Ierland	Zuid-Ierland	South Ireland	A
24	West-Ierland	West-Ierland	West Ireland	A
25	Zuid- en West-Ierland	Zuid- en West-Ierland	South- and West Ireland	C
26	Zuid- en West-Ierland (Mine Head)	Zuid- en West-Ierland	South- and West Ireland	C
27	Mine-Head	Zuid- en West-Ierland	South- and West Ireland	C
28	Ierse Zee	Ierse Zee	Irish Sea	A
29	Portugal Marokko	Portugal Marokko	Portugal Morocco	A
30	Spanje	Spanje	Spain	A
31	Portugal Marokko Spanje	Portugal Marokko Spanje	Portugal, Morocco Spain	A
32	Witte Zee	Witte Zee	White Sea	A
33	Witte Zee Beeren-eilanden	Witte Zee - Bereneiland	White Sea-Bear Island	A
34	Beren-eiland	Bereneiland	Bear Island	A
35	Frankrijk-West	Frankrijk-West	West France	A
36	Barentszzee	Barentszzee	Barentsz Sea	A
37	Labrador	Labrador	Labrador	A
38	Golf Gascogne	Golf Gascogne	Gulf of Gascogne	A
39	Groenland	Groenland	Greenland	A
40	Andere gronden	Andere gronden	Other areas	A





Step 3 – Geographical delineation of fishing grounds (based on standardized names)

For the delineation of the fishing areas (based on standardized names) different sources were consulted:

- Map from a publication on Belgian Sea Fisheries in 1959 by Vanneste and Hovart (1959)¹
- Current map with ICES fishing areas² and map with ICES fishing areas from a publication on Belgian sea fisheries in 1982 (Omey, 1982)³
- The VLIZ Marine Gazetteer website.

Source: map from 1959

Vanneste and Hovart (1959) described the location of different fishing grounds. These descriptions were copied in table 5 and the corresponding map, further referred to as 'map 1959', is presented in figure 1. Fishing ground xii (IJsland and Fär-Oer) was not described in this publication.

Table 5: Description and location of different fishing grounds according to Vanneste and Hovart (1959).

Fishing ground	Location
Kustzee (i)	As far as 20 miles from the low-water mark of the east coast of the North Sea, between the line 'Griz Nez-South Foreland' and the parallel of IJmuiden
Noordzee-zuid (ii)	Except the 'Kustzee'. Area between 51°N and 53°30' N, part of the 'Duitse Bocht' included
Noordzee-midden (west) (iii)	Area between 53°30' N and 57°30' N, to the west of 3° E. Contains part of the Doggerbank, the 'Gut' and the 'Botney Gut'
Noordzee-midden (oost) (iv)	Area between 53°30' N and 57°30' N and between 3° and 8° E, including the Witte Bank and the largest part of the 'Duitse Bocht'
Noordzee-noord (v)	Area to the north of 57°30' N, from 4° W up to the territorial waters of Norway, with exception of Moray Firth and Fladen
Moray Firth (vi)	Area to the west of the depth contour 50 fathom from Kinnaird Head to 59° N
Fladen (vii)	From the depth contour 50 fathom to 2° E, between 57°30' and 59° N
Engels Kanaal (viii)	From 51° N to the east till the line 'Lands End' - 'Ouessant' to the west
Bristol Kanaal (ix)	East of the line 'Small's' lightship - 'Scilly Islands'
Zuid- en West-lerland en Ierse Zee (x)	Between 48° N and 54°30' N
West-Schotland (xi)	Area between 54°30' and 60° N and between 4° and 18° W. Rockall included

1) **Vanneste, O.; Hovart, P.** (1959). De Belgische zeevisserij: een economische studie. *Reeks van het Westvlaams Economisch Studiebureau*, 2. Westvlaams Economisch Studiebureau: Brugge, Belgium. 357 pp.

2) downloaded from http://ec.europa.eu/fisheries/press_corner/pictures/carte_ices_en.pdf on 01/12/2008

3) **Omey, E.** (1982). De zeevisserij: een structuuranalyse van de Belgische visserij. Westvlaams Economisch Studiebureau (WES): Brugge, Belgium. 256 pp.



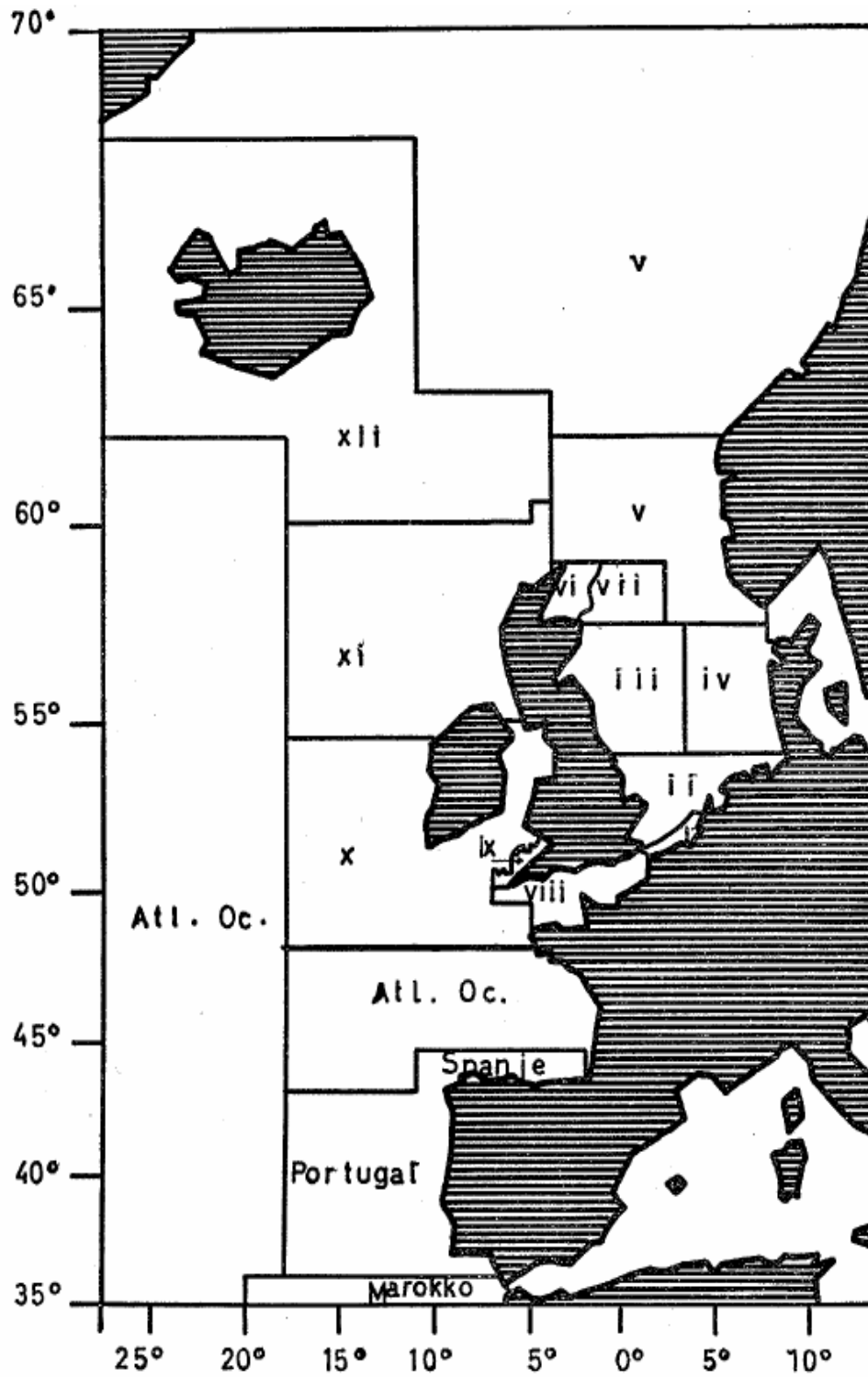


Figure 1: Map with the delineation of the fishing grounds in 1959 according to Vanneste & Hovart (1959).

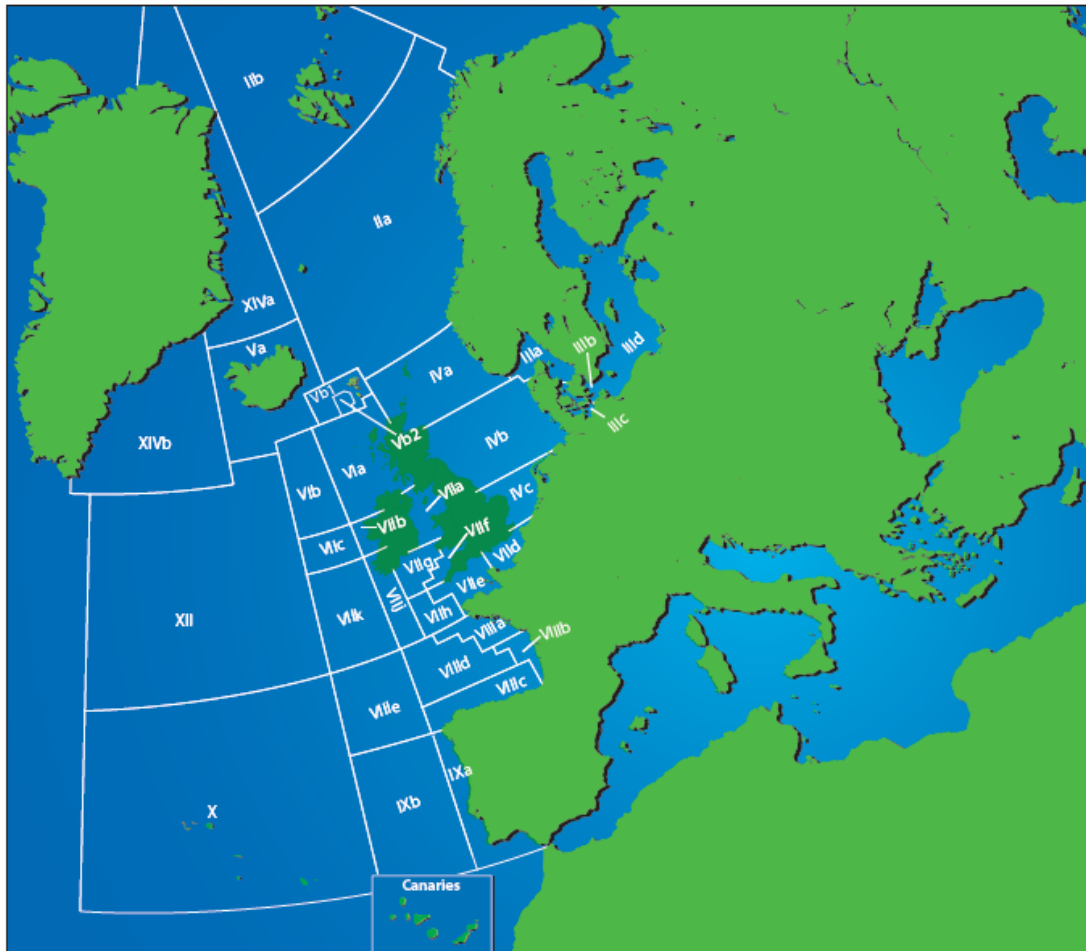


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Source: ICES fishing areas map

Figure 2 is the map with the current delineation of ICES fishing areas.

ICES FISHING AREAS



I	Barents Sea	Vla	West Scotland	VIIIa	South Brittany
IIa	Norwegian Sea	Vlb	Clyde West Scotland (Clyde stock)	VIIIb	South Biscay
IIb	Spitzbergen and Bear Island	Vlc	Rockall	VIIIc	North and North-west Spain
IIIa	Skagerrak and Kattegat	Vld	Irish Sea	VIIIe	Central Biscay
IIIb	Sound	Vle	West Ireland	VIIIe	West Biscay
IIIc	Belt	Vlf	Porcupine Bank	IXa	Portuguese coast
IIId	Baltic Sea	Vlg	Eastern English Channel	IXb	West Portugal
IVa	Northern North Sea	Vlh	Western English Channel	X	Azores
IVb	Central North Sea	Vli	Bristol Channel	XII	North Azores
IVc	Southern North Sea	Vlii	South-east Ireland	XIVa	East Greenland
Va	Iceland	Vlij	Little Sole	XIVb	South-east Greenland
Vb	Faroes	Vlii	Great Sole		
		Vlik	West Great Sole		

Figure 2: Map with current location of ICES fishing areas

http://ec.europa.eu/fisheries/press_corner/pictures/carte_ices_en.pdf (Downloaded on 01/12/2008)





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Omey (1982) published a map with the ICES fishing areas as in 1982 (see figure 3). This map was used for comparison with the present delineation of the ICES fishing areas. This 'older' map contains less detail than the current ICES map, in particular because of the spatial aggregation in areas VII, VIII, IX, although the wider geographical delineations are the same.

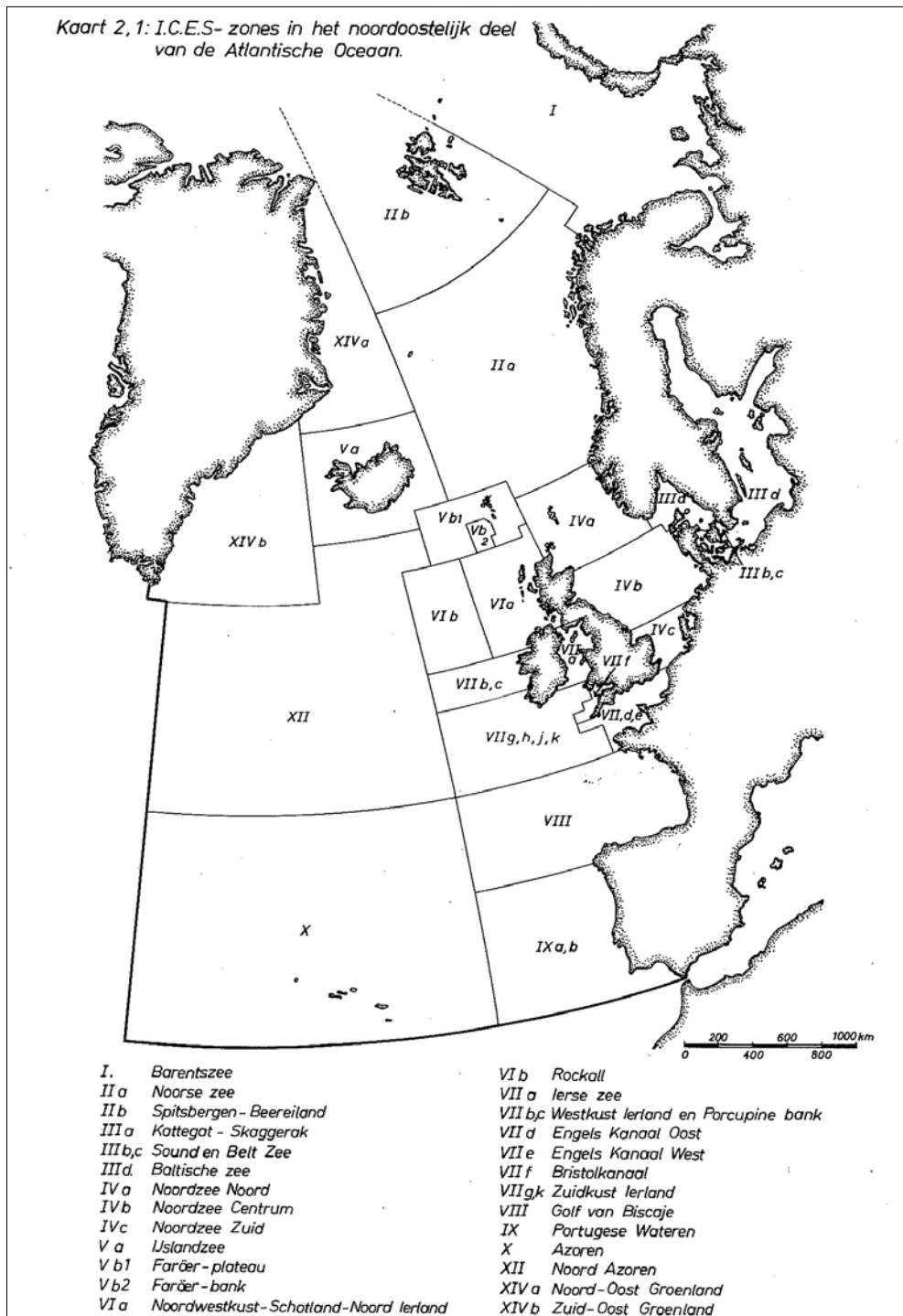


Figure 3: Map with ICES fishing areas in the year 1982 (Omey 1982)

Omey, E. (1982). De zeevisserij: een structuuranalyse van de Belgische visserij. West-vlaams Economisch Studie Bureau (WES): Brugge, Belgium. 256 pp.





Source: VLIZ Marine Gazetteer website

The VLIZ Marine Gazetteer (VLIMAR) website (<http://www.vliz.be/vmdcdata/vlimar/index.php>) contains an online list of hierarchical geographical names, linked to geographical information and maps. This website was used for allocating coordinates to particular fishing grounds or amending the standardized name of the fishing area (see step 2).

Table 6 describes the final delineation of the fishing grounds based on different sources and interpretation where necessary. Where appropriate, decisions concerning data representation are also included. The result is a map of the historical fishing grounds of Belgian sea fisheries (1929–1999) as included in figures 4 & 5.

Table 6: Sources, interpretation and decisions concerning representation of data for the final delineation of historical fishing grounds of Belgian sea fisheries (1929–1999)

Standardized name of fishing ground	Final delineation of fishing ground	Interpretation – Representation of data
Kustzee	Based on map 1959	None
Noordzee (zuid)	Based on map 1959	None
Noordzee (midden)	Based on map 1959	Combination of Noordzee (midden-oost) and Noordzee (midden-west). In 3 years (1947, 1948, 1949) Noordzee (midden-oost) and Noordzee (midden) occur together in source files: data from Noordzee (midden) are represented as Noordzee (midden-west)
Noordzee (midden-oost)	Based on map 1959	None
Noordzee (midden-west)	Based on map 1959	None
Noordzee (noord)	Based on map 1959	None
Noordzee	Based on map 1959	Noordzee only occurs in 1929 together with Kustzee and Noordzee (zuid). Therefore Noordzee is assumed to be a combination of Noordzee (midden-oost), Noordzee (midden-west) and Noordzee (Noord)
IJslandzee	Based on map 1959 (no coordinates mentioned in the publication of Van-neste & Hovart)	None (Faeröer is a separate fishing area)
Faeröer / Faroe	Based on ICES map	None
West-Schotland	Combination of ICES map and map 1959	Assumption: West-Schotland does not contain Rockall because of years where both fishing areas are reported in source files
Rockall	Combination of ICES map and map 1959	None
Moray-Firth	Based on map 1959	None
Fladen	Based on map 1959	None
Engels Kanaal	Combination of ICES map and map 1959	None
Kanaal van Bristol	Combination of ICES map and map 1959	None
West-Ierland	Combination of ICES map and map 1959	ICES area VII C: "Porcupine Bank" also belongs to West-Ierland
Zuid- en West- Ierland	Combination of ICES map and map 1959	None





Table 6 continued: Sources, interpretation and decisions concerning representation of data for the final delineation of historical fishing grounds of Belgian sea fisheries (1929–1999)

Zuid-Ierland	Combination of ICES map and map 1959	Area Zuid- en West-Ierland minus area West-Ierland
Ierse Zee	Combination of ICES map and map 1959	None
Spanje	Op basis van ICES-kaart	In 1 year (1933) Spanje occurs together with Portugal Marokko Spanje. The data are added up and represented as Portugal Marokko Spanje
Portugal Marokko Spanje	Based on map 1959	None
Portugal Marokko	Combination of ICES map and map 1959	Area Portugal Marokko Spanje minus area Spanje Portugal Marokko is reported in 1 year (1931), data are represented as Portugal Marokko Spanje
Witte Zee	Based on VLIMAR Min. Lat 63.8033° N Min. Long 31.8588° E Max. Lat 68.6681° N Max. Long 44° 29' 47" E	None
Witte Zee - Bereneiland	Based on VLIMAR and interpretation	Combination of area Witte Zee and area Bereneiland
Bereneiland	Based on interpretation	Section drawn around Bereneiland
Frankrijk-West	Based on map 1959	Space to the west of France (designated as "Atl. Oc." on map 1959)
Barentszee	Based on VLIMAR Min. Lat 63.8036° N Min. Long 15.5° E Max. Lat 82.893° N Max. Long 68.6034° E	None
Labrador	Based on VLIMAR Min. Lat 47.4179° N Min. Long -64.2597° W Max. Lat 60° N Max. Long -43.9022° W	None
Golf Gascogne	Not delineated because there are no data linked to this fishing area	
Groenland	Based on ICES map	Combination of ICES areas XIVa and XIVb
Andere gronden	No representation possible	None





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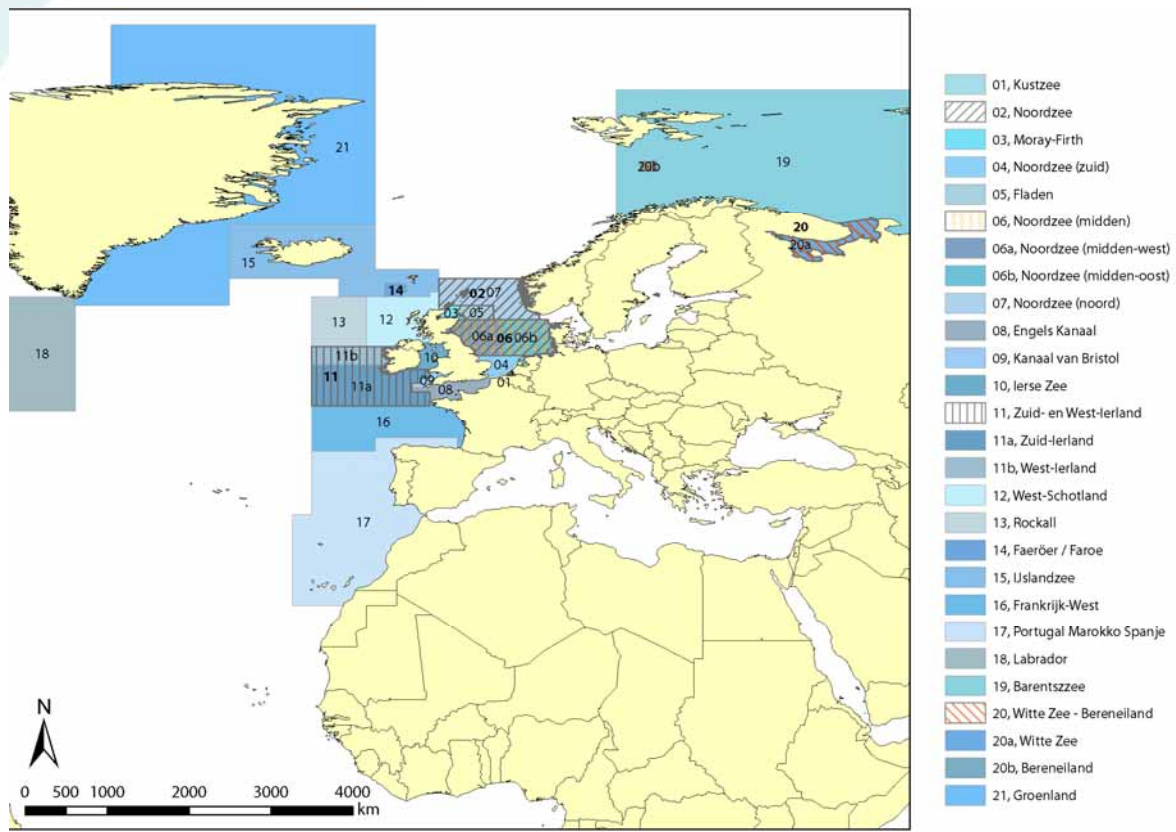


Figure 4: Map of historical fishing grounds of the Belgian sea fisheries (1929-1999).

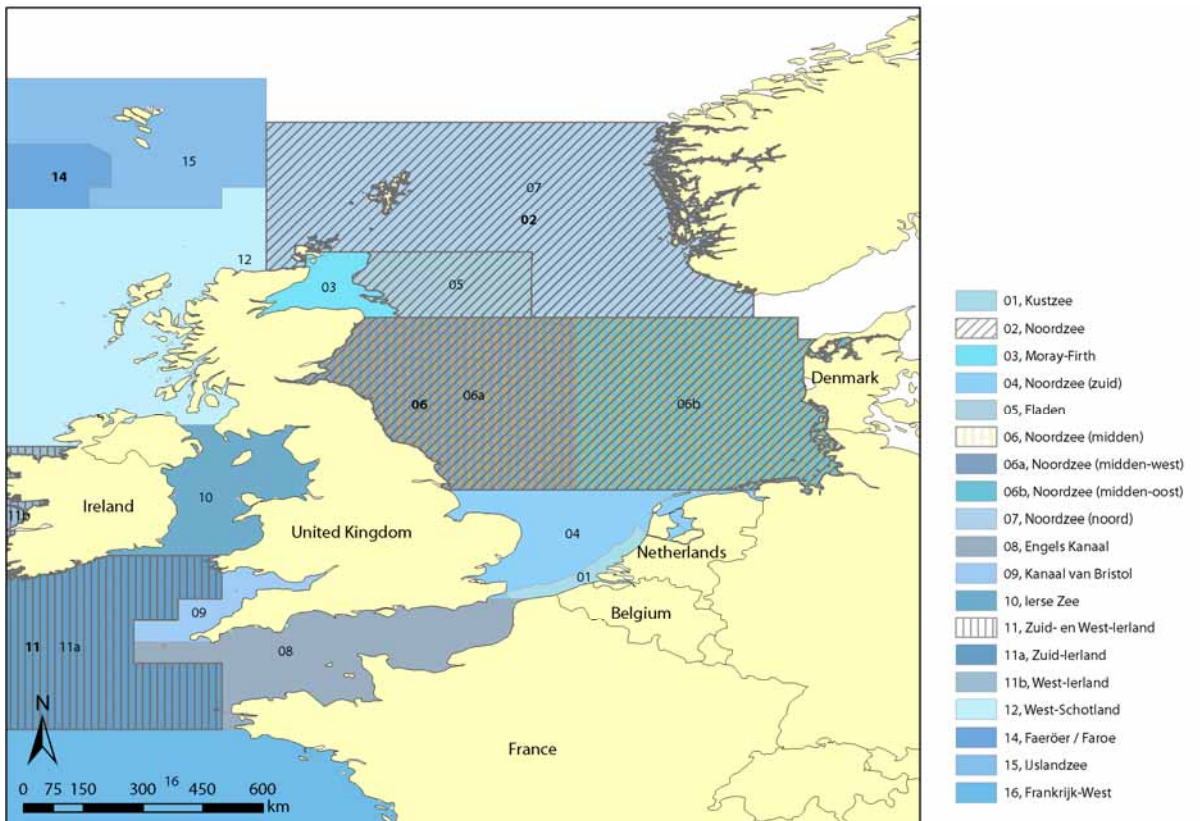
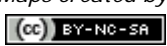


Figure 5: Detail of the map of historical fishing grounds of the Belgian sea fisheries (1929-1999).
 Maps created by VLIZ and licensed under a 'Creative Commons Attribution-Non-Commercial Share Alike 3.0 License'.





3. Conclusions

The map with standardized historical fishing grounds of the Belgian sea fisheries is necessary for the representation of standardized data on landings by fishing area on a map. Furthermore, this map, based on the local integrated database, has an important added value compared to the ICES fishing areas map. The local dataset with data on landings (and value of landings) contains information on a smaller scale than the data delivered by Belgium to ICES after spatial aggregation of specific fishing areas:

- For ICES area IVc there is a division into Kustzee and Noordzee (zuid).
- For ICES area IVb there is a division into Noordzee (midden-oost) and Noordzee (midden-west).
- For ICES area IVa there is a division into Moray-Firth, Fladen and Noordzee (noord).

How to refer to this document?

VLIZ A Century of Sea Fisheries (2009). Manual for standardization and geographical delineation of historical fishing grounds in Belgian sea fisheries statistics (1929–1999). *VLIZ Information Sheets*, 121. Vlaams Instituut voor de Zee (VLIZ): Oostende, Belgium. 14pp. Online available at http://www.vliz.be/NL/Zeecijfers/Zeecijfers_Belgische_Zeevisserij

